



The Health Profession Assistant: Consideration of the Physician Assistant Application for Regulation

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SECTION I

Regulation of a New Health Profession under the
Regulated Health Professions Act (RHPA), 1991:

HPRAC Criteria and Process

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1. About the Health Professions Regulatory Advisory Council (HPRAC)

The Health Professions Regulatory Advisory Council (HPRAC) is established under *the Regulated Health Professions Act, 1991 (RHPA)*, with a statutory duty to advise the Minister on health professions regulatory matters in Ontario. This includes providing advice to the Minister on:

- Whether unregulated health professions should be regulated;
- Whether regulated health professions should no longer be regulated;
- Amendments to the *Regulated Health Professions Act (RHPA)*;
- Amendments to a health profession's Act or a regulation under any of those Acts;
- Matters concerning the quality assurance programs and patient relations programs undertaken by health colleges; and,
- Any matter the Minister refers to HPRAC relating to the regulation of the health professions.

The Minister of Health and Long-Term Care relies on recommendations from HPRAC as an independent source of evidence-informed advice in the formulation of policy in relation to health professional regulation in Ontario. In providing its advice and preparing its recommendations, HPRAC is independent of the Minister of Health and Long-Term Care, the Ministry of Health and Long-Term Care, the regulated health colleges, regulated health professional and provider associations, and stakeholders who have an interest in issues on which it provides advice. This ensures that HPRAC is free from constraining alliances and conflict of interest, and is able to carry out its activities in a fair and unbiased manner.

When considering health professions regulatory matters, HPRAC ascribes to the following overriding principles:¹

- Meeting public expectations for improved access to high quality and safe care;
- Supporting inter-professional care and optimizing the contribution of all health professionals;
- Applying standards for the regulation of health professionals;
- Ensuring a shared accountability agenda that encourages and values collaboration and trust;
- Using resources efficiently;
- Sustaining the health care system; and,
- Maintaining self-regulation.

HPRAC presents its recommendations in a report to the Minister of Health and Long-Term Care for consideration. This report is confidential until released by the Minister. As per the *RHPA*, HPRAC recommendations are advisory only. The Minister is not bound to accept HPRAC's advice. The release of an HPRAC report and any follow-up action are at the discretion of the Minister. Should the minister choose to accept HPRAC's advice, the Ministry of Health and Long-Term Care is responsible for implementation based on the direction of the government.

Please visit www.hprac.org for more information about the HPRAC's mandate and role.

¹ Health Professions Regulatory Advisory Council. (2008). *Critical links: transforming and supporting patient care*. Toronto: Author. pp. 2-3.

2. The Application of the Criteria

The following guidelines are intended to assist a profession in compiling its application. A new profession requesting regulation under the *RHPA* will be assessed according to the following methodology. HPRAC will use a two part assessment as the means by which it will decide whether to recommend a health profession for regulation. In the first part of the assessment (primary criterion), HPRAC will determine whether the applicant meets the 'risk of harm threshold' to be considered for regulation under the *RHPA*. This part is designed to ensure that the assessment retains a focus on 'risk of harm'. In the second part (secondary criteria), HPRAC will determine whether it should recommend regulating a profession that it has determined to be posing a risk of harm to the public. The secondary criteria also aim to assist in determining whether an application meets the overriding principles outlined in p. 1.

All proposals for regulating new professions under the *RHPA* will be assessed against the following criteria. Please note that, as per the *RHPA*, HPRAC will assess a profession's suitability for regulation only on the request of the Minister of Health and Long-Term Care. In determining whether the primary and secondary criteria have been met, HPRAC relies on relevant, verifiable evidence from applicants.² As such, it is incumbent upon the applicant to present such evidence related to both the primary and secondary criteria outlined below. The HPRAC criteria for regulating a new profession will be continuously updated to keep pace with the evolving health professions regulatory and health system landscape in Ontario.

Primary Criterion:

The primary criterion assesses whether the health profession seeking regulation under the *RHPA* poses a risk of harm to the health and safety of the public, and it is otherwise in the public interest that the particular profession be regulated under the *RHPA*. The applicant must demonstrate with evidence that there is a risk of harm to the public. As such, applicants from new professions seeking regulation under the *RHPA* must meet the risk of harm threshold. In order to meet the risk of harm threshold, the applicants must meet *all* three conditions below and demonstrate with relevant, verifiable evidence that:

- the profession is involved in duties, procedures, interventions and/or activities with the significant potential for physical or mental harm to patients/clients, including instances where the profession delivers services under direct or indirect supervision by another regulated or unregulated health professional;
- the profession is engaged in making decisions or judgment that can have a significant impact on patients'/clients' physical or mental health, including instances where the profession delivers services under direct or indirect supervision by another regulated or unregulated health professional; and,
- there is a significant potential of risk of harm occurring within the professional duties and activities.

Applicants that meet the primary criterion with relevant, verifiable evidence will then be assessed on the extent to which they meet the secondary criteria.

² Please see Appendix A for a description of evidence. 'Relevant evidence' in this context means information that is able to make the existence of any fact that is of consequence to the determination of decision or outcome more probable or less probable than it would be without the evidence.

Secondary Criteria:

Once the primary criteria are met with relevant, verifiable evidence, HPRAC will apply the secondary criteria to measure the appropriateness of regulation under the *RHPA*. The secondary criteria:

- have equal weight;
- focus on the profession specific factors and assess whether regulation under the *RHPA* is, in fact, the most appropriate and effective means to protect the public.;
- provide applicants with an understanding of where the requirements for statutory regulation lie, and in doing so, give an indication of the issues with which HPRAC is concerned;
- are intended to identify other salient factors that need to be addressed to ascertain whether regulation under the *RHPA* is in the public interest; and,
- are not intended to provide a barrier for a profession that meets the primary criteria to prevent regulation under the *RHPA*.

HPRAC may not necessarily decide to recommend against regulation of a profession if its application does not satisfy all the secondary criteria. However, HPRAC strongly recommends that applicants make every effort to provide all relevant evidence to support their applications to allow the Advisory Council to make evidence-informed decisions.

3. The Criteria for Regulating a New Profession under the *RHPA*

To determine whether a health profession should be regulated under the *RHPA*, HPRAC will apply the primary and secondary criteria outlined below. The primary criterion must be met in order to be considered for regulation under the *RHPA*. If the applicant meets the primary criteria, it will then be assessed on the extent to which it meets the secondary criteria. The secondary criteria will each have equal weight. The secondary criteria have been organized by the following themes: professional autonomy; competency and scope of practice; mechanisms of regulation and economic impact; and health system impact.

Primary Criterion

Primary Criterion: Risk of Harm

The fundamental principle with respect to health professional regulation under the *RHPA* is the protection of the public from harm in the delivery of health care, premised on the fact that it is in the public interest to do so. As such, it is vital to demonstrate that the health profession seeking regulation under the *RHPA* poses a risk of harm to the health and safety of the public. The term risk of harm refers to actions where a substantial risk of physical or mental harm may result from the practice of the profession.³ This criterion is intended to provide a clear articulation of the degree of harm posed by the profession to the health and safety of the public. In addressing the risk of harm in this context, the applicant is asked to identify the risks associated with the practice of the profession concerned, as distinct from risks inherent in the area of health care within which the profession operates.

Information required:

1. Provide a general description of services provided by the practitioners of the profession.
2. Specify and describe the diagnostic modalities employed by practitioners of the profession.
3. Specify areas of practice, diagnosis, treatment, interventions, modalities, and services:
 - a) Performed exclusively by practitioners of the profession;
 - b) Also performed by other regulated health professions;
 - c) Also performed by other unregulated health professions;
 - d) Performed in conjunction with other regulated health professions, with specific examples and information on the following: *Include references to, and copies of, scientific literature and other published information*
 - the nature and extent of any overlaps in practice with other health professions; and
 - diagnostic and treatment modalities and services provided by the practitioners. Demonstrate how they may differ from other health professions.
4. Specify which diagnoses/assessments, interventions, substances, treatment modalities, and services provided by the profession entail a risk of harm to patients/clients. *Include references to, and copies of, scientific literature and*

³ The harm clause in the *RHPA* prohibits an individual from treating or advising someone about his/her health in circumstances in which it is reasonable to assume that serious bodily harm may cause. The purpose is to capture dangerous actions that may not be specifically prohibited by the controlled acts, particularly to capture unforeseeable risky activities. Referring to the 2006 HPRAC report entitled "Regulation of Health professions in Ontario: New Directions at pp. 55-56, citing *R. v. McCraw*, [1990] 3S.C.R. 72, Steinecke notes that the word "bodily" replaces the word "physical" in order to capture mental harm," see Steinecke, R. (2010). *A complete guide to the RHPA*. Aurora: Canada Law Book, 11:20.30

other published information.

5. Explain the extent to which public safety is at risk because the profession remains unregulated. In particular, please respond to the following questions:
 - a) Explain the nature and severity of the risk of harm to patients/clients. *Include references to, and copies of, scientific literature and other published information.*
 - b) Provide examples of patients/clients being harmed by a practitioner who performed services incompetently or inappropriately. *Include references to, and copies of, scientific literature and other published information.*
 - c) Where possible, provide the rate and nature of complaints of harm received by professional associations and related organizations in the past 10 years.
 - d) Describe any existing voluntary disciplinary or investigations process, including the outcomes of these processes. Where possible, provide supporting documentation to illustrate these examples.
6. Explain the anticipated effect of regulation on the current risk of harm presented by the profession?
7. Where the profession is supervised by regulated and/or unregulated health professionals, what direct and indirect mechanisms are in place to ensure the delivery of safe care, including quality of work performance?
8. What proportion of practitioners in the profession concerned performs duties without direct and indirect supervision?
9. How do recent advances in treatment and technology contribute to potential risks of harm posed by the profession?
10. Explain the profession's experience with liability/insurance protection, including the current percentage of practitioners of the profession who carry liability insurance coverage. What is the position of professional associations and related organizations on this matter?
11. Describe any process undertaken to determine the public need for regulation and the response/results achieved.
12. What professional titles should be restricted to members of the profession? Why?
13. Identify any known circumstance(s) under which a member of the profession should be required to refer a person to another health profession?

Note: Please make sure to include evidence to support your answers.

Secondary Criteria

Secondary Criteria

Criterion: Professional Autonomy

The central element of professional autonomy is the assurance that individual professionals have the freedom to exercise their professional judgment in the care and treatment of their patients. This criterion is intended to assess the degree to which the profession is able to exercise professional judgement autonomously in the delivery of care.

Information required:

1. To what extent do members of the profession practice autonomously?
2. Do some members of the profession enjoy greater autonomy than others? If so, describe the factors that most influence a professional's degree of autonomy?
3. What measures currently exist to ensure accountability of practitioners of the profession concerned?
4. Which particular methods, procedures, tasks or services, if any, are subject to a greater or lesser degree of accountability?
5. How would self-regulation affect the current model of accountability? How would the public interest be served by this change?
6. Are members of the profession currently performing controlled acts under the delegation of regulated professionals? How would the public interest be served by this change?

Note: Please make sure to include evidence to support your answers.

Secondary Criteria

Criterion: Educational Requirements for Entry to Practice

The applicant is asked to demonstrate whether the profession has defined the educational routes to the profession. The route can begin with completion of studies at an independently accredited educational institution or a post-secondary program offered by a recognized educational institution. These institutions will prepare candidates to meet externally validated entry qualifications. This criterion is intended to assess whether the profession possesses skills and competencies necessary to deliver safe and competent care on entry.

Information required:

1. Describe the educational and clinical/practical training programs available in Ontario. Specify theoretical and clinical/practical experiences.
 - a) Describe how the profession's body of knowledge and approach to diagnostic/treatment modalities and services are taught in this program.
 - b) Relate the education and training to the diagnostic/assessment abilities, treatment modalities and services.
 - c) What percentage of the practitioners of the profession is educated and trained in Ontario?

- d) What percentage of the members of the professional association is educated and trained in Ontario?
- e) What percentage of these programs is accredited by recognized provincial and/or national accreditation bodies?
- 2. Identify and describe the Ontario and Canadian academic education and clinical/practical training programs available to persons seeking to enter this profession. Specify theoretical and clinical/practical experiences.
 - a) Describe how the profession's body of knowledge and approach to diagnostic/treatment modalities and services are taught in these institutions.
 - b) Relate the education and training to the diagnostic/assessment abilities, treatment modalities and services.
- 3. Identify and explain the major differences between programs in different jurisdictions.
- 4. What academic credentials are required by the following organizations:
 - a) the professional association, as a condition of membership;
 - b) employers; or
 - c) other Canadian jurisdictions, as a condition of registration with a regulating body.
- 5. What need, if any, has been identified for varying levels of registration?

Note: Please make sure to include evidence to support your answers.

Secondary Criteria

Criterion: Body of Knowledge and Scope of Practice

This criterion assumes an intersection between body of knowledge and scope of practice. The body of knowledge refers to the extent to which practitioners must call upon a distinct set of concepts, terms and activities in the practice of the profession (i.e., what the profession does and how the profession practices). The scope of practice refers to the rules, regulations, and boundaries within which a qualified health professional with appropriate training, knowledge, and experience may practice in an area of health care. This criterion is intended to assess whether there is a body of knowledge that can offer the basis for the profession's scope of practice.

Information required:

1. Describe the core body of knowledge of the profession. Include references to, and copies of, scientific literature and other published information.
2. Are there professions currently regulated with whom the applicant occupation's body of knowledge overlaps? Include evidence to support your answer.
3. Does the profession concerned subscribe to evidence-based practice? If so, please provide examples of how treatment strategies, interventions, modalities, and services are based on evidence. Please include evidence to support your answer. *Suitable evidence would include scientific literature and other published information.*
4. Does the profession concerned practice based on evidence of efficacy? If so, please provide examples of how treatment strategies, interventions, modalities, and services are based on efficacy. Please include evidence to support your answer. *Suitable evidence would include scientific literature and other published information.*
5. Provide a proposed scope of practice for the profession. Explain how the scope of practice relates to the body of knowledge described above. Include references to, and copies of, scientific literature and other published information.
6. To what extent does the professional association or other organizations set standards of practice for diagnostic/treatment modalities and services based on the identified body of knowledge? How are these standards enforced? Provide a copy of the standards of practice and ethical guidelines.
7. Does the applicant's profession require commitment to continuous professional development? If so, please provide written details of existing continuous professional development programs.

For the following question, provide the rationale for your position; please include items such as the body of knowledge, educational preparation and standards of practice. Also include references to, and copies of, scientific literature and other published information providing evidence for your argument and rationale.

8. With respect to the proposed scope of practice statement:

- a) What controlled acts (if any) should be authorized to the members of the profession?
- b) What specific acts (if any) should practitioners be authorized to delegate to others? Specify the circumstances where members of the profession may choose to delegate a controlled act.
- c) What diagnostic/treatment modalities and services should members of the profession be authorized to perform?
- d) What limitations of practice, if any, should be imposed on members of the profession? Which acts, if any, related to the field of care of the profession should not be authorized to the profession? What diagnostic/assessment abilities, treatment modalities and services are not part of the scope of practice for members of the profession?
- e) If a new controlled act is being requested, describe the degree to which this act would be exclusive to the profession. To what extent may the proposed act be shared with other professions? Where opportunities for sharing exist, please describe any consultation that has occurred with the affected stakeholders.
- f) Please explain how the proposed scope of practice serves the public interest and provides adequate public protection without unduly restricting the public's choice of health care providers.
- g) Are there currently regulated health professions with whom the proposed scope of practice overlaps?

Note: Please make sure to include evidence to support your answers.

Secondary Criteria

Criterion: Economic Impact of Regulation

The applicant must demonstrate an understanding and appreciation of the cost of regulation on the profession, the public and the health care system. The costs and benefits of the preferred regulatory mechanism must be outlined. The applicant is required to show that the practitioners of the profession are able to support the full costs and responsibilities of regulation. This criterion intends to assess the sustainability and viability of regulating the profession concerned under the *RHPA*.

Information required:

1. Health professions regulatory bodies are required to provide a range of mandatory functions under the *RHPA*, including:

- a) establishing requirements for entry to practice
- b) developing and promoting practice standards
- c) administering quality assurance programs
- d) enforcing standards of practice and conduct

In addition, they are to support the regulation of professions in the public interest by:

- a) participating in the legislative/regulatory processes
- b) collecting and sharing statistical information about members

As part of the proposal, the applicant must present a viable business plan to demonstrate the profession's ability to support these mandatory functions. The business plan should include estimated financial resources required to provide these functions, and the applicant profession's ability to generate necessary financial resources through registration

and ancillary fees.

2. Statutory regulation of health professions may have economic and financial implications. Describe the predicted effect of regulation on the profession as it relates to:
 - a) education and training programs;
 - b) health care system;
 - c) continuous quality improvement;
 - d) access to care; and,
 - e) service efficiency and costs.
3. Explain how the preferred type of regulatory body will be financially self-sustainable. Explain how members of the profession will be able to assume the operational functions and responsibilities, including the expense of administering their own College (including legal costs, etc.).
4. Explain the costs employers may incur to ensure they have additional systems in place for the employment of the regulated profession.
5. Address the cost of the professionals' time taken to comply with regulatory requirements which may take them away from their primary purpose of providing care.

Note: Please make sure to include evidence to support your answers.

Secondary Criteria

Criterion: Regulatory Mechanisms

The applicant is asked to demonstrate that regulation under the *RHPA* is the most appropriate means to regulate the profession. The applicant is asked to explore potential statutory and non-statutory regulatory regimes which could be appropriate and merit consideration. In other words, the applicant is required to demonstrate why it prefers a particular type of regulatory mechanism over others. This criterion is intended to provide information to ascertain the most appropriate way to regulate the health profession concerned.

Information required:

1. Are practitioners of this profession subject to another regulatory mechanism? If so, please provide details.
2. Does the profession believe that it should be regulated under its own College? If so, describe the reasons why the applicant prefers a self-regulatory model over other models (e.g., voluntary self-regulation, licensing, accreditation, etc.).
3. Has the profession considered seeking regulation within an existing regulatory college? Describe the conclusions and outcomes of this discussion.
4. Has the profession considered partnering with likeminded unregulated professions working in a similar field and who may also be seeking regulation? Describe the process and conclusions of this discussion.
5. Should statutory self-regulation not be found to be appropriate for the profession, what alternate forms of regulation or governance may be considered (e.g., voluntary self-regulation, licensing, accreditation, etc.)? How might other applicable laws or existing standards meet the profession's needs?
6. Where possible, provide copies of legislation regulating this profession in other jurisdictions, including the statutory scope of practice.

Note: Please make sure to include evidence to support your answers.

Secondary Criteria

Criterion: Leadership's Ability to Favour the Public Interest and Membership Support and Willingness of the Profession to be regulated

The applicant must demonstrate that the profession's leadership has shown it will distinguish between the public interest and the profession's self-interest. Regulatory colleges are mandated to privilege the former over the latter. In addition, the applicant must also demonstrate that the members of the profession support regulation with sufficient numbers and commitment, such that widespread compliance with regulation is likely. Members of a profession requesting regulation must also recognize that regulation will cost them money, time and effort. The applicant is asked to show that the practitioners of the profession are sufficiently numerous to support and fund, on an ongoing basis, the requisite number of competent personnel to enable the regulatory body to continue to discharge its functions effectively. This criterion intends to assess whether the leaders and members are able and committed to support the public interest mandate of regulation.

Information required:

1. Please provide evidence of the profession's commitment to the public interest (e.g. communications, policies or procedures of the professional association).
2. Does a complaints and disciplinary procedure currently exist for the profession? Please describe the process, including the length of time the program has been in existence, as well as evidence of the degree to which it has been effective in identifying and correcting incidents of sub-standard care or other infractions?
3. Where available, provide the profession's current Code of Conduct.
4. Is a proactive, self-initiated complaints process available to the profession?
5. Do the members of the profession/association want self-regulation, and are they willing to provide financial resources, time and effort required for self-regulation? Please describe any consultation process undertaken and the response/results achieved. Please include the consultation methodology, including sample size, selection methodology, etc.
6. Do related organizations (e.g., associations and regulatory colleges representing practitioners in similar or related areas of health care) agree with the need for regulation of this profession? Document the discussions and outcomes from any consultation process undertaken on this topic.
7. How many persons practice this profession in Ontario? How many practitioners belong to an association? Please provide independently assessed and verified figures.
8. Are practitioners who do not belong to the professional body or bodies also supportive of the application? Where possible please provide independently assessed and verified figures.
9. What actions have been taken to align the profession with an established health professions regulatory College?
10. Explain the proposed fee structure for College members.

Note: Please make sure to include evidence to support your answers.

Secondary Criteria

Criterion: Health System Impact

The applicant is asked to demonstrate the extent to which the regulation of the profession concerned would produce positive health system impacts in relation to inter-professional collaboration, labor mobility, access to care, health outcomes, and productivity. This criterion is intended to assess the overall impact of regulating the profession to the broader health care system in Ontario.

a. Inter-professional Collaboration: Inter-professional collaboration in health care is now considered a high priority, as concerns about patient safety, health and human resources shortages, and effective and efficient care have reached significance. The applicant is asked to demonstrate the profession's willingness and capacity to effectively collaborate with other professions in a client-centered model of care. This criterion attempts to assess to what degree the regulation of the profession concerned would support and sustain the collaborative delivery of health care.

Information required:

1. Does the profession concerned possess necessary competencies to support and sustain inter-professional collaboration?
2. What public statements, if any, have been made by the profession regarding inter-professional collaboration? Please provide any statements or policy papers to this effect.
3. List the professional groups with whom the profession collaborates most often. For each profession, describe the typical working relationship, including decision-making processes, reporting structures and examples where mutual support benefits the patient/client.
4. Provide examples of initiatives by the profession to increase collaboration with other professional groups. Examples may include:
 - a) internal policies encouraging collaboration;
 - b) entry to practice competency requirements;
 - c) inter-professional training and education; or,
 - d) shared standards of practice.
5. What overall effect will self-regulation have on the profession with respect to inter-professional collaboration?

Note: Please make sure to include evidence to support your answers.

b. Labour Mobility: The effect of national labour mobility legislation on regulated health professions includes freer movement of care providers between Canadian jurisdictions. Given possible implications for mobility stemming from regulation, the applicant is asked to demonstrate an appreciation for the risks and benefits of increased labour mobility, and provide evidence of strategies to handle any challenges and opportunities. This criterion attempts to assess the impact of regulation on the Labour mobility in the health sector and supply and demand of practitioners concerned.

Information required:

1. Is the profession currently subject to national labour mobility legislation in other jurisdictions? If so, explain the potential implications of out-of-province members registering to practice in Ontario.
2. Does a national entry to practice standard, examination scheme or competencies exist for the profession?
3. Where members in other Canadian jurisdictions are authorized to perform procedures and tasks not currently sought by the applicant, how does the applicant intend to resolve inconsistencies?

4. What would be the overall impact of regulation on supply and demand of health professionals concerned?

Note: Please make sure to include evidence to support your answers.

c. Access to Care: Given the importance of access to care in eliminating health disparities as well as facilitating the prevention of disease and the promotion of health, the applicant is asked to demonstrate how regulation will increase access to safe, high quality and efficient health care in Ontario. This criterion attempts to assess how the regulation of the profession concerned would impact existing health care needs of Ontarians.

Information required:

1. What evidence exists of a need for regulation in order to enhance access to the type of care provided by the profession?
2. How would regulation of the proposed new profession impact access to health services?

Note: Please make sure to include evidence to support your answers.

d. Health Human Resource Productivity:⁴ The profession is asked to demonstrate how regulation will improve health outcomes (health status protection or improvement for individuals or populations) relative to required health human resource inputs (time, effort, skills and knowledge). This criterion aims to assess whether the regulation of the profession concerned would have an influence on the issues of productivity and health human resources.

Information required:

1. Does the profession currently measure its productivity? If so, please elaborate.
2. How would regulation improve the productivity of the profession?

Note: Please make sure to include evidence to support your answers.

e. Health Outcomes: This term refers to the impact healthcare activities of the profession concerned have on people. Health outcomes normally fall within one of three domains: clinical, psychosocial and quality of life. The profession is asked to demonstrate how regulation will improve health outcomes. This criterion aims to assess health outcomes which may be attributable to interventions of the profession concerned.

Information required:

1. Does the profession currently measure health outcomes? What are the contributions of the profession to positive health outcomes?
2. How does self-regulation improve health outcomes?

Note: Please make sure to include evidence to support your answers.

⁴ Productivity is defined as the output per unit of input; it is a function of how quickly and how well we do things. Most experts talk about productivity in terms of labour productivity – the quantity of output per unit of time. This is a particularly relevant metric in health care since approximately 70 percent of the cost of health care is attributable to labour or health human resources, Centre for Productivity and Health Human Resources (2009), Retrieved from: http://www.cprm.org/documents/51766_EN.pdf.

4. The Recommendation-Making Process

1. The Minister may request that HPRAC undertake a review of a health profession seeking regulation and/or other health professions regulatory matters, and make recommendations. As per the *RHPA*, HPRAC undertakes reviews only on the Minister's request.
2. Following receipt of the Minister's referral, the Advisory Council may arrange a meeting with the applicant(s) to discuss the timeframe and other process management issues.
3. If similar or related professions are involved in consideration of a referral, responses to the proposal may be considered jointly by the Advisory Council. Applicants will be informed, to the extent possible, should HPRAC intend to combine projects where there is an overlap in issues to be considered.
4. HPRAC will provide the applicant(s) with: (1) a package that includes questions and guidelines to aid the development of proposal; (2) research conducted by the Advisory Council (e.g., literature, jurisdictional and jurisprudence reviews); (3) timelines; and, (4) other relevant material.
5. These materials will also be posted on the Advisory Council's website at www.hprac.org.
6. Upon receipt of the proposal from the applicant, HPRAC will notify stakeholders (e.g., the public, health professionals, health professional associations, health professions regulatory colleges, etc.) that the applicant's response to the questionnaire has been posted on the HPRAC website for stakeholder feedback.
7. Following notice, stakeholders interested in the review may participate in the feedback process. Notice of opportunities for stakeholder participation in the Advisory Council's review of a matter will be communicated via the Advisory Council's website at www.hprac.org and other media. Stakeholders are encouraged to visit the HPRAC website for regular updates concerning the specific referral, or follow HPRAC on Twitter at <http://Twitter.com/HPRACOntario> to obtain updates and notifications.
8. The purpose of the feedback process is to obtain comments on the proposal for regulating a profession and/or other regulatory matters referred to HPRAC by the Minister. HPRAC will provide questions, guidelines and timelines to aid the feedback process. Stakeholder responses may contain information, with citations and evidence where applicable, that they consider relevant to the question(s) under consideration.
9. The stakeholder feedback can be provided via the HPRAC on-line consultation platform, e-mail, fax or mail. To ensure transparency and encourage open dialogue, the feedback HPRAC receives will be posted on the HPRAC website (please see the section on access to information for guidelines).
10. If required, HPRAC may consult with experts as well as hold focus groups or meetings to obtain information it deems necessary to complete the review of the Minister's referral. Persons or organizations with identified expertise may be invited, at the discretion of the Advisory Council, to make presentations, reports or submissions to the Council. Summaries of these sessions may be posted on HPRAC website (please see the section on access to information for guidelines).
11. HPRAC will conduct all its consultations in both official languages. In some cases, advance notice of the need for French language services may be required.

12. At the conclusion of the recommendation-making process, HPRAC will submit a report containing its recommendations to the Minister for consideration. This report is confidential until released by the Minister. As per the *RHPA*, HPRAC recommendations are advisory only. The Minister is not bound to accept HPRAC's advice. The release of an HPRAC report and any follow-up action are at the discretion of the Minister. Should the minister choose to accept HPRAC's advice, the Ministry of Health and Long-Term Care is responsible for implementation based on the direction of the government.

5. Access to Information

Comments submitted will be considered by the Health Professional Regulatory Advisory Council (Advisory Council) and will help it to determine appropriate recommendations to make to the Minister. To ensure transparency and encourage open dialogue, the feedback received by the Advisory Council may be posted on our website in accordance with our Privacy Statement, available at www.hprac.org/en/privacy.asp.

Please note that unless requested and otherwise agreed to by the Advisory Council, any information or comments received from organizations will be considered public information and may be used and disclosed by the Advisory Council. The Advisory Council may disclose materials or comments, or summaries of them, to other interested parties (during and after the consultation period). An individual who makes a submission and who indicates an affiliation with an organization in his or her submission will be considered to have made his or her submission on behalf of the affiliated organization.

The Advisory Council will not disclose any personal information contained in a submission of an individual who does not specify an organizational affiliation in his or her submission without the individual's consent unless required to do so by law. However, the Advisory Council may use and disclose the content of the individual's submission to assist it in fulfilling its statutory mandate.

The Advisory Council reserves the right to refuse to post a submission, in whole or in part, that, in its sole discretion: is unrelated to the issue under consultation, or, is abusive, obscene, harassing, threatening or includes defamatory comments. If you have any questions about the collection of this information, you can contact the Advisory Council at 416-326-1550.

Appendix A: What is Evidence?

“Evidence concerns facts (actual or asserted) intended for use in support of a conclusion”⁵

Types of evidence that inform the policy process can be grouped as research, knowledge/information and economics (see Table 1). Evidence is usually sought to show effectiveness, the need for policy action, guide effective implementation and/or show cost effectiveness (feasibility).⁶ The table below is designed to act as a guide for the proponent, as to what constitutes appropriate evidence for their proposal for regulation. The type of evidence required will differ based on which criteria the proposal is addressing.

Table 1: Types of Evidence⁷

Types of Evidence	Examples*
Research	Empirical evidence from randomized control trials (1) and other trials
	Analytic studies such as cohort (2) or case control studies (3)
	Time series analyses (4)
	Anecdotal (5)
	Qualitative studies (6)
	Before and after studies (7)
	Surveys (8)
Knowledge and information	Results of consultation processes with networks/groups
	Expert knowledge (9)
	Grey Literature (10)
Economics	Financial Sustainability (11)

* See notes for definitions and further details.

Notes:

(1) Randomised control trials:⁸ Randomised controlled trials are the most rigorous way of determining whether a cause-effect relation exists between treatment and outcome and for assessing the cost effectiveness of a treatment. They have several important features:

- Random allocation to intervention groups

⁵ Oxman, A. D., Lavis, J. N., Lewin, S., and Fretheim (2009). A support tools for evidence-informed health policymaking (STP) 1: What is evidence-informed policymaking? *Health Research Policy and Systems* 7(Suppl 1):S1. Retrieved from: <http://www.health-policy-systems.com/content/pdf/1478-4505-7-S1-s1.pdf>

⁶ Bowen, S., and Zwi, A. B. (2005) Pathways to “evidence-informed” policy and practice: A framework for action. *PLoS Med* 2(7): e166. Retrieved from: <http://www.who.int/rpc/evipnet/Pathways%20to%20Evidence-Informed%20Policy%20and%20Practice%20a%20framework%20for%20action.pdf>

⁷ Ibid.

⁸ Sibbald, B., and Roland, M. Understanding controlled trials: Why are randomized controlled trials important? *British Medical Journal (BMJ)*, 316 : 201. Retrieved from: <http://www.bmj.com/content/316/7126/201.full>

- Patients and trialists should remain unaware of which treatment was given until the study is completed- although such double blind studies are not always feasible or appropriate
- All intervention groups are treated identically except for the experimental treatment
- Patients are normally analyzed within the group to which they were allocated, irrespective of whether they experienced the intended intervention (intention to treat analysis)
- The analysis is focused on estimating the size of the difference in predefined outcomes between intervention groups.

(2) Cohort Study:⁹ This study identifies a group of people and follows them over a period of time to see how their exposures affect their outcomes. This type of study is normally used to look at the effect of suspected risk factors that cannot be controlled experimentally, for example the effect of smoking on lung cancer.

(3) Case Control Study:¹⁰ A case-control study is an epidemiological study (epidemiology is the study of factors that affect the health and illness of populations) that is often used to identify risk factors for a medical condition. This type of study compares a group of patients who have that condition with a group of patients that do not have it, and looks back in time to see how the characteristics of the two groups differ.

(4) Time Series Analysis:¹¹ A time series is a collection of observations of well-defined data items obtained through repeated measurements over time. For example, measuring the value of retail sales each month of the year would comprise a time series. Data collected irregularly or only once are not time series. An observed time series can be decomposed into three components: the trend (long term direction), the seasonal (systematic, calendar related movements) and the irregular (unsystematic, short term fluctuations).

(5) Anecdotal: This may include observations, experiences etc, which are non-scientific in nature.

(6) Qualitative Studies:¹² Qualitative research uses individual in-depth interviews, focus groups or questionnaires to collect, analyse and interpret data on what people do and say. It reports on the meanings, concepts, definitions, characteristics, metaphors, symbols and descriptions of things. It is more subjective than quantitative research and is often exploratory and open-ended.

(7) Before and After Study:¹³ A before and after study measures particular characteristics of a population or group of individuals at the end of an event or intervention and compares them with those characteristics before the event or intervention. The study gauges the effects of the event or intervention.

(8). Surveys:¹⁴ Survey research is one of the most important areas of measurement in applied social research. The broad area of survey research encompasses any measurement procedures that involve asking questions of respondents. A survey can be anything from a short paper-and-pencil feedback form to an intensive one-on-one in-depth interview.

(9) Expert Knowledge: Expert knowledge will be acquired through key informant interviews.

⁹ National Health Service (NHS), Retrieved from: <http://www.nhs.uk/news/Pages/Newsglossary.aspx>

¹⁰ Ibid

¹¹ Australian Bureau of Statistics (2008) Retrieved from: <http://www.abs.gov.au/websitedbs/d3310114.nsf/4a256353001af3ed4b2562bb00121564/b81ecff00cd36415ca256ce10017de2f!OpenDocument>

¹² Supra, see note 5

¹³ Supra, see note 5

¹⁴ Colorado State University, Retrieved from: <http://writing.colostate.edu/guides/research/survey/>

(10) Grey literature¹⁵ is defined as: “Information produced on all levels of government, academia, business and industry in electronic and print formats not controlled by commercial publishing i.e. *where publishing is not the primary activity of the producing body.*” (ICGL Luxembourg definition, 1997 - Expanded in New York, 2004).

Grey literature (also known as gray literature or greylit) is not published commercially or indexed by major databases. While some greylit may be of questionable quality, it can nonetheless have an impact on research, teaching and learning. Greylit may sometimes be the only source for specific research questions. Although some grey literature research is published eventually, in many cases it is not. Since greylit is often not subject to peer review, it must therefore be scrutinized accordingly. Some examples of grey literature include:

- Theses and dissertations
- Conference proceedings and abstracts
- Newsletters
- Research reports (completed and uncompleted)
- Published *documents*/reports (including policy evaluations and statistical analyses)
- Technical specifications, standards, and annual reports

(11) Financial Sustainability: In order to demonstrate financial sustainability, a business plan is required. A business plan allows a business to look ahead, allocate resources and prepare for problems and opportunities. A vital part of the business plan is a projected budget template. A budget template should include projected profit and loss, costs (salaries, legal costs, rent, etc), cash flow etc.

¹⁵ University of British Columbia Library (2011). Retrieved from: <http://tooby.library.ubc.ca/subjects/subpage2.cfm?id=878>

SECTION II

Regulation of Physician's Assistants under the
Regulated Health Professions Act (RHPA), 1991:

Jurisdictional Review

Regulation of Physician Assistants: A Jurisdictional Review

Prepared by:
Secretariat of Health Professions Regulatory Advisory Council (HPRAC)

September 2011

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Objective

The objective of this jurisdictional review is to provide evidence-informed observations on the regulation of physician assistants (PAs) in selected Canadian provinces, selected United States (U.S.) jurisdictions, the United Kingdom (UK), South Africa and Australia. Information on the following six topics was gathered:

1. Current Regulatory Status of the Profession
2. Relevant Legislation, Regulations, or By-laws
3. Scope of Practice
4. Controlled Acts/Reserved/Restricted Acts
5. Entry to Practice Requirements
6. Practice Settings

Context:

Currently, PAs in Ontario practise under the supervision of a physician and are only able to perform controlled acts under delegation as they are not regulated [Canadian Medical Association (CMA), 2010]. The PA role was announced in May 2006 with the launch of HealthForceOntario (HFO), the province's strategy to ensure that Ontarians have access to the right number and mix of qualified health care providers, now and in the future (HFO, 2011). Co-led by the Ontario Ministry of Health and Long-Term Care and the Ontario Medical Association, the PA initiative in Ontario involves about 80 PAs working in demonstration projects in Ontario hospitals, community health centres, family health teams, long-term care homes and in settings where PAs are employed by a physician or group of physicians (Ibid). The initiative also includes the establishment of Ontario-based post-secondary PA education programs (Ibid).

On June 24, 2011, the Minister formally requested advice from the Health Professions Regulatory Advisory Council (HPRAC) on whether the PA profession, ought to be regulated, whether independently or in conjunction with an existing profession under the *Regulated Health Professions Act, 1991* (RHPA), and if so what would be the appropriate scope of practice, controlled acts, and titles authorized to the profession. It was also requested that HPRAC advice consider what model of regulation would be most conducive to interprofessional collaboration between PAs and other health professionals in Ontario.¹

Search Methodology:

A review of the current PA legislation, regulations and where applicable, by-laws, in selected Canadian provinces, U.S. states, the UK, South Africa and Australia, was conducted. In Canada,

¹ The Minister's letter of referral may be found at: http://www.hprac.org/en/resourcesGeneral/MinisterLetter_June242011.pdf

only the provinces where PAs are regulated² (Manitoba and New Brunswick) and those provinces where the PA role has been introduced without regulation (Alberta and Ontario) were reviewed. The eight U.S. states selected for this review were Arizona, California, Michigan, Minnesota, New York, North Dakota, Texas and Washington. These states were chosen based on a number of factors including: geographical characteristics, number of practicing PAs³, key informant recommendations and PA regulatory structures.

The websites for each jurisdiction's regulatory body and professional association were also examined. Where adequate information was not available online, key informant interviews were held by telephone or through email communication with representatives of regulatory bodies, governments and relevant associations. Based on the questions posed by the Minister of Health and Long-Term Care, key themes were identified and defined (see Table 1).

Table 1: Research Theme

Category	Description
Current Regulatory Status of the Profession	Is the profession statutorily regulated? In the absence of regulation, how is the public protected? This category also may include information on discipline, code of ethics, title protection and total PAs, where applicable/available.
Relevant Legislation, Regulations, or By-laws	A combination of laws, regulations, and by-laws that support the regulatory model. An organizational entity is typically assigned the authority to regulate using these tools.
Scope of Practice	"Scope of Practice" refers to a description of the acts and services a profession is legally authorized to offer or perform. It "identifies what a profession does and how it does it. It is the range of activities that a qualified practitioner may practice. [Conference Board of Canada (CBOC), 2007]
Controlled Acts/Reserved/Restricted Acts	In jurisdictions that employ a controlled acts scheme, the performance of certain acts is limited to a group of regulated professionals. In other jurisdictions, the acts which the profession cannot perform are outlined in a statute, regulation, or by-law.
Entry to Practice Requirements	This category includes information on the registration requirements to be met in order to be licensed or registered as a PA.
Practice Settings	This category provides additional information with respect to the settings in which PAs work.

² The PA profession as part of the Canadian Forces was not included in this review due to the lack of statutory regulation surrounding the profession in the Canadian Forces. (Mid-level clinicians have been employed by the Canadian Forces for over 50 years. In 1984 the first class of "physician assistants" graduated from the Canadian Forces Medical Services School in Borden, Ontario. They are generally acknowledged as the first formally trained PAs in Canada (Press Release, University of Manitoba, 2008)

³ The total number of PAs in each jurisdiction reviewed may be found in each jurisdiction's individual chart under Appendix B.

Limitations:

Although this jurisdictional review undertook extensive background research in order to draw its findings, limitations still may exist. The majority of the jurisdictions reviewed and hence the majority of the key findings are from the U.S. states reviewed. Only 4 Canadian jurisdictions were reviewed, 2 of which are regulated, and 3 international jurisdictions, only 1 of which is statutorily regulated. Therefore, aside from the U.S., due to the lack of regulation of PAs in Canada and internationally, there were not many findings in these jurisdictions. The PA profession is well-developed in the U.S. and is regulated in all fifty states, but in other parts of the world, it is still in its infancy.

Summary of Key Findings:

Current Status of the Profession

- In Canada, PAs are statutorily regulated in only two provinces, Manitoba and New Brunswick.
- Manitoba first introduced PAs by way of the *Medical Act* in 1999, under the title of “Clinical Assistant”. However, in 2009, the *Clinical Assistants and Physician Assistants Regulation* under the *Medical Act, 1999*, was amended to permit practice under the title of PA. In 2009, the College of Physicians and Surgeons of New Brunswick (CPSNB) amended the New Brunswick *Medical Act, 1981*, to include PAs.
- In both Manitoba and New Brunswick⁴, PAs are regulated under the province’s College of Physicians and Surgeons and must be registered in order to practice.
- Alberta is the only Canadian Province with a PA voluntary (non-regulated) registry. This registry is held by the College of Physicians and Surgeons of Alberta (CPSA).
- PAs are regulated in all 50 U.S. states. There are three models of PA regulation displayed in the U.S. states reviewed. In three states (New York, North Dakota and Washington), PAs are regulated by a Medical Board. In California, Texas, and Minnesota, PAs are regulated under a Medical Board with a PA Advisory Committee/Council. Finally, in two states (Arizona and Michigan), PAs are regulated by a PA Board/Task Force independent of the Medical Board. In each form of regulation, PA’s are represented to a varying capacity on the council of each governing body.
- Of the three international jurisdictions reviewed, only one of the jurisdictions (South Africa) formally regulates PAs, although they are referred to as Clinical Associates. The U.K. has a similar voluntary registry to that of Alberta, however instead of a regulatory college, the

⁴ PAs are regulated in New Brunswick, however according to the Registrar of the College of Physicians and Surgeons of New Brunswick, the PA profession in New Brunswick is still in it’s beginning stages, with only 2 PAs registered (personal communication, August 10, 2011).

UK Association for Physician Assistants (UKAPA) is the professional body for PAs and is responsible for the registry. PAs are not regulated in Australia.

- The titles “Physician Assistant”, “P.A.”, “Certified Physician Assistant” and different variations of, are protected in all of the reviewed jurisdictions that regulate PAs, except Washington and South Africa.
- In all the jurisdictions reviewed with PA regulation, except for New Brunswick, PAs are legislated to sit on the council/board of the governing body
- Some jurisdictions have different classes of registration for PAs. For example, Washington registers three classes: “certified physician assistant”, “physician assistant” and “physician assistant-surgical assistant”. In addition, many jurisdictions offer a “temporary license” to a PA applicant who has met all the qualifications but is waiting to take the next certification exam or is waiting for the results of their certification exam. The temporary permit will have an expiration date by which the applicant must meet the full licensure requirements. In such a case there may be practice restrictions, such as the PA must work at the same site as the supervising physician (e.g. Arizona).
- Disciplinary provisions in the case of professional misconduct by a PA are addressed depending on the regulatory mechanism in each jurisdiction. For example where PAs are governed by a Medical College or Board, they will fall under the disciplinary provisions of the Medical College or Board at large. However, if they are governed by a PA council/committee under the Medical Board or by a separate PA board, then disciplinary provisions will be handled independent of the larger medical governing body. For example, under the Michigan Public Health Code (333.16216) the duties of the PA task force of Michigan include the creation of discipline sub-committees to impose disciplinary sanctions.

Scope of Practice

- A PA’s scope of practice is defined by many variables including: education, experience, state law, facility policy and physician delegation (AAPA, 2010).
- The legislation among the reviewed jurisdictions adheres to a physician-delegated scope of practice, on condition that the delegated duties are within the education/training of the PA. Also, a physician may not delegate tasks to a PA that the physician him/herself is not permitted to perform.
- In addition to a broader physician-delegated scope of practice, some of the jurisdictions reviewed (e.g. Minnesota) have a checklist of duties that a PA may perform under delegation such as: ordering patients histories, performing physical examinations, ordering and performing diagnostic and therapeutic procedures, assisting at surgery and more. These “checklists” are non-exhaustive.

- As explained in the North Dakota Administrative Code governing PAs, it is the obligation of each team of physicians and PAs to identify the PA scope of practice and ensure that it is appropriate to the level of competence of the PA. In some of the jurisdictions reviewed (e.g. Manitoba), a “practice description” is required to be approved by the governing body before a PA may practice. It will set out the medical services that the PA may perform. Any task not found in the “practice description” shall not be performed by the PA. Other jurisdictions require similar mechanisms to that of Manitoba. For example, California requires there to be a “delegation of services agreement” between a supervising physician and PA
- As part of the delegated scope of practice, all of the reviewed jurisdictions in this review permit physicians to delegate prescriptive privileges to PAs, which includes the prescription of controlled/scheduled medications. The jurisdictions reviewed vary in the amount of prescribing authority delegated to PAs. Some jurisdictions permit PAs to prescribe controlled drugs from Schedule 2 to 5 (based on the US controlled substances schedules), while others only permit Schedule 3 to 5 drugs, all upon delegation from the supervising physicians. In the majority of jurisdictions, the PA must use their name/initials along with their supervising physician in connection with the prescription. As well, in the U.S., a PA who is a delegated prescriber of controlled substances is required to register with the federal drug enforcement administration. Prescribing standards/protocols are to be included in the “practice/delegation agreement” between the PA and physician.

Supervision

- A PA must practise medicine under the supervision of a licensed physician.
- Supervision may be “direct” or “indirect”, but is most often “indirect” (Hooker, Cawley, & Asprey, 2010). This means that the physician is not required to always be present while the PA is practicing, but rather is required to be available for contact.
- In some jurisdictions (e.g. Arizona), if the PA practices in a location where the supervising physician is not “routinely present”, the PA must meet their supervisor a minimum of once a week (in person or by telecommunication) for direction and oversight. The board may also require certain tasks to only be performed under physician supervision.
- Some jurisdictions (e.g. Manitoba) require a “contract of supervision” stating the physician’s intent to supervise the medical services performed by the PA. Some jurisdictions require such contracts/agreements to be approved by the governing authority. In addition, according to other jurisdictions (e.g. Arizona) the agreement must be signed by the supervising physician and PA, updated annually, kept on file at the practice site and made available to the board on request.
- Tasks of the supervising physician include (but are not limited to); verification of the PA’s credentials, evaluation of the PA’s performance, monitoring the PA’s practice, identifying PA scope of practice and notifying the governing authority if it is exceeded, assure that the delegation of medical tasks fits the PA’s level of competence, etc.

- In some jurisdictions (e.g. California) chart co-signature/counter signature (the supervising physician must sign all or a percentage of the charts of those patients treated by the PA) may be required as a means of supervision, while in others (Michigan) it is not.
- In some of the jurisdictions reviewed there is a limit to the number of PAs that a physician may supervise. For example, in Manitoba the limit per physician is three PAs, and in North Dakota there is no limit. On the other hand, in Texas, PAs are permitted to have more than 1 physician supervisor.
- In the case of emergency situations, some jurisdictions (e.g. Michigan) do not require a PA to practice under supervision. However, they still must not exceed their scope of practice.

Controlled/Reserved/Restricted Acts

- In Manitoba, PAs are permitted to perform reserved acts by way of the “Delegation of a Reserved Act” provisions under the Regulated Health Professions Act, 2009. However, they may only perform the reserved act in accordance with the regulations respecting the delegation of that reserved act made by the council of the delegating member's college. Similarly, Ontario and Alberta permit an unregulated PA to perform controlled/restricted acts by delegation or supervision respectively.
- Among the other jurisdictions reviewed, some employ a list of acts which the PA is restricted from performing, including: the determination of the refractive states of the eye, adaptation of fitting of lenses or frames, prescribing the use of or using any optical device, prescribing, fitting or adaptation of contact lenses, dentistry or dental hygiene and others. The issue of signing a death certificate varies by jurisdiction. For example, Washington permits a PA to sign a death certificate, but New York does not.
- Other jurisdictions will more simply state that, “the supervising physician or agent shall not delegate to the PA any health care task that the physician does not have training or experience in and does not perform (Arizona Statutes Title 32-2533).”

Entry to Practice Requirements

- The registration requirements for PA practice in the Canadian jurisdictions reviewed are consistent. Manitoba, New Brunswick and Alberta (for voluntary registration) all require an applicant to be a graduate of an approved PA training program and to be certified by the Physician Assistants Certification Council of Canada (PACCC) of the Canadian Association of Physician Assistants (CAPA) or the National Commission for the Certification of Physician Assistants (NCCPA);
- All of the American jurisdictions reviewed follow the same basic registration requirements as the Canadian jurisdictions reviewed, except when it comes to maintaining one's PA certification.

- Among the international jurisdictions the entry to practice requirements are similar as well. In order for U.K. applicant to be registered on the Physician Assistant Managed Voluntary Register (PAMVR), they must have graduated from a recognized UK PA program and have passed the UK national PA exam. The UK also has registry requirements for EU and International applicants. To register as a Clinical Associate in South Africa, one must have received qualification from an approved PA education authority. The Board may require an examination as well.
- There are slight variations among the jurisdictions reviewed in terms of additional registration requirements such as: good moral character, physical and mental capabilities, fees etc. As well, in the U.S, certain jurisdictions have provisions in place for a PA who is licensed in one state and wants to now practice in another.
- There are some common exemptions to the entry to practice requirements among the American jurisdictions reviewed such as: a student enrolled in an approved PA education program, a PA who is an employee of the U.S. government and works on land or facilities of the U.S. government or a PA who is a member of the U.S. reserve components.

Practice Settings

- Some of the jurisdictions reviewed list the settings in which a PA may practice in the legislation. These may include: solo and group practices, hospitals, military facilities, nursing homes, home care services, federal/state correctional institutions are more.
- Other jurisdictions will more simply state that a PA may only provide medical services in a setting authorized by the supervising physician.
- Manitoba requires that the practice locations of a PA be submitted and approved by the CPSM.

Description of Findings:

Current Regulatory Status of the Profession

Canada

Table 1: PA Regulatory Bodies in Canada

Jurisdiction	Regulated	Body
Alberta	No	College of Physicians and Surgeons of Alberta
Manitoba	Yes	College of Physicians and Surgeons of Manitoba
New Brunswick	Yes	College of Physicians and Surgeons of New Brunswick
Ontario	No	Not Regulated

In Canada, the PA profession is in the beginning stages of regulation. Currently, as depicted in Table 1 above, only two provinces regulate PAs, Manitoba and New Brunswick and only two provinces have introduced the PA profession to their province, Alberta and Ontario. Alberta is further ahead of Ontario, in that the CPSA has set up a voluntary registry for PAs (CPSA, n.d.). While in Ontario, the province is still in the midst of demonstration projects without any form of regulation (HFO, 2009). In British Columbia, the British Columbia Medical Association (BCMA) has demonstrated support for the PA profession through a policy statement (BCMA, 2009). In both Manitoba and New Brunswick PAs are regulated under their respective province's College of Physicians and Surgeons. In Manitoba, PA's are included on the council of CPSM; however in New Brunswick they are not included on the College council due to the small number of PAs currently registered (personal communication, Aug. 10, 2011).

U.S.

Table 2: PA Regulatory Bodies in the U.S.

Jurisdiction	Regulated	Body
Arizona	Yes	Regulatory Board of Physician Assistants
California	Yes	Physician Assistants Committee (Medical Board of California)
Michigan	Yes	Physician Assistants Task Force
Minnesota	Yes	Physician Assistant Advisory Council (Minnesota Board of Medical Practice)
New York	Yes	New York State Board for Medicine (Board of Regents)
North Dakota	Yes	North Dakota Board of Medical Examiners
Texas	Yes	Physician Assistant Board (Texas State Board of Medical Examiners)
Washington	Yes	Medical Quality Assurance Commission

In the U.S., PAs are regulated in all 50 states (AAPA, 2011). Among the states examined for this review (See Table 2), three models of PA regulation emerged which is representative of the models of PA regulation across all 50 U.S. states (Hooker et al., 2010). The first model is regulation under a Medical Board (Ibid.). In this model the state Medical Board administers the provisions of the relevant PA legislation/rules. In the jurisdictions reviewed with this regulatory scheme, each Medical Board's council included a varying number of PAs. The second model of regulation present in the states reviewed is regulation by a PA Advisory Council/Committee under a Medical Board (Hooker et al., 2010). In such a model, the PA Advisory is responsible for licensing, regulatory and disciplinary functions (Ibid). However, although the PA body has power to make rules regarding licensing etc. the Medical Board must approve (or reject) each rule adopted by the PA Advisory Council/Committee. For example, the Texas Occupations Code, Title 3, (Sec 204.102 (b), also cited as the Physician Assistant Licensing Act, states,

(b)The medical board, by a majority vote, shall approve or reject each rule adopted by the physician assistant board. If approved, the rule may take effect. If the rule is rejected, the medical board shall return the rule to the physician assistant board for revision.

The board of such advisory committees/councils always includes along with PAs, medical practitioners and members of the public (depending on the regulatory framework may the council include doctors of osteopathic medicine or podiatry). The final model is regulation by a separate PA Board. This model is present in both Arizona and Michigan. In this model the PA Board is responsible for administering the PA legislation/rules and is granted all of the powers of a regulatory board and without a need for approval (Hooker et al., 2010). For example, the Michigan Public Health Code (Act 368 of 1978) Section 333.17021 (c) states (referring to the Michigan PA Task Force)

(3) The board of medicine shall not have the powers and duties vested in the task force by sections 17060 to 17084.

The composition of the council of a separate PA Board is similar to that of previous model, with representatives from the medical professions, PAs and public members.

The three models of regulation may be placed along a continuum (Figure 1) to represent the involvement/autonomy that PAs have in their own regulation:

Figure 1: Models of PA Regulation in the U.S.

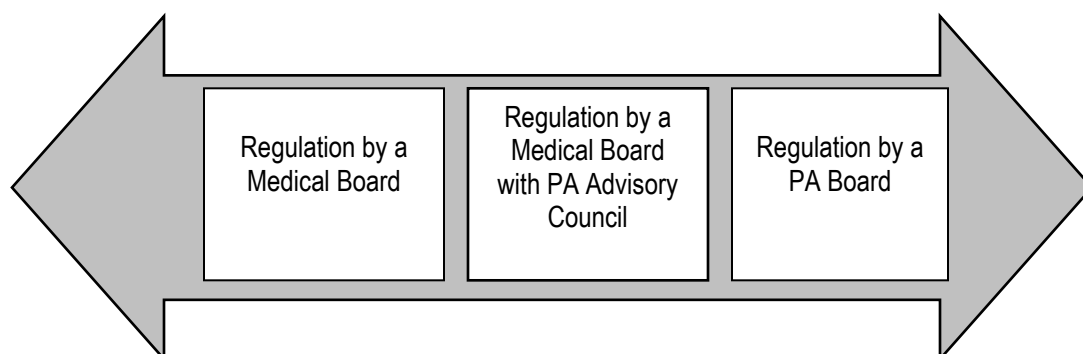


Table 3: PA Regulatory Bodies in the International Jurisdictions Reviewed.

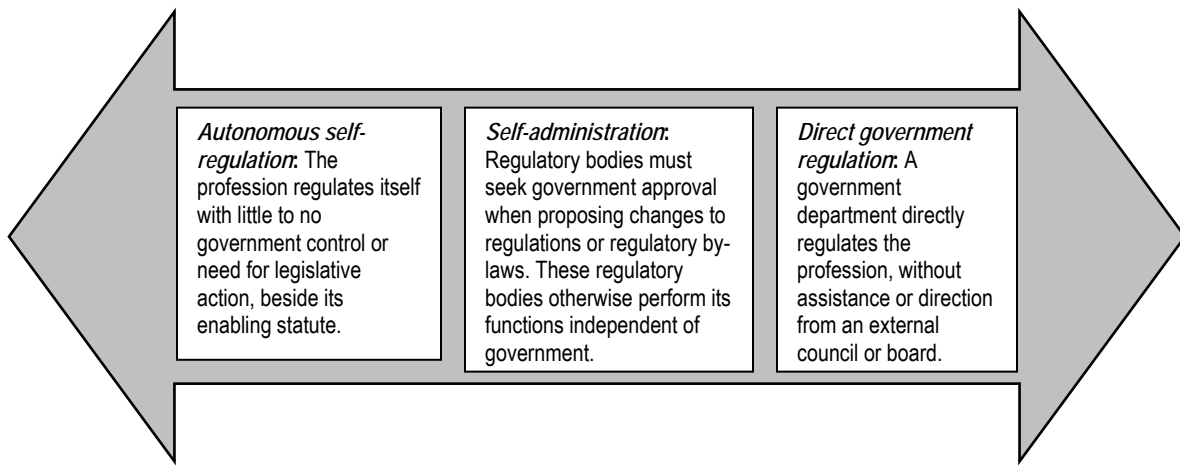
Jurisdiction	Regulated	Body
Australia	No	The Australian Society of Physician Assistants
South Africa	Yes	Medical and Dental Board (Health Professions Council of South Africa)
United Kingdom	No	United Kingdom Association of Physician Assistants

Regulation of the PA profession is still in the beginning stages among the international jurisdictions reviewed. The only reviewed jurisdiction (See Table 3 above) where PAs are statutorily regulated is South Africa, where they are referred to as Clinical Associates and only began registration with the Health Professions Council of South Africa (HPCSA) in 2008 (HPCSA, 2009). Clinical Associates are regulated under the Medical and Dental Board of the HPCSA. In the U.K., PAs are not yet statutorily regulated (UKAPA, 2011). However, the Physician Assistant Managed Voluntary Registry (PAMVR) has been established for PAs in the UK (Ibid). This registry is a requirement prior to statutory regulation of the profession in the U.K. with the primary purpose of public protection and safety, setting standards for education and development and to protect the PA title (PAMVR, 2011). The UKAPA is the professional body for PAs and the PAMVR Commission, a subgroup of the UKAPA, is responsible for the PAMVR which is currently held at and administered by St George's University of London, a PA educational program (Ibid). It will ensure that no one is placed on the register or allowed to remain on the register without evidence of fitness to practice (Ibid). The commission will have a mechanism for periodic checks to ensure that standards continue to be met (Ibid). The managed voluntary register does not have force of law, so PAs may continue to practice if they are not registered (Ibid). Currently, the UK Health Professions Council is no longer accepting applications for aspirant groups for statutory regulation as a result of the current Health and Social Care Bill going through parliament to look at other ways of regulating profession healthcare groups (UKAPA, 2011). This may further prolong the PA profession from receiving their regulatory status. In Australia, although not regulated, the PA profession has been introduced through a pilot project in 2009 (Hooker et al., 2010).

Orders of Regulation:

Health professional regulation can be viewed as a regulatory continuum of complete autonomous self regulation at one end, self administration in the middle, and direct government control at the other end (see Figure 2).

Figure 2: Orders of Regulation (CBOC, 2007)



The jurisdictions with PA regulation studied for this review may be placed along this continuum of orders of regulation. The majority of jurisdictions fall under the *self-administration* category, due to their reliance on government approval for changes to regulations or regulatory by-laws. However, regulatory bodies in this category are trusted to independently perform statutory functions (e.g. licensure/registration, investigations and discipline etc.). Of the reviewed jurisdictions, only New Brunswick and the UK fall into the *autonomous self-regulation* category. The College of Physicians and Surgeons of New Brunswick, which regulates PAs is relatively autonomous with little to no government control or need for legislature approval. None of the reviewed jurisdictions were found to resemble the *direct government regulation* model.

A constant theme in jurisdictions reviewed PA is that of interprofessional regulation. In the majority (10) of the jurisdictions reviewed, PAs are regulated under the same regulatory structure as physicians and even in the case of South Africa, dental surgeons as well. Only Arizona and Michigan where a separate PA Board or Task Force exists are PA's statutorily regulated separate from physicians. This is consistent with the requirement of PAs to practise under physician supervision, to be explained in detail further on.

Title Protection:

Statutory language protecting the title of “physician assistant” or a variant thereof (“certified physician assistant, P.A., PA-C, licensed physician assistant and more) was found in the majority of regulated jurisdictions. The only reviewed PA regulated jurisdiction in North America not to have title protection is Washington. In addition to protecting the title of “physician assistant”, Manitoba also protects the title of “clinical assistant”. Prior to the 2009 amendment to the *Clinical Assistants Regulation 183/99* (referred to currently as the *Clinical Assistants and Physician Assistants Regulation*) under the *Medical Act*, PAs were referred to as Clinical Assistants. However, after the amendments, all certified Clinical Assistants were deemed to be registered as PAs on the PA register, while non-certified Clinical Assistants continue to be registered on the Clinical Assistant register and assume the Clinical Assistant title. South Africa, which refers to PAs as Clinical Associates, does not have title protection. In addition to protecting the title of “physician assistant”, New York also registers and protects the title of “specialist assistant”. The specialist assistant profession falls under the same legislation as PAs and therefore have the same scope of practice, supervision requirements etc. There are certain categories where a specialist assistant may be

registered such as; orthopaedics, urology, radiology and acupuncture⁵. The other jurisdictions reviewed do not differentiate between a PA and a PA who is assigned to a designated medical specialty as NY does.

Scope of Practice

A PA may only practice medicine under physician supervision; hence their scope of practice is largely based on a physician delegation model (AAPA, 2011). Among all the jurisdictions reviewed, the legislation adheres to this physician-delegated scope of practice, on condition that the delegated duties are within the education/training and experience of the PA. The medical services assigned to the PA must also be within the scope of the supervising physician delegate. For example, in Title 16 of the California Code of Regulations referencing PAs (1399.540) it states:

“A PA may only provide those medical services which he or she is competent to perform and which are consistent with the PA’s education, training and experience and which are delegated in writing by a supervising physician who is responsible for the patients cared for by the PA.”

Further, it is the obligation of each team of physicians and PAs to identify the PA’s scope of practice. In most of the jurisdictions reviewed this is accomplished through the creation of a document outlining the duties of the PA. For example in Manitoba, a “practice description” must be established to outline the PA’s duties. The *Clinical Assistant and Physician Assistant Regulation* states:

*14 (1) A clinical assistant or physician assistant shall not perform medical services unless they are included in the **practice description** approved by the council*
*14 (2) If the supervising physician wishes to add to the duties or responsibilities of a clinical assistant or physician assistant set out in the **practice description**, he or she must first obtain the council’s written approval.*

Also, as the Manitoba regulation explicates, the agreement/plan must be approved by the council, or a varying form of governing body. The “practice description” is a requirement in most of the other jurisdictions reviewed, albeit in a varying form. For example, in California it is referred to as a “delegation of services agreement”.

Some jurisdictions (e.g. Minnesota and Texas) also require a PA to submit a “notice of intent to practice”. According to the Minnesota Statutes (2010), 147.A.20, Subdivision 2, “a licensed physician assistant shall submit a notification of intent to practice to the board prior to beginning practice. The notification shall include the name, business address, and telephone number of the supervising physician and the physician assistant. For purposes of clarity, this “notice” is separate

⁵ New York Codes Rules and Regulations (NYCRR): Title 10- Section 94.2 - Supervision and scope of duties- A specialist's assistant registered in this category (acupuncture) shall be employed or supervised only by a physician authorized to administer acupuncture in accordance with the rules and regulations of the New York State Department of Education and is an individual: (i) who satisfactorily completed a program of training in acupuncture approved by the New York State Department of Education; or (ii) who possesses equivalent education and training acceptable to the New York State Department of Education; and (iii) in addition to satisfying the requirements of subparagraphs (i) and (ii) of this paragraph has completed at least five years of experience in the use of acupuncture acceptable to the New York State Department of Education.

from the PA-physician agreements discussed above and later on under the topic of supervision. The notice of intent should include; the name, business address, and telephone number of the supervising physician and the physician assistant.

In addition to the broader physician-delegated scope of practice depicted above, some of the jurisdictions reviewed (e.g. Arizona, Minnesota and more) have a checklist of duties that a PA may perform under delegation. For example, according to section 32-2531 of the Arizona Statutes (Title 32 – Professions and Occupations Chapter 25 – Physician Assistants) duties may include:

- 1. Obtaining patient histories.*
- 2. Performing physical examinations.*
- 3. Ordering and performing diagnostic and therapeutic procedures.*
- 4. Formulating a diagnostic impression.*
- 5. Developing and implementing a treatment plan.*
- 6. Monitoring the effectiveness of therapeutic interventions.*
- 7. Assisting in surgery.*
- 8. Offering counselling and education to meet patient needs.*
- 9. Making appropriate referrals.*
- 10. Prescribing schedule IV or V controlled substances as defined in the federal controlled substances act of 1970 (P.L. 91-513; 84 Stat. 1242; 21 United States Code section 802) and prescription-only medications.*
- 11. Prescribing schedule II and III controlled substances as defined in the federal controlled substances act of 1970.*
- 12. Performing minor surgery as defined in section 32-2501.*
- 13. Performing other nonsurgical health care tasks that are normally taught in courses of training approved by the board, that are consistent with the training and experience of the physician assistant and that have been properly delegated by the supervising physician.*

These checklists of duties that are present in some jurisdictions are not intended to be exhaustive or limiting but rather to give an idea of types of duties that PA performs under delegation from their supervising physician.

Prescribing:

As part of the delegated scope of practice, all of the reviewed U.S. jurisdictions permit physicians to delegate prescriptive privileges to PAs (Hooker et al., 2010). The U.S. states reviewed and regulated Canadian jurisdictions typically place certain stipulations on PA prescribing (AAPA, 2010). These limitations often include, which substances a PA may prescribe (Ibid). For example, in Texas, PAs are permitted to write prescriptions for controlled substances, but not those substances classified as Schedule II.⁶ California allows a PA to prescribe Schedule II through V controlled substances, but only upon a patient-specific approval from the physician (unless the PA has completed a board-approved training course on controlled substances) (Business and

⁶ In the US as defined in the Controlled Substances Act, "Controlled medications are regulated by both federal and state laws because of their potential for abuse and dependence. These medications are grouped into five "schedules" based on their abuse potential (AAPA, 2010)." (The schedules rank their abuse potential reversely from V to I, with Schedule V having the least abuse potential and Schedule I the most. In fact, Schedule I have no accepted medical use in the United States (Ibid). A similar but varied ranking system is present in Canada as well.

Professions Code). Similarly, Minnesota (Statutes 147A.18) requires the delegation agreement between a PA and physician to include a list of the categories of drugs for which the supervising physician delegates prescriptive and dispensing authority. This will constitute what is known as a formulary for the PA's prescribing authority. Of course, the delegation order must be within the scope of the physician assistant's training and all of the US states reviewed require a PA to be registered with the federal drug enforcement administration (AAPA, 2010). Where in Manitoba, the council may require a PA applicant to document adequate training and experience in pharmacology in their "practice description, and may even require a pharmacological exam to be taken (Clinical Assistant and Physician Assistant Regulation 183/99). Another stipulation that some of the reviewed jurisdictions employ is a "time-limit" for certain controlled substance prescriptions. For example, the Arizona PA Board limits the prescription of a Schedule II or III substance to a 14-day supply.

In addition to some of the jurisdictions requiring prescribing authority to be in the "delegation agreement", some jurisdictions (i.e. California) require drug treatment "protocols". Such a protocol shall specify all criteria for the use of a particular drug or device, and any contraindications for the selection. North Dakota also has provisions in place for PA dispensing of medications for which they are authorized to prescribe (North Dakota Administrative Code). The conditions for dispensing are as follows: the dispensation must be in compliance with federal and state regulations, pharmacy services are not reasonably available/emergency care and dispensation is within the guidelines of the supervising physician. Finally, a majority of the jurisdictions reviewed require the PA to sign the name of their supervising physician along with their name and title on the prescription. Currently, in the UK, PA's are not permitted to prescribe medications. In South Africa, prescribing appropriate medication within the PA scope of practice is listed as an "exit outcome" for a clinical associate upon completion of a clinical associate education program (Standards Generating Document, 2007).⁷

Supervision

As mentioned above, a PA may only practice medicine under physician supervision (AAPA, 2010). Supervision may be "direct" or "indirect" (Hooker et al., 2010). Among all the jurisdictions reviewed, the type of supervision most commonly required is "indirect" (Ibid). In other words, a physician is not required to consistently be on premises with the PA visually observing (direct supervision), but rather must always be reachable (Ibid). The common language among the jurisdictions in reference to supervision is demonstrated as follows in Article 131-B of the New York Education Law,

"Supervision shall be continuous but shall not be construed as necessarily requiring the physical presence of the supervising physician at the time and place where such services are performed [6542(3)]."

The North Dakota Administrative Code Chapter 50-03-01 explains "continuous" to require the physician to always be available for contact, be it personally, by telephone or by other electronic

⁷ The HPCSA is in the process of drafting the Scope for the Profession of Clinical Associates. In the mean time, the Standards Generating Document is regarded the minimum standards for training of clinical associates in South Africa (personal communication, Sept. 5, 2011)

means. Some jurisdictions require the supervising physician to be present at the PA practice site for a minimum amount of time per month. For example, in Washington, if a PA is practicing in a remote site (i.e. in a setting which is not the physician's primary practice or where the physician spends less than twenty-five percent of the PA's practice time), then the physician must commit to spending at least ten percent of the PA's practice time at the remote site (Washington Administrative Code). In such a case the commission also requires there be a demonstrated need for such a practice arrangement to occur (Ibid). Similarly, Arizona requires a supervising physician to meet either in person or by telecommunication at least once a week if the PA is practicing in a setting where the supervising physician is not routinely present (Arizona statutes). PA supervision requirements may also vary based on the setting at which the PA is practicing (personal communication, June 14, 2011). For example, if a PA is working in a neurosurgery unit, they may have much closer supervision, as opposed to when they are working in family medicine (Ibid). Another determining factor of the amount of supervision required is the experience of the PA. A first time practicing PA may likely require more supervision or more direct supervision at first than an experienced PA would (Ontario Hospital Association, 2011). Other factors that may or may not play a role in determining the amount/type of PA supervision are the characteristics of the patient being attended to and the risk of the task assigned to the PA (Ibid). In general, the amount of PA oversight is a matter of "negotiated autonomy" (personal communication, June 14, 2011).

Many jurisdictions require there to be a "contract of supervision" between the supervising physician and PA. In some cases the contract of supervision may be combined (e.g. Washington, Minnesota) into the "practice agreements" described above and at times they may be separate. Manitoba requires a separate contract of supervision to state the number of hours per month that the physician will provide personal on-site supervision (Clinical Assistant and Physician Assistant Regulation 183/99).⁸ North Dakota requires a PA to secure a "supervision contract" to provide services under the supervision of a doctor of medicine (See Appendix A for an example of North Dakota's Supervision Contract). As well, the Minnesota Board of Medical Practice requires a "physician-physician assistant delegation agreement" which specifies the scope of practice and manner of supervision as required by the board. The agreement must contain:

- (1) a description of the practice setting;
- (2) a listing of categories of delegated duties;
- (3) a description of supervision type; and
- (4) a description of the process and schedule for review of prescribing, dispensing, and administering legend and controlled drugs and medical devices by the physician assistant authorized to prescribe (Minnesota Statutes-Physician Assistant Practice Act). In this case, Minnesota combines a "supervision contract" with a "practice description" into one document. The majority of the jurisdictions reviewed also require that such an agreement be signed by both parties (the PA and supervising physician), updated on an annual basis and kept on file at the practice site to be made available upon request. In a case that the primary supervising physician is not available to supervise the PA, a PA is permitted to have an alternate supervising physician. In the case of PA working at a group practice, it may very well be another physician in that group. Some states (e.g. Washington) require the PA to list his/her alternate physician in the appropriate written agreement/contract.

⁸ Despite the minimum amount of on-site supervision per month, stated in the Manitoba "contract of supervision", it is merely suggested and there is no hard minimum for the amount of on-site personal supervision, it is to be negotiated between the supervising physician and PA and put into the "contract of supervision". It is dependant on many different factors, with the College having the final say (personal communication, Sept. 1, 2011).

Some of the states reviewed also have certain requirements a physician must meet before taking on a supervisory role of a PA. Arizona requires the physician to state their familiarity with the PA laws and rules, file an application with the board and be clean of practice restrictions, probation or suspension (Arizona Statutes). Washington and Texas both require board notification or approval for a physician to be a PA supervisor while California and New York do not. On the same note, Minnesota, North Dakota and Manitoba all require the contract (supervision or practice as described above) to be approved by the board.

When it comes to the number of PAs a physician is allowed to supervise at one time, the majority of the jurisdictions reviewed have limits. For example, in Arizona, a physician may not supervise more than 4 PAs at the same time regardless of their location; on the other hand, there is no limit in North Dakota. In addition, the number of PAs one physician may supervise may also depend on the facility they are practicing in. For example in New York, a physician working in his/her private practice may supervise no more than 2 PAs, in a correctional facility no more than 4 PAs and no more than 6 when the PAs are employed by a hospital (New York Codes Rules and Regulations, Title 10- 94.2).

Another element of the physician's supervising responsibility may be chart co-signature, where the physician co-signs certain charts of patients that were seen by PAs (AAPA, 2010). For example, chart co-signature by the supervising physician may be appropriate when a PA is treating a patient with very complex problems (AAPA, 2010). California is the only jurisdiction reviewed which may require co-signature (also referred to as counter-signature) on medical services performed by the PA as a means of PA supervision.⁹ Arizona requires a similar form of review system by the physician, of certain issued prescriptions for Schedule II and III controlled substances (Arizona Statutes) as do many of the other states reviewed. Further, a majority of jurisdictions require a review/evaluation of the PA's performance by the supervising physician.

Lastly, there are few circumstances where a PA does not require supervision to practice. For example, in Michigan a PA is permitted to practice without supervision in an emergency situation. However they must continue to practice within their scope of practice.

⁹ Aside from chart co-signature, in California, a supervising physician has the option of 3 other mechanisms by which they may supervise a PA in place of chart co-signature. One of those mechanisms is in the form of "Protocols". As detailed in the California Business and Professions Code Section 3502 (c):

"(1) A physician assistant and his or her supervising physician and surgeon shall establish written guidelines for the adequate supervision of the physician assistant. This requirement may be satisfied by the supervising physician and surgeon adopting protocols for some or all of the tasks performed by the physician assistant. The protocols adopted pursuant to this subdivision shall comply with the following requirements:

(A) A protocol governing diagnosis and management shall, at a minimum, include the presence or absence of symptoms, signs, and other data necessary to establish a diagnosis or assessment, any appropriate tests or studies to order, drugs to recommend to the patient, and education to be provided to the patient.

(B) A protocol governing procedures shall set forth the information to be provided to the patient, the nature of the consent to be obtained from the patient, the preparation and technique of the procedure, and the followup care.

(C) Protocols shall be developed by the supervising physician and surgeon or adopted from, or referenced to, texts or other sources.

(D) Protocols shall be signed and dated by the supervising physician and surgeon and the physician assistant."

Few states actually require such protocols (AAPA, 2010).

Controlled/Reserved/Restricted Acts

Of the 15 jurisdictions under review, 3 (Manitoba, Alberta, Ontario) employ a controlled/reserved/restricted acts model that articulates specific controlled/reserved/restricted acts that are authorized to certain regulated health professionals. These approaches identify certain higher risk procedures whose performance is then limited in law to specified professions. In each of these jurisdictions there are no “specific” controlled/reserved or restricted acts that are explicitly given to PAs. Rather, in each case PAs are permitted to practice controlled/reserved/restricted acts under delegation or supervision provisions. For example, in the *The Regulated Health Professions Act*, 2009, of Manitoba, PA’s are permitted to perform reserved acts by way of the “Delegation of a Reserved Act [Section 6(1)]” provisions and in accordance with the regulations respecting the delegation of the reserved acts made by the council of the delegating member’s college (i.e. physicians). Ontario has very similar delegation provisions to those of Manitoba which allow a PA to perform controlled acts.¹⁰ The CPSA has a Standard of Practice for physicians when supervising the performance of a restricted act (CPSA 2010). The Standard of Practice # 4 depicts the conditions for supervising a non-regulated health professional, in our case a PA, and others to perform a restricted act¹¹ as follows:

- (4) A physician may supervise a regulated healthcare professional, an unregulated worker or a student performing a restricted activity only if the physician is satisfied that:*
- (a) it is safe and appropriate for the supervised person to perform the restricted activity on the particular patient,*
 - (b) the equipment and resources available to perform the restricted activity are safe and appropriate, and*
 - (c) the patient provides informed consent to the procedure being performed under supervision unless consent is not possible because of emergency.*

Alberta also requires that the physician who is acting as a supervisor remain readily available for consultation during the performance of the restricted activity (Ibid). The other jurisdictions reviewed do not employ a controlled/reserved acts model. However, there were some jurisdictions which listed certain activities that a PA is not permitted to perform. The California Business and Professions Code, Section 3502 (d), lists the following activities for which a PA is not permitted to perform:

- (d) No medical services may be performed under this chapter in any of the following areas:*
- (1) The determination of the refractive states of the human eye, or the fitting or adaptation of lenses or frames for the aid thereof.*

¹⁰ When the clinical work assigned to a PA involves a controlled act, the process of delegation described in **The College of Physicians and Surgeons of Ontario’s Policy on Delegation of Controlled Acts** must be followed. Physicians may use a direct order to authorize a PA to perform a specific controlled act for a specific patient when the patient is known to the physician. Physicians may also use a medical directive to authorize a PA to perform controlled acts under certain circumstances, and for a specified group of patients, in advance of the anticipated relationship between a patient and a physician. Retrieved from: http://www.oha.com/Services/PhysicianandProfessionalIssues/Documents/Roles%20and%20Responsibilities%20of%20Physicians%20Supervising%20PAs_.pdf. For more information regarding delegation of controlled acts in Ontario see the full policy at: <http://www.cpsa.on.ca/policies/policies/default.aspx?ID=1554>

¹¹ The restricted acts are listed in Schedule 7.1 (2) of the Government Services Act. This specific section of the act may be found at https://pharmacists.ab.ca/document_library/Schedule%207.1%20of%20Government%20Organization%20Act.pdf

- (2) The prescribing or directing the use of, or using, any optical device in connection with ocular exercises, visual training, or orthoptics.*
- (3) The prescribing of contact lenses for, or the fitting or adaptation of contact lenses to, the human eye.*
- (4) The practice of dentistry or dental hygiene or the work of a dental auxiliary as defined in Chapter 4 (commencing with Section 1600).*

Other restrictions include New York's broader prohibition of performing certain tasks belonging to specific allied health professions, such as the practice of radiologic technology and the practice of optometry (New York State Department of Health, 2009). As well, Washington prohibits the practice of chiropractic medicine (Washington Administrative Code). There is a divide among the US jurisdictions concerning the signature of a death certificate. For example, New York and Texas do not allow a PA to sign a death certificate, while Arizona and Washington permit it as well as the signing of any document that might ordinarily be signed by a physician. Another means for restricting the activities performed by a PA, in many of the jurisdictions reviewed, is to simply state that the PA may only provide medical services in those areas where the supervising physician provides patient care.

Entry to Practice Requirements

Among all of the jurisdictions reviewed the entry-to-practice requirements are nearly the same. Firstly, all of the jurisdictions require a PA applicant to have graduated from an accredited or approved PA educational program (AAPA, 2010). In the US, accreditation of educational programs is administered by the Accreditation Review Commission for the Physician Assistant (ARC-PA) (Hooker et al., 2010). In Canada, the Canadian Medical Association Conjoint Accreditation Canada is the accreditation body for PA programs (CMA, 2010).¹² In South Africa and the UK, there is no accreditation body for PA programs (personal communication, August 31, 2011). However, for UK applicants to gain entry onto the PAMVR, they must provide proof of graduation from a "recognized UK PA program" (PAMVR, 2011). As well, to register as a Clinical Associate in South Africa, an applicant must have obtained qualifications from one of the universities listed in regulation R. 1206.

In addition to the completion of a PA education program, there is the requirement of national certification. In the US jurisdictions reviewed, and in fact in all 50 states, a PA must pass the Physician Assistant National Certifying Exam (PANCE) administered by the NCCPA (Hooker et al., 2010). After passing PANCE, physician assistants are issued NCCPA certification and can use the PA-C designation until the certification expiration date (NCCPA website). However, not every state requires a PA to keep up their NCCPA certification as a condition of licensure (AAPA, 2010). There is an equal divide among the American jurisdictions reviewed as to whether NCCPA certification is required at the initial application for licensure. While some states do not require certification upon initial application, they may require it upon reinstatement of licensure as a result of a PA allowing their license to lapse or placing it in an "inactive" status, but not including cases of revocation or

¹² The "qualification requirements" in Manitoba's PA regulation still refers to a PA program accredited by the American Medical Association Committee on Allied Health Education and Accreditation or the Commission on Accreditation for Allied Health Education Programs, which are no longer the primary bodies for accreditation of PA educational programs, but rather fall under the ARC-PA. The Manitoba regulation also makes no reference to the CMA accreditation but rather "other acceptable programs"

suspension due to disciplinary sanctions (e.g. Michigan) (Ibid). In the Canadian jurisdictions reviewed, the PA certifying examination is administered by the PACCC, an independent council of CAPA (CAPA, 2011). Certification is required for licensing in all of the jurisdictions reviewed (Ibid). NCCPA certification is recognized in the Canadian jurisdictions and discussions are ongoing regarding recognition of Canadian PA certification by the U.S. (CMA, 2010) To be registered on the PAMVR, in addition to graduating from a PA program, an applicant must pass the UK National PA Exam (PAMVR, 2011) According to the UKAPA, American trained PAs working in the UK are required to have and maintain their NCCPA certification (UKAPA, 2011). As well, in South Africa the board may require an applicant being considering for PA registration to pass an examination but there is no certification body (Regulation R. 1206).

In 2005, the AAPA, ARC-PA, NCCPA, and the Physician Assistant Education Association (PAEA) came together to endorse the “Competencies for the Physician Assistant Profession” (Hooker et al., 2010). The competencies focus on the following areas: medical knowledge, interpersonal and communication skills, patient care, professionalism, practice-based learning and improvement and systems-based practice (Ibid). In order to seamlessly integrate PAs into Ontario, in 2007, Ontario created a PA competency profile to clearly define both their clinical competence and their scope of practice and to help understand the “how” and “what” that PAs can do (HFO, 2007). Partially building from Ontario’s work, CAPA has also published a national competency framework for PAs with the intent to communicate to the public and to the PA profession a set of standards that all PAs are expected to acquire for entry to practice (CAPA, 2011). The categories of the Canadian competency frameworks vary slightly from the US but remain more or less the same. The UK also created the Competence and Curriculum Framework for PAs to establish professional standards and quality assurance of trainee PAs and to inform PA education programs (UKAPA, 2011).

Practice Settings

As explained above, PAs practice under physician supervision. Therefore, it follows that they may work in any medical setting in which their supervising physician(s) practice, including (but not limited to): private practices (solo and group), general acute care hospitals, acute psychiatric hospitals, special hospitals, nursing facilities, intermediate care facilities, and private homes (California Academy of PAs, 2010). In New Brunswick, although regulation is in place, PAs are still in somewhat of a pilot project and are only employed in hospital emergency rooms (personal communication, August 10, 2011). Under HFO’s PA demonstration project, PAs may be found assisting in hospitals, community health centres, and in settings where PAs are employed by a physician or group of physicians (HFO, 2009).

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South Africa

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Appendix A: Example of “Supervision Contract” (North Dakota)

NOTICE
The fee for amending this
contract is \$25.00

PHYSICIAN ASSISTANT SUPERVISION CONTRACT

THIS AGREEMENT is made this _____ day of _____, 20_____, by and between one or more physicians who practice medicine in the State of North Dakota, including _____, (NAME)
M.D./D.O., who will act as Primary Supervising Physician and _____, PA-C, of (NAME)
_____, _____, _____, _____, (ADDRESS) (CITY) (STATE) (ZIP)

The physician assistant will practice in the following locations:

1. _____
(NAME OF FACILITY WHERE PHYSICIAN ASSISTANT WILL PRACTICE)
_____, _____, _____, _____, (ADDRESS) (CITY) (STATE) (ZIP)
_____, _____, _____, _____, (TELEPHONE) (ANTICIPATED STARTING DATE)

Physician Assistant will be employed (paid) by: _____

2. _____
(NAME OF FACILITY WHERE PHYSICIAN ASSISTANT WILL PRACTICE)
_____, _____, _____, _____, (ADDRESS) (CITY) (STATE) (ZIP)
_____, _____, _____, _____, (TELEPHONE) (ANTICIPATED STARTING DATE)

Physician Assistant will be employed (paid) by: _____

3. _____
(NAME OF FACILITY WHERE PHYSICIAN ASSISTANT WILL PRACTICE)
_____, _____, _____, _____, (ADDRESS) (CITY) (STATE) (ZIP)
_____, _____, _____, _____, (TELEPHONE) (ANTICIPATED STARTING DATE)

Physician Assistant will be employed (paid) by: _____

WHEREAS, the physician assistant is duly qualified under the applicable rules and regulations of the North Dakota State Board of Medical Examiners, it is hereby agreed that:

1. The physicians who sign this agreement will supervise the physician assistant in accordance with the rules and regulations of the North Dakota State Board of Medical Examiners. The physician assistant agrees to faithfully and to the best of his/her knowledge and skill, to assist the physician(s) in the practice of medicine. By this contract it is contemplated that the physician(s) will assign certain duties to be performed by the physician assistant. The physician assistant will perform only those duties and responsibilities that are delegated by the physician(s). The physician(s) will not delegate to the physician assistant any duty or responsibility for which the physician assistant has not been adequately trained. The physician assistant is the agent of the physician(s) in the performance of all practice-related activities. The physician assistant will provide patient care only in those areas of medical practice where the physician(s) provides patient care.
2. During the term of this agreement, the physician assistant shall comply with all proper directions and orders of the physician(s) and shall comply with all rules and regulations of the North Dakota State Board of Medical Examiners governing physician assistants.

3. The supervising physician(s) responsibility is to oversee the activities of, and accept the responsibility for, the medical services rendered by a physician assistant. Supervision shall be continuous but shall not be construed as necessarily requiring the physical presence of the supervising physician at the time and place that the services are rendered. It is the responsibility of the supervising physician to direct and review the work, records, and practice of the physician assistant on a continuous basis to ensure that appropriate and safe treatment is rendered. The supervising physician must be available continuously for contact personally or by telephone or other electronic means. It is the obligation of each team of physicians and physician assistants to ensure that the physician assistant's scope of practice is identified; that delegation of medical tasks is appropriate to the physician assistant's level of competence; that the relationship of, and access to, the supervising physician is defined; and that a process for evaluation of the physicians assistant's performance is established.
4. The physician(s) agrees to designate a substitute supervising physician in the manner designated by the Board of Medical Examiners to act under this agreement during any absence or temporary disability of that physician.

This contract may be terminated by either party by giving thirty(30) days notice of that fact in writing to the other. (Sec. 50-03-01-03, North Dakota Administrative Code, requires that the State Board of Medical Examiners be notified of such termination within 72 hours of the time the termination becomes effective.)

It is expressly understood that this contract is subject to review and approval by the North Dakota State Board of Medical Examiners. Any subsequent amendment to this contract must also be specifically approved by the Board of Medical Examiners.

Signature of Primary Supervising Physician

Signature of Physician Assistant

Print or Type Name

Date

Print or Type Name

Date

1. _____
Signature of Supervising Physician

5. _____
Signature of Supervising Physician

Print or Type Name

Date

Print or Type Name

Date

2. _____
Signature of Supervising Physician

6. _____
Signature of Supervising Physician

Print or Type Name

Date

Print or Type Name

Date

3. _____
Signature of Supervising Physician

7. _____
Signature of Supervising Physician

Print or Type Name

Date

Print or Type Name

Date

4. _____
Signature of Supervising Physician

8. _____
Signature of Supervising Physician

Print or Type Name

Date

Print or Type Name

Date

Reason for submitting this form:

- ☐ Initial Application
- ☐ New Primary Supervising Physician
- ☐ Addition of (2nd) Primary Supervising Physician
- ☐ Addition of Supervising Physician
- ☐ Deletion of Supervising Physician _____ (Name)
- ☐ Addition of Practice Location _____
- ☐ Deletion of Practice Location _____

Appendix B: Information by Jurisdiction

Jurisdiction

Alberta

Current Status of the Profession (CPSA, 2011)

Physician assistants can voluntarily become a non-regulated member of the College of Physicians and Surgeons of Alberta (CPSA) under the category of physician assistants (PAs) through bylaw 24(6), (December 3, 2010). This by-law allows PAs to operate under the responsibility of a regulated member.

CPSA responsibilities regarding PAs include:

- Registering PAs that meet the registration criteria;
- Maintaining a list of registered PAs. The list includes a) Name, b) Credentials and c) Public Contact Information; and,
- Having standards of practice in place for physicians who wish to use physician assistants in their medical practice.

CPSA responsibilities regarding PAs do NOT include:

- Verifying the source of the information provided by PAs interested in registering;
- Regulating the PA profession;
- Having authority to mandate a PA to register with the College; and,
- Having any authority to discipline or regulate the conduct, training or performance of PAs.

Total PAs (voluntary registry): 10

Relevant Legislation, Regulations and Bylaws

Health Professions Act, R.S.A. 2000, c. H-7.

Physicians, Surgeons and Osteopaths, Alberta Regulation 350/2009

CPSA Non-Regulated Members, Alberta bylaw 24(6)

College of Physician and Surgeons of Alberta. (2010) Health professions act: Standards of practice: Consolidation.

Scope of Practice and Authorized Acts

CPSA website states that when hiring a physician assistant, the physician, as prospective employer, should consider having the candidate provide information such as their scope of practice.

The CPSA has a Standard of Practice for physicians when supervising the performance of a restricted act (CPSA 2010).

(4) A physician may supervise a regulated healthcare professional, an unregulated worker or a student performing a restricted activity only if the physician is satisfied that:

(a) it is safe and appropriate for the supervised person to perform the restricted activity on the particular patient,

(b) the equipment and resources available to perform the restricted activity are safe and appropriate, and

(c) the patient provides informed consent to the procedure being performed under supervision unless consent is not possible because of emergency.

(5) A physician who supervises a person performing a restricted activity must remain readily available for consultation during the performance of the restricted activity.

Restricted Activities

N/A

Entry to Practice Requirements (CPSA, 2011)

N/A since PAs are not regulated, however for voluntary registration, PAs must have:

- A) A graduate of a PA training program meeting one of the
 - i. provided through the Canadian Forces Medical Services School;
 - ii. accredited by the Canadian Medical Association Conjoint Accreditation Canada; or,
 - iii. Accredited by the Accreditation Review Commission on Education for Assistant (ARC PA) in the United States of America; **and,**
- B) A certified PA with one of the following credentials:
 - i. Canadian Certified Physician Assistant (CCPA), granted by the Canadian Association of Physician Assistants; or,
 - ii. Physician Assistant – Certified (PA-C), granted by the National Commission Certification of Physician Assistants in the United States of America.

Practice Settings

Section 24(6) of the by-law states that a PA shall only work under the supervision of a regulated member on the General Register or the Provisional Register Conditional Practice, and that regulated member will take responsibility for the clinical performance of the PA.

Jurisdiction

Manitoba

Current Status of the Profession

On July 14, 1999, the government of Manitoba passed the Clinical Assistant (CA) registration amendment under the Medical Act. This allowed for the licensing of registered clinical assistants. This was later amended in 2009 to permit practice under the title of Physician Assistant (PA) and all certified CAs under the amendment to the Medical Act were deemed to be registered on the PA register (non-certified CAs continue to be registered on the CA register).

Regulation 183/99, also known as "Clinical Assistants and Physician Assistants Regulation", was registered under the Manitoba Medical Act by the Council of the College of Physicians and Surgeons of Manitoba (CPSM) on December 23, 1999. This regulation allows for the registration of PAs on the PA Register (CAPA, 2011)

Complaints: The Complaints Committee is appointed by Council in accordance with Section 41 of The Medical Act.

Code of Ethics: Schedule G of by-law #1, December 1, 2008, provides the Code of Conduct and guide to the professional and ethical conduct of Members of the College.

Title: Regulation 183/99: Use of title: physician assistant

5(1) A person registered as a physician assistant is entitled to use the designation "Physician Assistant" and the initials "PA".

Use of title: clinical assistant

5(2) A person registered as a clinical assistant is entitled to use the designation "Clinical Assistant" and the initials "Cl. A".

Total PAs: 26

Relevant Legislation, Regulations and Bylaws

Regulated Health Professions Act, 2009 (RHPA)

The Medical Act, 1999

Clinical Assistants and Physician Assistants Regulation (CAPAR), Regulation 183/99

Scope of Practice and Authorized Acts

Limit: duties delegated to clinical assistant or physician assistant

7(1) A supervising physician shall not delegate to a clinical assistant or a physician assistant a duty or responsibility for which the assistant is not adequately trained.

Practice only in accordance with practice description

14(1) A clinical assistant or physician assistant shall not perform medical services unless they are included in the practice description approved by the council.

"practice description" means a written description submitted by the supervising physician to the council setting out the duties and functions of the clinical assistant or physician assistant in relation to the physician's practice;

Changes approved by council

14(2) If the supervising physician wishes to add to the duties or responsibilities of a clinical assistant or physician assistant set out in the practice description, he or she must first obtain the council's written approval.

Supervision of physician assistants

As per Regulation 183/99, the supervising physician of a physician assistant shall provide the following type of supervision:

1. The physician shall be available to supervise, by telephone or otherwise, for at least the number of hours per week that the contract of supervision specifies. The physician's physical presence is not required for this weekly supervision of the physician assistant, who may be providing medical services in a location separate from the supervising physician's regular practice location.
2. The physician shall provide personal on-site supervision for at least the number of hours per month that the contract of supervision specifies.

Supervision of clinical assistants

6(3) The supervising physician of a clinical assistant shall provide daily on-site, personal supervision.

Limit on number of clinical assistants and physician assistants under supervision

8 A physician may not be the supervising physician for more than three clinical assistants and physician assistants at a time, except with the council's prior approval.

Prescriptions

16(1) A clinical assistant or a physician assistant may issue prescriptions only for medications which the supervising physician has determined the assistant is qualified to prescribe in accordance with the practice description approved by the council.

16(2) A prescription issued by a clinical assistant or a physician assistant must include the name of the supervising physician and the name and designation — either "PA" or "Cl. A" — of the assistant.

Restricted Activities

Limit: physician's area of competence

7(2) A supervising physician shall not delegate to a clinical assistant or a physician assistant a duty or responsibility the supervising physician is not competent to perform himself or herself.

Limit: physician's area of practice

7(3) A supervising physician shall not permit a clinical assistant or a physician assistant to provide medical services in an area of practice in which the supervising physician does not provides services.

Entry to Practice Requirements

Regulation 183/99

Required information

3(2) An application for registration as a clinical assistant or physician assistant must include the following:

1. A contract of supervision entered into between the clinical assistant or physician assistant and a supervising physician who is acceptable to the council. The contract must be signed by both parties and be in a form acceptable to the registrar.
2. A practice description that sets out detailed information about the medical services the clinical assistant or physician assistant will provide, the type of supervision to be provided by the supervising physician and the practice location where the services will be provided. The description must be signed by the supervising

physician and be in a form acceptable to the registrar.

Qualifications for physician assistant

4(2) An applicant for registration as a physician assistant must have completed clinical training acceptable to the council and must, in addition, have one of the following training program qualifications:

- (a) be a graduate of a physician assistant training program approved by the American Medical Association Committee on Allied Health Education and Accreditation or the Commission on Accreditation for Allied Health Education Programs, and have passed the examination set by the National Commission on Certification of Physician Assistants; or
- (b) be a graduate of another physician assistant training program acceptable to the council.

Practice Settings

Practice location(s), must be submitted and approved by the CPSM Council. A supervising physician shall not permit a clinical assistant or a physician assistant to provide medical services in an area of practice in which the supervising physician does not provides services.

Jurisdiction

New Brunswick

Current Status of the Profession

In 2009, the College of Physicians and Surgeons of New Brunswick (CPSNB) amended the New Brunswick Medical Act in order to include physician assistants in their health care model. Section 32.1 of the Act now allows PAs to be licensed, provided they register with the CPSNB. In addition, Regulation 14 was created in January 2010 in order to dictate the terms of practice for PAs in the province (CAPA, 2011).

Complaints: As per Regulation 14, “For greater certainty, as associate members of the College, Physician Assistants are subject to all such provisions of the Medical Act and Regulations as may be applicable.” As an associate member¹³ of the CPSNB, PAs can be disciplined under the CPSNB’s Complaints and Registration Committee.

Code of Ethics: One exists for Physicians and does not specify if it applies to associate members as well.

Title: 45(2) Except as provided in this Act and the regulations, no person, other than a Physician Assistant who holds a licence shall

- (a) publicly or privately, for hire, gain, or hope of reward, practise or offer to practise as a Physician Assistant;
- (b) hold himself out in any way to be entitled to practise as a Physician Assistant; or
- (c) use any title or description implying or designed to lead the public to believe that he is entitled to practise as a Physician Assistant.

Total PAs: 2

Relevant Legislation, Regulations and Bylaws

The Medical Act, 1981

Physician Assistants, Regulation 14, 2010

Scope of Practice and Authorized Acts

As per Regulation 14:

1. Physician Assistants shall only practise in the direct employment of a Regional Health Authority unless specifically authorized by Council.
2. A Physician Assistant shall only practise under the supervision of an identified physician or physicians in a structured format acceptable to Council.
3. A Physician Assistant shall only practise within the scope of their training and recent experience.
4. A supervising physician shall only delegate or authorize a Physician Assistant to practise within the scope of the physician’s training or recent experience.
5. For greater certainty, as associate members of the College, Physician Assistants are subject to all such provisions

¹³ An "associate member" means a person who is registered on the Medical Education Register, the Corporations Register or the Physician Assistants Register and holds a licence (<http://www.cpsnb.org/english/MedicalAct/med-act-3.html>)

of the *Medical Act* and Regulations as may be applicable.

Restricted Activities

N/A

Entry to Practice Requirements

For all purposes under The Medical Act and Regulations an applicant is eligible for registration on the Physician Assistants Register and licensure to practise if:

- a) Certified by the Physician Assistants Certification Council of the Canadian Association of Physician Assistants;
- b) Certified by the National Commission on Certification of Physician Assistants; and,
- c) A graduate of another Physician Assistant training program acceptable to Council.

Practice Settings

It is intended that Physician Assistants will be employed by Regional Health Authorities to provide service in hospital Emergency Departments (personal communication, Aug. 10, 2011).

Jurisdiction

Ontario

Current Status of the Profession

The Physician Assistant (PA) role was announced in May 2006 with the launch of HealthForceOntario, the government's health human resources strategy. The goal of HealthForceOntario is to give the people of Ontario access to the right number and mix of qualified health providers, now and in the future.

The Physician Assistant Initiative is being co-led by the Ministry of Health and Long-Term Care (MOHLTC) and the Ontario Medical Association (OMA). A Physician Assistant Implementation Steering Committee made up of employers, educators, regulators, and health professionals has been guiding the development, implementation, and evaluation of all PA demonstration projects since January 2007 (HFO, 2009).

Complaints: N/A

Title: N/A

Total PAs: Approximately 80 currently employed in Ontario (HFO, 2011)

Relevant Legislation, Regulations and Bylaws

Regulated Health Professions Act (RHPA), 1991 (Delegation of Authority, PAs are not registered)

Scope of Practice and Authorized Acts (HFO, 2007)

Taken from *Defining the Physician Assistant Role in Ontario: Ontario Physician Assistant Scope of Practice Statement And Ontario Physician Assistant Competency Profile*.

PAs are highly skilled healthcare professionals educated in the medical model who work under the supervision of a registered physician in a variety of clinical team structures and settings. Understanding what PAs can and cannot do, or defining their scope of practice, is essential to establish their professional role in Ontario.

- The scope of practice of clinicians working as Physician Assistants in Ontario can be defined by:
- Their education and training;
- Regulations pertaining to their practice; and,
- The delegatory relationship with the supervising physician.

PA training is modeled on physician education. Didactic instruction typically includes basic medical sciences such as anatomy, the pathophysiology of disease across all major systems, and pharmacology. There is an emphasis on history taking, detailed physical exam, differential diagnosis and treatment planning for conditions commonly seen in primary and emergent care. Clinical instruction includes rotations in Family Practice, Internal Medicine, General Surgery, Psychiatry, Paediatrics, OB-GYN, Trauma and Emergency Medicine.

For the most part, it is the unique working relationship between the Physician and the PA that governs the PA scope of practice. Mutually agreed upon guidelines between the physician and PA, facility guidelines

regarding PA use, and physician delegatory style set the framework for how individual PAs are used in each clinical setting.

The PA scope of practice is consistent with practice requirements articulated by the Canadian Association of Physician Assistants (CAPA), the Canadian Forces and PA practice in other jurisdictions. The PA scope of practice is unique from that of other health care disciplines. In that the PA is not an autonomous practitioner; all tasks must be delegated to the PA by the supervising physician. The type of work delegated, and the extent of direct supervision provided to the PA, is dependent on the physician's assessment of the PA's individual competencies, skills and experience in that practice setting. Further, only work within the physician's own scope of practice can be delegated to a PA. For example, PAs are able to provide only those medications that the supervising physician would normally prescribe, and that the supervising physician has assessed the PA as competent to provide under delegation. Thus, the individual relationship between the PA and the supervising physician becomes the essential determinant of each PA's individual clinical role, within the context of the PA's competencies and the PA scope of practice.

Restricted Activities (CMA, 2010)

Taken from the CMA, *Physician Assistant Toolkit*.

Ontario's *Regulated Health Professions Act (RHPA)*, 1991 allows certain controlled medical procedures to be delegated to PAs by a physician through verbal or prewritten orders or by medical directive. When the clinical work assigned to a PA involves a controlled act, the process of delegation described in **The College of Physicians and Surgeons of Ontario's Policy on Delegation of Controlled Acts** must be followed.

The supervising physician is responsible for the medical care provided to the patient by the PA. The physician can only delegate medical acts that are within their own scope of clinical practice. The physician must ensure that the delegation is in the best interests of the patient, and that the PA is appropriately directed and supervised in delegation. The supervising physician must be constantly available for consultation to the PA.

The supervising physician may incorporate frequently delegated acts that are performed competently by the PA into medical directives. Medical directives, which may be performed by the PA with varying degrees of physician supervision, serve to increase the efficiency of patient care and improve patient flow.

The PA is required to ensure that patients are aware of their status of PA when providing medical services. They are obligated to obtain informed patient consent, to keep a record of the delegated medical act, and to ensure that they have the necessary knowledge, skill, and judgment to perform any act that has been delegated.

Entry to Practice Requirements

Ontario has adopted the competency profile for Physician Assistants that has been articulated by The Canadian Association of Physician Assistants (CAPA) in its National Occupational Competency Profile, 2006 (CAPA, 2010).

Practice Settings (HFO, 2009)

The PA role was introduced to the Ontario health care system through demonstration projects launched in two phases: Emergency Department Demonstration Project; and Demonstration Projects in Hospitals, Primary Care Settings and Diabetes and Long-Term Care Settings. PAs have also been introduced to five Ontario primary care Community Health Centres.

Jurisdiction

Arizona

Current Status of the Profession

PAs are regulated by the Arizona Regulatory Board of Physician Assistants established under the Arizona Statutes.

Discipline:

32-2551. Grounds for disciplinary action; duty to report; immunity; proceedings; board action; notice; civil penalty

Title:

32-2554.

B. A person who is not licensed pursuant to this chapter shall not use the designation "P.A.", "P.A.-C." or "Physician assistant" or use any other words, initials or symbols in a way that leads the public to believe that the person is licensed pursuant to this chapter. A person who violates this subsection is guilty of a class 2 misdemeanor.

Total PAs: 1,662 (as of Sept. 2010)

Relevant Legislation, Regulations and Bylaws

Arizona Statutes, Title 32 – Professions and Occupations, Chapter 25 – Physician Assistants

Arizona Administrative Code Title 4. Professions and Occupations, Chapter 17. Arizona Regulatory Board of Physician Assistants

(The Board's rules governing physician assistants were last amended in 1998. The Board recognizes the need to update these rules and plans to do so as soon as possible. Although some inconsistencies exist between the rules and the Arizona Revised Statutes governing physician assistants, the Board complies with statute, particularly but not exclusively with regard to timeframes for appeals. Please refer to the PA Statutes, and call our office at 480-551-2700 if you have any questions.)

Scope of Practice and Authorized Acts

Arizona Statutes: 32-2531

A supervising physician may delegate health care tasks to a physician assistant.

C. The physician assistant may perform those duties and responsibilities, including the ordering, prescribing, dispensing and administration of drugs and medical devices that are delegated by the supervising physician.

D. The physician assistant may provide any medical service that is delegated by the supervising physician if the service is within the physician assistant's skills, is within the physician's scope of practice and is supervised by the physician.

E. The physician assistant may pronounce death and, if delegated, may authenticate by the physician assistant's signature any form that may be authenticated by a physician's signature.

F. The physician assistant is the agent of the physician assistant's supervising physician in the performance of all practice related activities, including the ordering of diagnostic, therapeutic and other medical services.

G. The physician assistant may perform health care tasks in any setting authorized by the supervising physician, including physician offices, clinics, hospitals, ambulatory surgical centers, patient homes, nursing homes and other health care institutions. These tasks may include:

1. Obtaining patient histories.
2. Performing physical examinations.

3. Ordering and performing diagnostic and therapeutic procedures.
4. Formulating a diagnostic impression.
5. Developing and implementing a treatment plan.
6. Monitoring the effectiveness of therapeutic interventions.
7. Assisting in surgery.
8. Offering counseling and education to meet patient needs.
9. Making appropriate referrals.
10. Prescribing schedule IV or V controlled substances as defined in the federal controlled substances act of 1970 (P.L. 91-513; 84 Stat. 1242; 21 United States Code section 802) and prescription-only medications.
11. Prescribing schedule II and III controlled substances as defined in the federal controlled substances act of 1970.
12. Performing minor surgery as defined in section 32-2501.
13. Performing other nonsurgical health care tasks that are normally taught in courses of training approved by the board, that are consistent with the training and experience of the physician assistant and that have been properly delegated by the supervising physician.

Supervision

H. The supervising physician shall:

1. Meet the requirements established by the board for supervising a physician assistant.
2. Accept responsibility for all tasks and duties the physician delegates to a physician assistant.
3. Notify the board and the physician assistant in writing if the physician assistant exceeds the scope of the delegated health care tasks.
4. Maintain a written agreement with the physician assistant. The agreement must state that the physician will exercise supervision over the physician assistant and retains professional and legal responsibility for the care rendered by the physician assistant. The agreement must be signed by the supervising physician and the physician assistant and updated annually. The agreement must be kept on file at the practice site and made available to the board on request.

I. A physician's ability to supervise a physician assistant is not affected by restrictions imposed by the board on a physician assistant pursuant to disciplinary action taken by the board.

J. Supervision must be continuous but does not require the personal presence of the physician at the place where health care tasks are performed if the physician assistant is in contact with the supervising physician by telecommunication. If the physician assistant practices in a location where a supervising physician is not routinely present, the physician assistant must meet in person or by telecommunication with a supervising physician at least once each week to ensure ongoing direction and oversight of the physician assistant's work. The board by order may require the personal presence of a supervising physician when designated health care tasks are performed.

K. At all times while a physician assistant is on duty, the physician assistant shall wear a name tag with the designation "physician assistant" on it.

L. The board by rule may prescribe a civil penalty for a violation of this article. The penalty shall not exceed fifty dollars for each violation. The board shall deposit, pursuant to sections 35-146 and 35-147, all monies it receives from this penalty in the state general fund. A physician assistant and the supervising physician may contest the imposition of this penalty pursuant to board rule. The imposition of a civil penalty is public information, and the board may use this information in any future disciplinary actions.

32-2533. Supervising physician; responsibilities

A. A supervising physician is responsible for all aspects of the performance of a physician assistant, whether or not the supervising physician actually pays the physician assistant a salary. The supervising physician is responsible for supervising the physician assistant and ensuring that the health care tasks performed by a

physician assistant are within the physician assistant's scope of training and experience and have been properly delegated by the supervising physician.

B. Each physician-physician assistant team must ensure that:

1. The physician assistant's scope of practice is identified.
2. The delegation of medical tasks is appropriate to the physician assistant's level of competence.
3. The relationship of, and access to, the supervising physician is defined.
4. A process for evaluation of the physician assistant's performance is established.

C. A supervising physician shall not supervise more than four physician assistants who work at the same time.

D. A supervising physician shall develop a system for recordation and review of all instances in which the physician assistant prescribes schedule II or schedule III controlled substances.

32-2532. Prescribing, administering and dispensing drugs; limits and requirements; notice

A. Except as provided in subsection F of this section, a physician assistant shall not prescribe, dispense or administer:

1. A schedule II or schedule III controlled substance as defined in the federal controlled substances act of 1970 (P.L. 91-513; 84 Stat. 1242; 21 United States Code section 802) without delegation by the supervising physician, board approval and drug enforcement administration registration.
2. A schedule IV or schedule V controlled substance as defined in the federal controlled substances act of 1970 without drug enforcement administration registration and delegation by the supervising physician.
3. Prescription-only medication without delegation by the supervising physician.
4. Prescription medication intended to perform or induce an abortion.

B. All prescription orders issued by a physician assistant shall contain the name, address and telephone number of the supervising physician. A physician assistant shall issue prescription orders for controlled substances under the physician assistant's own drug enforcement administration registration number.

C. Unless certified for thirty day prescription privileges pursuant to section 32-2504, subsection A, a physician assistant shall not prescribe a schedule II or schedule III controlled substance for a period exceeding seventy-two hours. For each schedule IV or schedule V controlled substance, a physician assistant may not prescribe the controlled substance more than five times in a six month period for each patient.

D. A prescription for a schedule II or III controlled substance is not refillable without the written consent of the supervising physician.

E. Prescription-only drugs shall not be dispensed, prescribed or refillable for a period exceeding one year.

F. Except in an emergency, a physician assistant may dispense schedule II or schedule III controlled substances for a period of use of not to exceed seventy-two hours with board approval or any other controlled substance for a period of use of not to exceed thirty-four days and may administer controlled substances without board approval if it is medically indicated in an emergency dealing with potential loss of life or limb or major acute traumatic pain.

G. Except for samples provided by manufacturers, all drugs dispensed by a physician assistant shall be:

1. Prepackaged in a unit-of-use package by the supervising physician or a pharmacist acting on a written order of the supervising physician.
2. Labeled to show the name of the supervising physician and physician assistant.

H. A physician assistant shall not obtain a drug from any source other than the supervising physician or a pharmacist acting on a written order of the supervising physician. A physician assistant may receive manufacturers' samples if allowed to do so by the supervising physician.

I. If a physician assistant is approved by the board to prescribe, administer or dispense schedule II and

schedule III controlled substances, the physician assistant shall maintain an up-to-date and complete log of all schedule II and schedule III controlled substances he administers or dispenses.

J. The board shall advise the state board of pharmacy and the United States drug enforcement administration of all physician assistants who are authorized to prescribe or dispense drugs and any modification of their authority.

K. The state board of pharmacy shall notify all pharmacies at least quarterly of physician assistants who are authorized to prescribe or dispense drugs.

Restricted Activities

32-2531

B. A physician assistant shall not perform surgical abortions as defined in section 36-2151.

Entry to Practice Requirements

32-2521. Qualifications

A. An applicant for licensure shall:

1. Have graduated from a physician assistants educational program approved by the board.
2. Pass a certifying examination approved by the board.
3. Be physically and mentally able to safely perform health care tasks as a physician assistant.
4. Have a professional record that indicates that the applicant has not committed any act or engaged in any conduct that constitutes grounds for disciplinary action against a licensee pursuant to this chapter. This paragraph does not prevent the board from considering the application of an applicant who was the subject of disciplinary action in another jurisdiction if the applicant's act or conduct was subsequently corrected, monitored and resolved to the satisfaction of that jurisdiction's regulatory board.
5. Not have had a license to practice revoked by a regulatory board in another jurisdiction in the United States for an act that occurred in that jurisdiction that constitutes unprofessional conduct pursuant to this chapter.
6. Not be currently under investigation, suspension or restriction by a regulatory board in another jurisdiction in the United States for an act that occurred in that jurisdiction that constitutes unprofessional conduct pursuant to this chapter. If the applicant is under investigation by a regulatory board in another jurisdiction, the board shall suspend the application process and may not issue or deny a license to the applicant until the investigation is resolved.
7. Not have surrendered, relinquished or given up a license in lieu of disciplinary action by a regulatory board in another jurisdiction in the United States for an act that occurred in that jurisdiction that constitutes unprofessional conduct pursuant to this chapter. This paragraph does not prevent the board from considering the application of an applicant who surrendered, relinquished or gave up a license in lieu of disciplinary action by a regulatory board in another jurisdiction if that regulatory board subsequently reinstated the applicant's license.

32-2524. Exemption from licensure

This chapter does not require licensure of:

1. A student who is enrolled in a physician assistant education program approved by the board.
2. A physician assistant who is an employee of the United States government and who works on land or in facilities owned or operated by the United States government.
3. A physician assistant who is a member of the reserve components of the United States and who is on official orders or performing official duties as outlined in the appropriate regulation of that branch of military

service.

Practice Settings

N/A

Jurisdiction

California

Current Status of the Profession

Physician Assistants are regulated by the Physician Assistant Committee, a subsidiary of the Medical Board of California established by the *Business and Professions Code*

Discipline

California Code of Regulations 1399.523 - Disciplinary Guidelines:

In reaching a decision on a disciplinary action under the Administrative Procedures Act (Government Code Section 11400 et seq.), the Physician Assistant Committee shall consider the disciplinary guidelines entitled "Physician Assistant Committee Manual of Model Disciplinary Guidelines and Model Disciplinary Orders" 3rd Edition (2007) which are hereby incorporated by reference.

Title:

Business and Professions Code, Section 3503. Limitation

No person other than one who has been licensed to practice as a physician assistant or authorized to practice on interim approval under Section 3517 shall practice as a physician assistant or in a similar capacity to a physician and

surgeon or podiatrist or hold himself or herself out as a "physician assistant," or shall use any other term indicating or implying that he or she is a physician assistant.

2274. Misuse of Titles

(a) The use by any licensee of any certificate, of any letter, letters, word, words, term, or terms either as a prefix, affix, or suffix indicating that he or she is entitled to engage in a medical practice for which he or she is not licensed constitutes unprofessional conduct.

(b) Nothing in this section shall be construed to prohibit a physician and surgeon from using the designations specified in this section if he or she has been issued a retired license under Section 2439.

Total PAs: 6,247 (as of Sept. 2010)

Relevant Legislation, Regulations and Bylaws

California Business and Professions Code Sections 3500-3503.5 Article 1, 2005

Title 16 Division 13.8 of the California Code of Regulations

Scope of Practice and Authorized Acts

California Code of Regulations Title 16

1399.540. Limitation on Medical Services.

(a) A physician assistant may only provide those medical services which he or she is competent to perform and which are consistent with the physician assistant's education, training, and experience, and which are delegated in writing by a supervising physician who is responsible for the patients cared for by that physician assistant. (b) The writing which delegates the medical services shall be known as a delegation of services agreement. A **delegation of services agreement** shall be signed and dated by the physician assistant and

each supervising physician. A delegation of services agreement may be signed by more than one supervising physician only if the same medical services have been delegated by each supervising physician. A physician assistant may provide medical services pursuant to more than one delegation of services agreement. (c) The committee or division or their representative may require proof or demonstration of competence from any physician assistant for any tasks, procedures or management he or she is performing. (d) A physician assistant shall consult with a physician regarding any task, procedure or diagnostic problem which the physician assistant determines exceeds his or her level of competence or shall refer such cases to a physician.

1399.541. Medical Services Performable.

Because physician assistant practice is directed by a supervising physician, and a physician assistant acts as an agent for that physician, the orders given and tasks performed by a physician assistant shall be considered the same as if they had been given and performed by the supervising physician. Unless otherwise specified in these regulations or in the delegation or protocols, these orders may be initiated without the prior patient specific order of the supervising physician. In any setting, including for example, any licensed health facility, out-patient settings, patients' residences, residential facilities, and hospices, as applicable, a physician assistant may, pursuant to a delegation and protocols where present:

- (a) Take a patient history; perform a physical examination and make an assessment and diagnosis therefrom; initiate, review and revise treatment and therapy plans including plans for those services described in Section 1399.541(b) through Section 1399.541(i) inclusive; and record and present pertinent data in a manner meaningful to the physician.
- (b) Order or transmit an order for x-ray, other studies, therapeutic diets, physical therapy, occupational therapy, respiratory therapy, and nursing services.
- (c) Order, transmit an order for, perform, or assist in the performance of laboratory procedures, screening procedures and therapeutic procedures.
- (d) Recognize and evaluate situations which call for immediate attention of a physician and institute, when necessary, treatment procedures essential for the life of the patient.
- (e) Instruct and counsel patients regarding matters pertaining to their physical and mental health. Counseling may include topics such as medications, diets, social habits, family planning, normal growth and development, aging, and understanding of and long-term management of their diseases.
- (f) Initiate arrangements for admissions, complete forms and charts pertinent to the patient's medical record, and provide services to patients requiring continuing care, including patients at home.
- (g) Initiate and facilitate the referral of patients to the appropriate health facilities, agencies, and resources of the community.
- (h) Administer or provide medication to a patient, or issue or transmit drug orders orally or in writing in accordance with the provisions of subdivisions (a)-(f), inclusive, of Section 3502.1 of the Code.
- (i) (1) Perform surgical procedures without the personal presence of the supervising physician which are customarily performed under local anesthesia. Prior to delegating any such surgical procedures, the supervising physician shall review documentation which indicates that the physician assistant is trained to perform the surgical procedures. All other surgical procedures requiring other forms of anesthesia may be performed by a physician assistant only in the personal presence of an approved supervising physician.
(2) A physician assistant may also act as first or second assistant in surgery under the supervision of an approved supervising physician.

Supervision (regulation can be found in Section 1399.545 of the California Business and Professions Code):

1399.545. Supervision Required.

(a) A supervising physician shall be available in person or by electronic communication at all times when the physician assistant is caring for patients.

(b) A supervising physician shall delegate to a physician assistant only those tasks and procedures consistent with the supervising physician's specialty or usual and customary practice and with the patient's health and condition.

(c) A supervising physician shall observe or review evidence of the physician assistant's performance of all tasks and procedures to be delegated to the physician assistant until assured of competency.

(d) The physician assistant and the supervising physician shall establish in writing transport and back-up procedures for the immediate care of patients who are in need of emergency care beyond the physician assistant's scope of practice for such times when a supervising physician is not on the premises.

(e) A physician assistant and his or her supervising physician shall establish in writing guidelines for the adequate supervision of the physician assistant which shall include one or more of the following mechanisms:

(1) Examination of the patient by a supervising physician the same day as care is given by the physician assistant;

(2) Countersignature and dating of all medical records written by the physician assistant within thirty (30) days that the care was given by the physician assistant;

(3) The supervising physician may adopt protocols to govern the performance of a physician assistant for some or all tasks. The minimum content for a protocol governing diagnosis and management as referred to in this section shall include the presence or absence of symptoms, signs, and other data necessary to establish a diagnosis or assessment, any appropriate tests or studies to order, drugs to recommend to the patient, and education to be given the patient. For protocols governing procedures, the protocol shall state the information to be given the patient, the nature of the consent to be obtained from the patient, the preparation and technique of the procedure, and the follow-up care. Protocols shall be developed by the physician, adopted from, or referenced to, texts or other sources. Protocols shall be signed and dated by the supervising physician and the physician assistant. The supervising physician shall review, countersign, and date a minimum of 10% sample of medical records of patients treated by the physician assistant functioning under these protocols within thirty (30) days. The physician shall select for review those cases which by diagnosis, problem, treatment or procedure represent, in his or her judgment, the most significant risk to the patient;

(4) Other mechanisms approved in advance by the committee.

(f) In the case of a physician assistant operating under interim approval, the supervising physician shall review, sign and date the medical record of all patients cared for by that physician assistant within seven (7) days if the physician was on the premises when the physician assistant diagnosed or treated the patient. If

the physician was not on the premises at that time, he or she shall review, sign and date such medical records within 48 hours of the time the medical services were provided.

(g) The supervising physician has continuing responsibility to follow the progress of the patient and to make sure that the physician assistant does not function autonomously. The supervising physician shall be responsible for all medical services provided by a physician assistant under his or her supervision.

Prescribing:

California Business and Professions Code: 3502.1. Prescription Transmittal Authority

(a) In addition to the services authorized in the regulations adopted by the board, and except as prohibited by Section 3502, while under the supervision of a licensed physician and surgeon or physicians and surgeons authorized by law to supervise a physician assistant, a physician assistant may administer or provide medication to a patient, or transmit orally, or in writing on a patient's record or in a drug order, an order to a person who may lawfully furnish the medication or medical device pursuant to subdivisions (c) and (d).

(1) A supervising physician and surgeon who delegates authority to issue a drug order to a physician assistant may limit this authority by specifying the manner in which the physician assistant may issue delegated prescriptions.

(2) Each supervising physician and surgeon who delegates the authority to issue a drug order to a physician assistant shall first prepare and adopt, or adopt, a written, practice specific, formulary and protocols that specify all criteria for the use of a particular drug or device, and any contraindications for the selection. Protocols for Schedule II controlled substances shall address the diagnosis of illness, injury, or condition for which the Schedule II controlled substance is being administered, provided, or issued. The drugs listed in the protocols shall constitute the formulary and shall include only drugs that are appropriate for use in the type of practice engaged in by the supervising physician and surgeon. When issuing a drug order, the physician assistant is acting on behalf of and as an agent for a supervising physician and surgeon.

(b) "Drug order" for purposes of this section means an order for medication that is dispensed to or for a patient, issued and signed by a physician assistant acting as an individual practitioner within the meaning of Section 1306.02 of Title 21 of the Code of Federal Regulations. Notwithstanding any other provision of law, (1) a drug order issued pursuant to this section shall be treated in the same manner as a prescription or order of the supervising physician, (2) all references to "prescription" in this code and the Health and Safety Code shall include drug orders issued by physician assistants pursuant to authority granted by their supervising physicians and surgeons, and (3) the signature of a physician assistant on a drug order shall be deemed to be the signature of a prescriber for purposes of this code and the Health and Safety Code.

(c) A drug order for any patient cared for by the physician assistant that is issued by the physician assistant shall either be based on the protocols described in subdivision (a) or shall be approved by the supervising physician and surgeon before it is filled or carried out.

(1) A physician assistant shall not administer or provide a drug or issue a drug order for a drug other than for a drug listed in the formulary without advance approval from a supervising physician and surgeon for the

particular patient. At the direction and under the supervision of a physician and surgeon, a physician assistant may hand to a patient of the supervising physician and surgeon a properly labeled prescription drug prepackaged by a physician and surgeon, manufacturer as defined in the Pharmacy Law, or a pharmacist.

(2) A physician assistant may not administer, provide, or issue a drug order to a patient for Schedule II through Schedule V controlled substances without advance approval by a supervising physician and surgeon for that particular patient unless the physician assistant has completed an education course that covers controlled substances and that meets standards, including pharmacological content, approved by the committee. The education course shall be provided either by an accredited continuing education provider or by an approved physician assistant training program. If the physician assistant will administer, provide, or issue a drug order for Schedule II controlled substances, the course shall contain a minimum of three hours exclusively on Schedule II controlled substances. Completion of the requirements set forth in this paragraph shall be verified and documented in the manner established by the committee prior to the physician assistant's use of a registration number issued by the United States Drug Enforcement Administration to the physician assistant to administer, provide, or issue a drug order to a patient for a controlled substance without advance approval by a supervising physician and surgeon for that particular patient.

(3) Any drug order issued by a physician assistant shall be subject to a reasonable quantitative limitation consistent with customary medical practice in the supervising physician and surgeon's practice.

(d) A written drug order issued pursuant to subdivision (a), except a written drug order in a patient's medical record in a health facility or medical practice, shall contain the printed name, address, and phone number of the supervising physician and surgeon, the printed or stamped name and license number of the physician assistant, and the signature of the physician assistant. Further, a written drug order for a controlled substance, except a written drug order in a patient's medical record in a health facility or a medical practice, shall include the federal controlled substances registration number of the physician assistant and shall otherwise comply with the provisions of Section 11162.1 of the Health and Safety Code. Except as otherwise required for written drug orders for controlled substances under Section 11162.1 of the Health and Safety Code, the requirements of this subdivision may be met through stamping or otherwise imprinting on the supervising physician and surgeon's prescription blank to show the name, license number, and if applicable, the federal controlled substances number of the physician assistant, and shall be signed by the physician assistant. When using a drug order, the physician assistant is acting on behalf of and as the agent of a supervising physician and surgeon.

(e) The medical record of any patient cared for by a physician assistant for whom the physician assistant's Schedule II drug order has been issued or carried out shall be reviewed and countersigned and dated by a supervising physician and surgeon within seven days.

(f) All physician assistants who are authorized by their supervising physicians to issue drug orders for controlled substances shall register with the United States Drug Enforcement Administration (DEA).

(g) The committee shall consult with the Medical Board of California and report during its sunset review required by Division 1.2 (commencing with Section 473) the impacts of exempting Schedule III and Schedule IV drug orders from the requirement for a physician and surgeon to review and countersign the affected medical record of a patient.

Restricted Activities

A PA may **not** perform any of the following medical services pursuant to Business and Professions Code section 3502 (c):

- The determination of the refractive states of the eye, or the fitting or adaptation of lenses or frames.
- The prescribing or directing the use of, or using any optical device in connection with ocular exercises, visual training or orthoptics.
- The prescribing, fitting or adaptation of contact lenses.
- The practice of dentistry or dental hygiene or the work of a dental auxiliary.

A PA may perform a routine visual screening defined pursuant to Business and Professions Code section 3501 (i) as an uninvasive nonpharmacological simple testing for visual acuity, visual field defects, color blindness, and depth perception.

Entry to Practice Requirements

California Business and Professions Code, Section 3519. Requirements for Licensure:

The committee shall issue under the name of the Medical Board of California a license to all physician assistant applicants who meet all of the following requirements:

- (a) Provide evidence of one of the following:
 - (1) Successful completion of an approved program.
 - (2) Successful completion in a medical school approved by the Division of Licensing of a resident course of professional instruction which meets the requirements of Sections 2088 and 2089.
- (b) Pass any examination required under Section 3517.
- (c) Not be subject to denial of licensure under Division 1.5 (commencing with Section 475) or Section 3527.
- (d) Pay all fees required under Section 3521.1.

Practice Settings (California Academy of Physician Assistants, 2010)

PAs are employed in many specialties. A partial listing includes general and family practice; emergency medicine; pediatrics; obstetrics and gynecology; surgery; orthopedics; geriatrics; women's health; occupational medicine; psychiatry and mental health; cardiology and internal medicine; oncology; and administrative and educational appointment.

California PAs practice in a variety of rural and urban settings, always under the supervision of a licensed physician. Typical practice settings include:

- Solo and group practices
- HMOs
- County facilities
- Clinics
- Hospitals
- Hospices
- Student health services
- Teaching institutions
- Military facilities
- Veterans Administration facilities

- Federal and State correctional institutions
- Nursing homes
- House calls/Home care

PAs may work in any medical setting in which their supervising physician(s) practice, including private offices, general acute care hospitals, acute psychiatric hospitals, special hospitals, nursing facilities, intermediate care facilities, and private homes.

Jurisdiction

Michigan

Current Status of the Profession

PAs in Michigan are licensed by the Michigan Task Force on PAs, established under the Public Health Code.

Public Health Code, Section 333.17060 Outlines the Duties of the Task Force on PAs

Discipline

333.16216 of the Public Health Code allows for the Task Force to create discipline subcommittees to impose disciplinary sanctions

Title:

333.16261 Health profession; prohibited use of insignia, title, letter, word, or phrase.

(1) An individual who is not licensed or registered under this article shall not use an insignia, title, or letter, or a word, letter, or phrase singly or in combination, with or without qualifying words, letters, or phrases, under a circumstance to induce the belief that the person is licensed or registered in this state, is lawfully entitled in this state to engage in the practice of a health profession regulated by this article, or is otherwise in compliance with this article.

(2) An individual shall not announce or hold himself or herself out to the public as limiting his or her practice to, as being specially qualified in, or as giving particular attention to a health profession specialty field for which a board issues a specialty certification or a health profession specialty field license, without first having obtained a specialty certification or a health profession specialty field license.

Total PAs: 3,076 (as of Sept. 2010)

Relevant Legislation, Regulations and Bylaws

Public Health Code, Act 368 of 1978 Article 15 OCCUPATIONS, Section 333.17001...333.17088
General Rules R 338.6101 - 338.6401

Scope of Practice and Authorized Acts

Sec. 17048.

Supervision:

(1) Except as otherwise provided in this section and section 17049(5), a physician who is a sole practitioner or who practices in a group of physicians and treats patients on an outpatient basis shall not supervise more than 4 physician's assistants. If a physician described in this subsection supervises physician's assistants at more than 1 practice site, the physician shall not supervise more than 2 physician's assistants by a method other than the physician's actual physical presence at the practice site.

(2) A physician who is employed by, under contract or subcontract to, or has privileges at a health facility or agency licensed under article 17 or a state correctional facility may supervise more than 4 physician's assistants at the health facility or agency or state correctional facility.

(3) To the extent that a particular selected medical care service requires extensive medical training, education, or ability or poses serious risks to the health and safety of patients, the board may prohibit or

otherwise restrict the delegation of that medical care service or may require higher levels of supervision.

(4) A physician shall not delegate ultimate responsibility for the quality of medical care services, even if the medical care services are provided by a physician's assistant.

(5) The board may promulgate rules for the delegation by a supervising physician to a physician's assistant of the function of prescription of drugs. The rules may define the drugs or classes of drugs the prescription of which shall not be delegated and other procedures and protocols necessary to promote consistency with federal and state drug control and enforcement laws. Until the rules are promulgated, a supervising physician may delegate the prescription of drugs other than controlled substances as defined by article 7 or federal law. When delegated prescription occurs, both the physician's assistant's name and the supervising physician's name shall be used, recorded, or otherwise indicated in connection with each individual prescription.

(6) A supervising physician may delegate in writing to a physician's assistant the ordering, receipt, and dispensing of complimentary starter dose drugs other than controlled substances as defined by article 7 or federal law. When the delegated ordering, receipt, or dispensing of complimentary starter dose drugs occurs, both the physician's assistant's name and the supervising physician's name shall be used, recorded, or otherwise indicated in connection with each order, receipt, or dispensing. As used in this subsection, "complimentary starter dose" means that term as defined in section 17745. It is the intent of the legislature in enacting this subsection to allow a pharmaceutical manufacturer or wholesale distributor, as those terms are defined in part 177, to distribute complimentary starter dose drugs to a physician's assistant, as described in this subsection, in compliance with section 503(d) of the federal food, drug, and cosmetic act, 21 USC 353.

Sec. 17049.

(1) In addition to the other requirements of this section and subject to subsection (5), a physician who supervises a physician's assistant is responsible for all of the following:

(a) Verification of the physician's assistant's credentials.

(b) Evaluation of the physician's assistant's performance.

(c) Monitoring the physician's assistant's practice and provision of medical care services.

(2) Subject to section 17048, a physician who supervises a physician's assistant may delegate to the physician's assistant the performance of medical care services for a patient who is under the case management responsibility of the physician, if the delegation is consistent with the physician's assistant's training.

(3) A physician who supervises a physician's assistant is responsible for the clinical supervision of each physician's assistant to whom the physician delegates the performance of medical care service under subsection (2).

(4) Subject to subsection (5), a physician who supervises a physician's assistant shall keep on file in the physician's office or in the health facility or agency or correctional facility in which the physician supervises the physician's assistant a permanent, written record that includes the physician's name and license number and the name and license number of each physician's assistant supervised by the physician.

(5) A group of physicians practicing other than as sole practitioners may designate 1 or more physicians in the group to fulfill the requirements of subsections (1) and (4).

(6) Notwithstanding any law or rule to the contrary, a physician is not required to countersign orders written in a patient's clinical record by a physician's assistant to whom the physician has delegated the performance of medical care services for a patient.

Sec. 17076.

(1) Except in an emergency situation, a physician's assistant shall provide medical care services only under the supervision of a physician or properly designated alternative physician, and only if those medical care

services are within the scope of practice of the supervising physician and are delegated by the supervising physician.

Restricted Activities

Sec. 17074.

- (1) A physician's assistant shall not undertake or represent that he or she is qualified to undertake provision of a medical care service that he or she knows or reasonably should know to be outside his or her competence or is prohibited by law.
- (2) A physician's assistant shall not:
 - (a) Perform acts, tasks, or functions to determine the refractive state of a human eye or to treat refractive anomalies of the human eye, or both.
 - (b) Determine the spectacle or contact lens prescription specifications required to treat refractive anomalies of the human eye, or determine modification of spectacle or contact lens prescription specifications, or both.
- (3) A physician's assistant may perform routine visual screening or testing, postoperative care, or assistance in the care of medical diseases of the eye under the supervision of a physician.
- (4) A physician's assistant acting under the supervision of a podiatrist shall only perform those duties included within the scope of practice of that supervising podiatrist.

Entry to Practice Requirements

Sec. 17062.

An applicant for licensure as a physician's assistant shall meet the requirements of section 16174(a), (b), and (d) and be a graduate of a program for the training of physician's assistants approved by the task force or be a licensed, certified, registered, approved, or other legally recognized physician's assistant in another state with qualifications substantially equivalent to those established by the task force.

Sec. 17064.

- (1) To determine whether an applicant for initial licensure has the appropriate level of skill and knowledge as required by this part, the task force shall require the applicant to submit to an examination which shall include those subjects the general knowledge of which is commonly and generally required of a graduate of an accredited physician's assistants' program in the United States. The task force may waive the examination requirement for a graduate of an approved program if the applicant has taken a national examination and achieved a score acceptable to the task force as demonstrating the level of skill and knowledge required by this part. The task force may waive the examination for an applicant who is licensed, certified, registered, approved, or otherwise legally recognized as a physician's assistant in another state, when the task force determines that the other state has qualifications, including completion of a national or state approved examination for physician's assistants that are substantially equivalent to those established by this part.
- (2) The nature of an examination shall be determined by the task force and may include the use and acceptance of national examinations where appropriate. The use of examinations or the requirements for successful completion shall not permit discriminatory treatment of applicants.
- (3) The task force shall provide for the recognition of the certification or experience consistent with this part acquired by physician's assistants in other states who wish to practice in this state.
- (4) The task force may cause an investigation to be conducted when necessary to determine the

qualifications of an applicant for licensure. An applicant may be required to furnish additional documentation and information upon a determination by the task force that the documentation or information is necessary to evaluate the applicant's qualifications.

R 338.6301 Application for physician's assistant license by examination¹⁴.

Rule 301. An applicant for a physician's assistant license by examination shall submit a completed application on a form provided by the department, together with the requisite fee. In addition to meeting the requirements of the code and the administrative rules promulgated pursuant thereto, an applicant shall satisfy both of the following requirements:

- (a) The applicant shall have satisfactorily completed a program for the training of physicians' assistants approved by the task force.
- (b) The applicant shall have passed the certifying examination conducted and scored by the national commission on certification of physicians' assistants.

Practice Settings

Sec. 17076.

(2) A physician's assistant shall provide medical care services only in a medical care setting where the supervising physician regularly sees patients. However, a physician's assistant may make calls or go on rounds under the supervision of a physician in private homes, public institutions, emergency vehicles, ambulatory care clinics, hospitals, intermediate or extended care facilities, health maintenance organizations, nursing homes, or other health care facilities to the extent permitted by the bylaws, rules, or regulations of the governing facility or organization, if any.

¹⁴ Task Force of Physician Assistants, General Rules. Retrieved from http://www.state.mi.us/orr/emi/admincode.asp?AdminCode=Single&Admin_Num=33806101&Dpt=LG&RngHigh=

Jurisdiction

Minnesota

Current Status of the Profession

PAs are regulated and licensed by the Minnesota Board of Medical Practice.

Section 147A.27 of the Minnesota Statutes governing PAs, establishes a PA Advisory Council and lists their advisory duties including; licensure standards, enforcement of grounds for discipline and more

The Board may issue a permanent or temporary license to a PA. A temporary license is for applicants who meet the permanent licensure requirement but wish to practice before final approval has been granted by the Board.

Title

147A.03 PROTECTED TITLES AND RESTRICTIONS ON USE.

Subdivision 1. Protected titles.

No individual may use the titles "Minnesota Licensed Physician Assistant," "Licensed Physician Assistant," "Physician Assistant," or "PA" in connection with the individual's name, or any other words, letters, abbreviations, or insignia indicating or implying that the individual is licensed by the state unless they have been licensed according to this chapter.

Discipline

147A.13 GROUNDS FOR DISCIPLINARY ACTION.

Subdivision 1. Grounds listed.

This section states the conduct for which disciplinary action is carried out.

147A.16 FORMS OF DISCIPLINARY ACTION.

This section lists the forms of disciplinary action available to the Board when the board finds that a licensed physician assistant has violated a provision of this chapter.

Total PAs: 1,359 (as of Sept. 2010)

Relevant Legislation, Regulations and Bylaws

Minnesota Statutes, Chapter 147A, Physician Assistants, Registration (Physician Assistants Practice Act)

Scope of Practice and Authorized Acts

147A.09 SCOPE OF PRACTICE, DELEGATION.

Subdivision 1. **Scope of practice.**

Physician assistants shall practice medicine only with physician supervision. Physician assistants may perform those duties and responsibilities as delegated in the physician-physician assistant delegation agreement and delegation forms maintained at the address of record by the supervising physician and physician assistant, including the prescribing, administering, and dispensing of drugs, controlled substances, and medical devices, excluding anesthetics, other than local anesthetics, injected in connection with an operating room procedure, inhaled anesthesia and spinal anesthesia.

Patient service must be limited to:

- (1) services within the training and experience of the physician assistant;
- (2) services customary to the practice of the supervising physician or alternate supervising physician;
- (3) services delegated by the supervising physician or alternate supervising physician under the physician-physician assistant delegation agreement; and
- (4) services within the parameters of the laws, rules, and standards of the facilities in which the physician assistant practices.

Nothing in this chapter authorizes physician assistants to perform duties regulated by the boards listed in section 214.01, subdivision 2, other than the Board of Medical Practice, and except as provided in this section.

Subd. 2. Delegation.

Patient services may include, but are not limited to, the following, as delegated by the supervising physician and authorized in the delegation agreement:

- (1) taking patient histories and developing medical status reports;
- (2) performing physical examinations;
- (3) interpreting and evaluating patient data;
- (4) ordering or performing diagnostic procedures, including the use of radiographic imaging systems in compliance with Minnesota Rules 2007, chapter 4732;
- (5) ordering or performing therapeutic procedures including the use of ionizing radiation in compliance with Minnesota Rules 2007, chapter 4732;
- (6) providing instructions regarding patient care, disease prevention, and health promotion;
- (7) assisting the supervising physician in patient care in the home and in health care facilities;
- (8) creating and maintaining appropriate patient records;
- (9) transmitting or executing specific orders at the direction of the supervising physician;
- (10) prescribing, administering, and dispensing drugs, controlled substances, and medical devices if this function has been delegated by the supervising physician pursuant to and subject to the limitations of section 147A.18 and chapter 151. For physician assistants who have been delegated the authority to prescribe controlled substances, such delegation shall be included in the physician-physician assistant delegation agreement, and all schedules of controlled substances the physician assistant has the authority to prescribe shall be specified;
- (11) for physician assistants not delegated prescribing authority, administering legend drugs and medical devices following prospective review for each patient by and upon direction of the supervising physician;
- (12) functioning as an emergency medical technician with permission of the ambulance service and in compliance with section 144E.127, and ambulance service rules adopted by the commissioner of health;
- (13) initiating evaluation and treatment procedures essential to providing an appropriate response to emergency situations;
- (14) certifying a patient's eligibility for a disability parking certificate under section 169.345, subdivision 2;
- (15) assisting at surgery; and
- (16) providing medical authorization for admission for emergency care and treatment of a patient under section 253B.05, subdivision 2.

Orders of physician assistants shall be considered the orders of their supervising physicians in all practice-related activities, including, but not limited to, the ordering of diagnostic, therapeutic, and other medical services.

147A.20 PHYSICIAN-PHYSICIAN ASSISTANT AGREEMENT DOCUMENTS.

Subdivision 1. Physician-physician assistant delegation agreement.

- (a) A physician assistant and supervising physician must sign a physician-physician assistant delegation

agreement which specifies scope of practice and manner of supervision as required by the board. The agreement must contain:

- (1) a description of the practice setting;
 - (2) a listing of categories of delegated duties;
 - (3) a description of supervision type; and
 - (4) a description of the process and schedule for review of prescribing, dispensing, and administering legend and controlled drugs and medical devices by the physician assistant authorized to prescribe.
- (b) The agreement must be maintained by the supervising physician and physician assistant and made available to the board upon request. If there is a delegation of prescribing, administering, and dispensing of legend drugs, controlled substances, and medical devices, the agreement shall include a description of the prescriptive authority delegated to the physician assistant. Physician assistants shall have a separate agreement for each place of employment. Agreements must be reviewed and updated on an annual basis. The supervising physician and physician assistant must maintain the physician-physician assistant delegation agreement at the address of record.
- (c) Physician assistants must provide written notification to the board within 30 days of the following:
- (1) name change;
 - (2) address of record change; and
 - (3) telephone number of record change.
- (d) Any alternate supervising physicians must be identified in the physician-physician assistant delegation agreement, or a supplemental listing, and must sign the agreement attesting that they shall provide the physician assistant with supervision in compliance with this chapter, the delegation agreement, and board rules.

Subd. 2. Notification of intent to practice.

A licensed physician assistant shall submit a notification of intent to practice to the board prior to beginning practice. The notification shall include the name, business address, and telephone number of the supervising physician and the physician assistant. Individuals who practice without submitting a notification of intent to practice shall be subject to disciplinary action under section 147A.13 for practicing without a license, unless the care is provided in response to a disaster or emergency situation pursuant to section 147A.23.

Restricted Activities

N/A

Entry to Practice Requirements

The law provides the following requirements for licensure: 1) current certification from National Commission on Certification of Physician Assistants; and 2) is not under current discipline as a physician assistant unless Board considers the condition for licensure¹⁵.

Practice Settings

147A.10 SATELLITE SETTINGS.

Physician assistants may render services in a setting geographically remote from the supervising physician.

¹⁵ Ibid.

Jurisdiction

North Dakota

Current Status of the Profession

PA's are regulated under the North Dakota State Board of Medical Examiners by the Medical Practice Act of North Dakota and the Board Administrative Rules.

The board issues the following categories of licenses:

1. Permanent licensure - which will continue in effect so long as the physician assistant meets all requirements of the board.
2. Locum tenens permit - which may be issued for a period not to exceed three months.

Title:

Medical Practice Act 43-17-02.2

The terms "physician assistant" and "certified physician assistant" and the initials "PA-C" may only be used to identify a person who has been issued a certificate of qualification by the board of medical examiners. A person who uses those terms or initials as identification without having received a certificate of qualification is engaging in the practice of medicine without a license.

Complaints:

Medical Practice Act 43-17.1-05

Discipline:

50-03-01-10.1 and 50-03-01-11 outline the disciplinary actions the board may take and the grounds on which they may take them.

Total PAs: 229 (as of Sept. 2010)

Relevant Legislation, Regulations and Bylaws

Medical Practice Act of North Dakota Chapter 43-17
North Dakota Administrative Code, Chapter 50-03-01

Scope of Practice and Authorized Acts

50-03-01-04.

Supervision:

For the purpose of this section, "supervision" means overseeing the activities of, and accepting the responsibility for, the medical services rendered by a physician assistant. Supervision shall be continuous but shall not be construed as necessarily requiring the physical presence of the supervising physician at the time and place that the services are rendered. It is the responsibility of the supervising physician to direct and review the work, records, and practice of the physician assistant on a continuous basis to ensure that appropriate and safe treatment is rendered. The supervising physician must be available continuously for contact personally or by telephone or other electronic means. It is the obligation of each team of physicians and physician assistants to ensure that the physician assistant's scope of practice is identified; that

delegation of medical tasks is appropriate to the physician assistant's level of competence; that the relationship of, and access to, the supervising physician is defined; and that a process for evaluation of the physician assistant's performance is established.

50-03-01-06, Assistant's functions limited

Physician assistants may perform only those duties and responsibilities that are delegated by their supervising physicians. No supervising physician may delegate to a physician assistant any duty or responsibility for which the physician assistant has not been adequately trained. Physician assistants are the agents of their supervising physicians in the performance of all practice-related activities. A physician assistant may provide patient care only in those areas of medical practice where the supervising physician provides patient care.

50-03-01-07.1. Medication dispensation

A physician assistant may dispense medications which the physician assistant is authorized to prescribe in the following circumstances:

1. The dispensation is in compliance with all applicable federal and state regulations;
2. Pharmacy services are not reasonably available, or an emergency requires the immediate dispensation of medication for the appropriate medical care of a patient; and
3. Dispensation of medications by the physician assistant is within the guidelines of the supervising physician.

Medical Practice Act 43-17-02.1

A physician assistant may prescribe medications as delegated to do so by a supervising physician. This may include schedule II through V controlled substances. A physician assistant who is a delegated prescriber of controlled substances must register with the federal drug enforcement administration.

Restricted Activities

N/A

Entry to Practice Requirements

50-03-01-02

No physician assistant may be employed in the state until the assistant has passed the certifying examination of the national commission on certification of physician assistants or other certifying examinations approved by the North Dakota state board of medical examiners.

To become eligible to practice as a physician assistant in North Dakota, the PA:

1. Must have passed the certifying examination of the National Commission on Certification of Physician Assistants;
2. Must provide evidence of current "good standing" with the National Commission on Certification of Physician Assistants, and;
3. Must secure a contract to provide patient services under the supervision of a doctor of medicine or osteopathy who practices medicine in North Dakota and who is responsible for the performance of the physician assistant.

Practice Settings

N/A

Jurisdiction

New York

Current Status of the Profession

PAs (and specialist assistants) are regulated by the New York State Board of Medicine appointed by the Board of Regents on recommendation of the commissioner for the purpose of assisting the board of regents and the department on matters of professional licensing in accordance with section sixty-five hundred eight of this title (Education Law Article 131 Section 6523) .

6540- Definitions. The term "specialist assistant" means a person who is registered pursuant to this article as a specialist assistant for a particular medical specialty as defined by regulations promulgated by the commissioner of health pursuant to section thirty-seven hundred one of the public health law.

Physician Assistants are legislated under the New York Education Law, §6523, §6530, §6532, §6540 et seq.; New York Public Health Law, §3700 et seq.

Complaints: PAs and physicians are disciplined by the NYS Department of Health's Office (DHO) of Professional Medical Conduct (OPMC). If a complaint is made, the OPMC does a preliminary investigation to see if the accusations have merit or are within the DOH's jurisdiction. At that time the issue may be dismissed or brought to representative physicians, PAs or lay members of the Board of Professional Medical Conduct. This group decides whether the case goes to a formal hearing process or not.

Code of Ethics: The New York State Society of Physician Assistants (NNSSPA) has a code of ethics for PAs (http://www.nysspa.org/download/code_of_ethics.pdf).

Title:

§6545. Construction.

1. Only a person registered as a physician assistant by the department may use the title "registered physician assistant" or the letters "R.P.A." after his name.
2. Only a person registered as a specialist assistant by the department may use the title "registered specialist assistant" or the letters "R.S.A." after his name.

Total PAs: 7,723 (as of Sept. 2010)

Relevant Legislation, Regulations and Bylaws

Education Law, Article 131-B, Physician Assistants and Specialist Assistants
Regulations of the Commissioner- Part 60 Medicine, Physician Assistant, Specialist Assistant and Acupuncture
Public Health Code § 3700- 3704
New York Codes, Rules and Regulations (NYCRR), Title 10, Section 94.2.

Scope of Practice and Authorized Acts

[Article 131-B Education Law](#)

§6542. Performance of medical services.

1. Notwithstanding any other provision of law, a physician assistant may perform medical services, but only when under the supervision of a physician and only when such acts and duties as are assigned to him are within the scope of practice of such supervising physician.
2. Notwithstanding any other provision of law, a specialist assistant may perform medical services, but only when under the supervision of a physician and only when such acts and duties as are assigned to him are related to the designated medical specialty for which he is registered and are within the scope of practice of his supervising physician.
3. Supervision shall be continuous but shall not be construed as necessarily requiring the physical presence of the supervising physician at the time and place where such services are performed.
4. No physician shall employ or supervise more than two physician assistants and two specialist assistants in his private practice.
5. Nothing in this article shall prohibit a hospital from employing physician assistants or specialist assistants provided they work under the supervision of a physician designated by the hospital and not beyond the scope of practice of such physician. The numerical limitation of subdivision four of this section shall not apply to services performed in a hospital.
6. Notwithstanding any other provision of this article, nothing shall prohibit a physician employed by or rendering services to the department of correctional services under contract from supervising no more than four physician assistants or specialist assistants in his practice for the department of correctional services.
7. Notwithstanding any other provision of law, a trainee in an approved program may perform medical services when such services are performed within the scope of such program.
8. Nothing in this article, or in article thirty-seven of the public health law, shall be construed to authorize physician assistants or specialist assistants to perform those specific functions and duties specifically delegated by law to those persons licensed as allied health professionals under the public health law or the education law.

§ 3703. Public Health Code

Special provisions.

1. Inpatient medical orders. A registered physician's assistant employed or extended privileges by a hospital may, if permissible under the bylaws, rules and regulations of the hospital, write medical orders, including those for controlled substances, for inpatients under the care of the physician responsible for his or her supervision. Countersignature of such orders may be required if deemed necessary and appropriate by the supervising physician or the hospital, but in no event shall countersignature be required prior to execution.
2. Withdrawing blood. A registered physician's assistant or certified nurse practitioner acting within his or her lawful scope of practice may supervise and direct the withdrawal of blood for the purpose of determining the alcoholic or drug content therein under subparagraph one of paragraph (a) of subdivision four of section eleven hundred ninety-four of the vehicle and traffic law, notwithstanding any provision to the contrary in clause (ii) of such subparagraph.
3. Prescriptions for controlled substances. A registered physician assistant, in good faith and acting within his or her lawful scope of practice, and to the extent assigned by his or her supervising physician, may prescribe controlled substances as a practitioner under article thirty-three of this chapter, to patients under the care of such physician responsible for his or her supervision. The commissioner, in consultation with the commissioner of education, may promulgate such regulations as are necessary to carry out the purposes of this section.

Section 94.2 of Title 10-NYCRR - Supervision and scope of duties:

(a) A registered physician's assistant or a registered specialist's assistant may perform medical services but only when under the supervision of a physician. Such supervision shall be continuous but shall not necessarily require the physical presence of the supervising physician at the time and place where the services are performed.

(b) Medical acts, duties and responsibilities performed by a registered physician's assistant or registered specialist's assistant must:

(1) be assigned to him by the supervising physician;

(2) be within the scope of practice of the supervising physician; and

(3) be appropriate to the education, training and experience of the registered physician's assistant or registered specialist's assistant.

(c) No physician may employ or supervise more than two registered physician's assistants and two specialist's assistants in his private practice.

(d) No physician may supervise more than six registered physician's assistants or registered specialist's assistants or any combination thereof employed by a hospital.

(e) Prescriptions and medical orders may be written by a registered physician's assistant as provided in this subdivision when assigned by the supervising physician.

(1) A registered physician's assistant may write prescriptions for a patient who is under the care of the physician responsible for the supervision of the registered physician's assistant. The prescription shall be written on the blank form of the supervising physician and shall include the name, address and telephone number of the physician. The prescription shall also bear the name, the address, the age of the patient and the date on which the prescription was written.

(2) Prescriptions for controlled substances not listed under section 80.67 of this Part shall be written on the blank form of the supervising physician and shall include all other information required by Article 28 of the Public Health Law and Part 80 of this Title.

(3) Registered physician's assistants may write prescriptions for those controlled substances listed under section 80.67 of this Part which are not classified as Schedule II controlled substances, provided that such prescriptions shall be written on official New York State forms issued to the physician's assistant.

(4) The registered physician's assistant shall sign all such prescriptions by printing the name of the supervising physician, printing his/her own name and additionally signing his/her own name followed by the letters R.P.A. and his/her State Education Department registration number.

(5) Registered physician's assistants may not write prescriptions for controlled substances listed under section 3306 of the Public Health Law as Schedule II controlled substances.

(6) A registered physician's assistant employed or extended privileges by a hospital may, if permissible under the bylaws, rules and regulations of the hospital, write medical orders, including those for controlled substances, for inpatients under the care of the physician responsible for his supervision. Countersignature of such orders may be required if deemed necessary and appropriate by the supervising physician or the hospital, but in no event shall countersignature be required prior to execution.

(f) A physician supervising or employing a registered physician's assistant or registered specialist's assistant shall remain medically responsible for the medical services performed by the registered physician's assistant or registered specialist's assistant whom such physician supervises or employs.

(g) Qualified individuals may be registered as specialist's assistants in the following categories:

(1) Orthopedic assistant. A specialist's assistant registered in this category is an individual:

(i) who satisfactorily completed a program for the training of orthopedic assistants approved by the New York State Department of Education; or

(ii) who possesses equivalent education, training and experience. Training and experience while in military service which led to an orthopedic specialist, orthopedic cast room technician, or orthopedic clinic technician rating and two years of satisfactory experience as an orthopedic assistant working under the supervision of an orthopedic surgeon within the past five years; or completion of medical corps school and five years of satisfactory experience as an orthopedic assistant working under the supervision of an orthopedic surgeon within the past eight years may be considered equivalent education, training and experience for the purpose of registration in this category.

(2) Urologic assistant. A specialist's assistant registered in this category is an individual:

(i) who satisfactorily completed a program for the training of urologic assistants approved by the New York State Department of Education; or

(ii) who possesses equivalent education, training and experience. Training and experience while in military service which led to an urology surgical technician or urological technician or clinical specialist rating and two years of satisfactory experience as an urologic assistant working under the supervision of an urologist within the past five years; or completion of medical corps school and five years of satisfactory experience as an urologic assistant working under the supervision of an urologist within the past eight years may be considered equivalent education, training and experience for the purpose of registration in this category.

(3) Acupuncture. A specialist's assistant registered in this category shall be employed or supervised only by a physician authorized to administer acupuncture in accordance with the rules and regulations of the New York State Department of Education and is an individual:

(i) who satisfactorily completed a program of training in acupuncture approved by the New York State Department of Education; or

(ii) who possesses equivalent education and training acceptable to the New York State Department of Education; and

(iii) in addition to satisfying the requirements of subparagraphs (i) and (ii) of this paragraph has completed at least five years of experience in the use of acupuncture acceptable to the New York State Department of Education.

(4) Radiologic assistant. A specialist's assistant in this category is an individual:

(i) who is licensed as a radiologic technologist by the New York State Department of Health; and

(ii) who satisfactorily completed a program for the training of radiologic assistants approved by the New York State Education Department.

Restricted Activities

Physician assistants are prohibited from performing certain tasks for specific allied health professions, such as the practice of radiologic technology and the practice of optometry.

Physician assistants may not sign a death certificate; only a licensed physician, duly designated coroner, or medical examiner can sign a death certificate. However, a PA may make a death pronouncement in lieu of the supervising physician.

Entry to Practice Requirements

§6541. Registration.

1. To qualify for registration as a physician assistant or specialist assistant, each person shall pay a fee of one hundred fifteen dollars to the department for admission to a department conducted examination, a fee of forty-five dollars for each reexamination and a fee of seventy dollars for persons not requiring admission to a department conducted examination and shall also submit satisfactory evidence, verified by oath or affirmation, that he or she:
 - a. at the time of application is at least twenty-one years of age;
 - b. is of good moral character;
 - c. has successfully completed a four-year course of study in a secondary school approved by the board of regents or has passed an equivalency test;
 - d. has satisfactorily completed an approved program for the training of physician assistants or specialist assistants. The approved program for the training of physician assistants shall include not less than forty weeks of supervised clinical training and thirty-two credit hours of classroom work. The commissioner is empowered to determine whether an applicant possesses equivalent education and training, such as experience as a nurse or military corpsman, which may be accepted in lieu of all or part of an approved program; and
 - e. in the case of an applicant for registration as a physician assistant, has obtained a passing score on an examination acceptable to the department.
2. The department shall furnish to each person applying for registration hereunder an application form calling for such information as the department deems necessary and shall issue to each applicant who satisfies the requirements of subdivision one of this section a certificate of registration as a physician assistant or specialist assistant in a particular medical specialty for the period expiring December thirtyfirst of the first odd-numbered year terminating subsequent to such registration.
3. Every registrant shall apply to the department for a certificate of registration. The department shall

mail to every registered physician assistant and specialist assistant an application form for registration, addressed to the registrant's post office address on file with the department. Upon receipt of such application properly executed, together with evidence of satisfactory completion of such continuing education requirements as may be established by the commissioner of health pursuant to section thirty-seven hundred one of the public health law, the department shall issue a certificate of registration. Registration periods shall be triennial and the registration fee shall be forty-five dollars.

Infection Control and Barrier Precautions:

Every practicing PA must complete approved coursework or training appropriate to the professional's practice in infection control and barrier precautions, including engineering and work practice controls, to prevent the transmission of the human immunodeficiency virus (HIV) and the hepatitis B virus (HBV) in the course of professional practice.

Infection Control and Barrier Precautions:

Every practicing specialist assistant must complete approved coursework or training appropriate to the professional's practice in infection control and barrier precautions, including engineering and work practice controls, to prevent the transmission of the human immunodeficiency virus (HIV) and the hepatitis B virus (HBV) in the course of professional practice. See [additional information and a list of approved providers](#) for this training.

Applicants Licensed in Another State:

If a PA is or has been licensed/certified in another jurisdiction(s), they must request the licensing authority of the jurisdiction(s) to provide verification of their licensure/certification and must meet all requirements for licensure in New York State.

Limited Permit:

A limited permit allows an individual who has satisfied all requirements for licensure as a registered physician assistant except the examination requirement to practice as a registered physician assistant under appropriate supervision while meeting the requirement. Appropriate supervision is the direct supervision of a currently registered New York State licensed physician.

A limited permit is valid for one year or until notification by the New York State Education Department of denial of the application for licensure. Permits may be extended for one year. ¹⁶

Practice Settings

Public Health Code

§ 3704. Statutory construction. A physician assistant may perform any function in conjunction with a medical service lawfully performed by the physician assistant, in any health care setting, that a statute authorizes or directs a physician to perform and that is appropriate to the education, training and experience of the registered physician assistant and within the ordinary practice of the supervising physician. This section shall not be construed to increase or decrease the lawful scope of practice of a

physician assistant under the education law.

Jurisdiction

Texas

Current Status of the Profession

Physician Assistants are licensed through the Texas Physician Assistant Board, an advisory board to the Texas State board of Medical Examiners, which is established by the Occupations Code, Physician Assistant Licensing Act (see section 204.051).

Complaints and Investigations:

Subchapter F. Complaints and Investigative Information, describes the complaints and investigation processes of the Physician Assistant Board.

Chapters 178-179 of the Texas Administrative Code Rules for Physician Assistants

Title: Occupations Code §204.352

A person not holding license as a PA who holds himself out as a PA, uses PA title or acts as a PA is guilty of a third degree felony.

Total PAs: 4,937 (as of Sept. 2010)

Relevant Legislation, Regulations and Bylaws

Occupations Code, Title 3, Health Professions, Chapter 204, cited as the "Physician Assistant Licensing Act"

Occupations Code, Title 3, Health Professions, Subtitle B. Physicians, Chapter 157. Authority of Physician to Delegate Certain Medical Acts.

Texas Administrative Code, Title 22, Part 9 Chapter 185, Physician Assistants.

Scope of Practice and Authorized Acts

Texas Occupations Code - Section 204.202. Scope Of Practice

(a) The practice of a physician assistant includes providing medical services delegated by a supervising physician that are within the education, training, and experience of the physician assistant.

(b) Medical services provided by a physician assistant may include:

- (1) obtaining patient histories and performing physical examinations;
- (2) ordering or performing diagnostic and therapeutic procedures;
- (3) formulating a working diagnosis;
- (4) developing and implementing a treatment plan;
- (5) monitoring the effectiveness of therapeutic interventions;
- (6) assisting at surgery;
- (7) offering counseling and education to meet patient needs;
- (8) requesting, receiving, and signing for the receipt of pharmaceutical sample prescription medications and distributing the samples to patients in a specific practice setting in which the physician assistant is authorized to prescribe pharmaceutical medications and sign prescription drug orders as provided by

Section 157.052, 157.053, 157.054, 157.0541, or 157.0542 or as otherwise authorized by physician assistant board rule;

(9) signing or completing a prescription as provided by Subchapter B, Chapter 157; and

(10) making appropriate referrals.

(c) The activities listed by Subsection (b) may be performed in any place authorized by a supervising physician, including a clinic, hospital, ambulatory surgical center, patient home, nursing home, or other institutional setting.

(d) A physician assistant's signature attesting to the provision of a service the physician assistant is legally authorized to provide satisfies any documentation requirement for that service established by a state agency.

(e) A physician assistant is the agent of the physician assistant's supervising physician for any medical services that are delegated by that physician and that:

(1) are within the physician assistant's scope of practice; and

(2) are delineated by protocols, practice guidelines, or practice directives established by the supervising physician.

Supervision:

Sec.A204.204.AASUPERVISION REQUIREMENTS. (a) A physician assistant shall be supervised by a supervising physician. A physician assistant may have more than one supervising physician.

The supervising physician oversees the activities of, and accepts responsibility for, medical services provided by the physician assistant.

(b) Supervision of a physician assistant by a supervising physician must be continuous. The supervision does not require the constant physical presence of the supervising physician where physician assistant services are being performed, but, if a supervising physician is not present, the supervising physician and the physician assistant must be, or must be able to easily be, in contact with one another by radio, telephone, or another telecommunication device.

Chapter 185.14-185.15 of the Board Rules details physician supervision.

Sec. 157.0511. PRESCRIPTION DRUG ORDERS. (a) A physician's authority to delegate the carrying out or signing of a prescription drug order under this subchapter is limited to:

(1) dangerous drugs; and

(2) controlled substances to the extent provided by Subsection (b).

(b) A physician may delegate the carrying out or signing of a prescription drug order for a controlled substance only if:

(1) the prescription is for a controlled substance listed in Schedule III, IV, or V as established by the commissioner of public health under Chapter 481, Health and Safety Code;

(2) the prescription, including a refill of the prescription, is for a period not to exceed 90 days;

(3) with regard to the refill of a prescription, the refill is authorized after consultation with the delegating physician and the consultation is noted in the patient's chart; and

(4) with regard to a prescription for a child less than two years of age, the prescription is made after consultation with the delegating physician and the consultation is noted in the patient's chart.

(b-1) The board shall adopt rules that require a physician who delegates the carrying out or signing of a prescription drug order under this subchapter to register with the board the name and license number of the physician assistant or advanced practice nurse to whom a delegation is made. The board may develop and use an electronic online delegation registration process for registration under this subsection.

(c) This subchapter does not modify the authority granted by law for a licensed registered nurse or physician assistant to administer or provide a medication, including a controlled substance listed in Schedule II as established by the commissioner of public health under Chapter 481, Health and Safety Code, that is authorized by a physician under a physician's order, standing medical order, standing delegation order, or protocol.

Restricted Activities

N/A

Entry to Practice Requirements

Occupations Code: SUBCHAPTER D. LICENSE REQUIREMENTS, EXEMPTIONS, AND RENEWAL

Sec. 204.151. LICENSE REQUIRED. A person may not practice as a physician assistant in this state unless the person holds a physician assistant license issued under this chapter.

Acts 1999, 76th Leg., ch. 388, Sec. 1, eff. Sept. 1, 1999.

Sec. 204.152. ISSUANCE OF LICENSE.

(a) The physician assistant board shall issue a license to an applicant who:

- (1) meets the eligibility requirements of Section 204.153;
 - (2) submits an application on a form prescribed by the board;
 - (3) pays the required application fee;
 - (4) certifies that the applicant is mentally and physically able to function safely as a physician assistant;
- and
- (5) submits to the board any other information the board considers necessary to evaluate the applicant's qualifications.

(b) The physician assistant board may delegate authority to medical board employees to issue licenses under this chapter to applicants who clearly meet all licensing requirements. If the medical board employees determine that the applicant does not clearly meet all licensing requirements, the application shall be returned to the physician assistant board. A license issued under this subsection does not require formal physician assistant board approval.

Acts 1999, 76th Leg., ch. 388, Sec. 1, eff. Sept. 1, 1999.

Amended by:

Acts 2005, 79th Leg., Ch. 269, Sec. 2.16, eff. September 1, 2005.

Sec. 204.153. ELIGIBILITY REQUIREMENTS.

(a) To be eligible for a license under this chapter, an applicant must:

- (1) successfully complete an educational program for physician assistants or surgeon assistants accredited by the Committee on Allied Health Education and Accreditation or by that committee's predecessor or successor entities;
- (2) pass the Physician Assistant National Certifying Examination administered by the National Commission on Certification of Physician Assistants;
- (3) hold a certificate issued by the National Commission on Certification of Physician Assistants;
- (4) be of good moral character;
- (5) meet any other requirement established by board rule; and
- (6) pass a jurisprudence examination approved by the physician assistant board as provided by Subsection (a-1).

(a-1) The jurisprudence examination shall be conducted on the licensing requirements and other laws,

rules, or regulations applicable to the physician assistant profession in this state. The physician assistant board shall establish rules for the jurisprudence examination under Subsection (a)(6) regarding:

- (1) the development of the examination;
- (2) applicable fees;
- (3) administration of the examination;
- (4) reexamination procedures;
- (5) grading procedures; and
- (6) notice of results.

(b) In addition to the requirements of Subsection (a), an applicant is not eligible for a license, unless the physician assistant board takes the fact into consideration in determining whether to issue the license, if the applicant:

- (1) has been issued a license, certificate, or registration as a physician assistant in this state or from a licensing authority in another state that is revoked or suspended; or
- (2) is subject to probation or other disciplinary action for cause resulting from the applicant's acts as a physician assistant.

Acts 1999, 76th Leg., ch. 388, Sec. 1, eff. Sept. 1, 1999.

Amended by: Acts 2005, 79th Leg., Ch. 269, Sec. 2.17, eff. September 1, 2005.

Sec. 204.154. EXEMPTIONS FROM LICENSING REQUIREMENT FOR CERTAIN PHYSICIAN ASSISTANTS.

A person is not required to hold a license issued under this chapter to practice as:

- (1) a physician assistant student enrolled in a physician assistant or surgeon assistant educational program accredited by the Committee on Allied Health Education and Accreditation of the American Medical Association or by successor entities as approved and designated by physician assistant board rule; or
- (2) a physician assistant employed in the service of the federal government while performing duties related to that employment.

Acts 1999, 76th Leg., ch. 388, Sec. 1, eff. Sept. 1, 1999.

Practice Settings

The activities listed above in the Scope of Practice section under Subsection (b) may be performed in any place authorized by a supervising physician, including a clinic, hospital, ambulatory surgical center, patient home, nursing home, or other institutional setting.

Jurisdiction

Washington

Current Status of the Profession

PAs are regulated by the Washington Medical Quality Assurance Commission under the Revised Code of Washington (RCW).

Three levels of PAs include: Certified Physician Assistant, Physician Assistant and Physician Assistant-Surgical Assistant.

Definitions: WAC 246-918-005

(1) "Certified physician assistant" means an individual who has successfully completed an accredited and commission approved physician assistant program and has passed the initial national boards examination administered by the National Commission on Certification of Physician Assistants (NCCPA).

(2) "Physician assistant" means an individual who either:

(a) Successfully completed an accredited and commission approved physician assistant program, is eligible for the NCCPA examination and was licensed in Washington state prior to July 1, 1999;

(b) Qualified based on work experience and education and was licensed prior to July 1, 1989;

(c) Graduated from an international medical school and was licensed prior to July 1, 1989; or

(d) Holds an interim permit issued pursuant to RCW 18.71A.020(1).

(3) "Physician assistant-surgical assistant" means an individual who was licensed as a physician assistant between September 30, 1989, and December 31, 1989, to function in a limited extent as authorized in WAC 246-918-230.

Discipline: PAs are subject to discipline under 18.130 RCW (Uniform Disciplinary Act). (§18.71A.025)

Title: N/A

Total PAs: 1,976 (as of Sept. 2010)

Relevant Legislation, Regulations and Bylaws

Revised Code of Washington RCW 18.71A

Washington Administrative Code, Chapter 246-918 WAC

Scope of Practice and Authorized Acts

WAC 246-918-095- Scope

The physician assistant licensed under chapter 18.71A RCW practices under the practice plan and prescriptive authority approved by the commission whether the alternate sponsoring physician or alternate supervising physician is licensed under chapter 18.57 or [18.71](#) RCW.

WAC 246-918-130- Scope- PA

1) A physician assistant may perform only those services as outlined in the standardized procedures reference and guidelines established by the commission. If said assistant is being trained to perform additional procedures beyond those established by the commission, the training must be carried out under the direct, personal supervision of the supervising physician or a qualified person mutually agreed upon by the supervising physician and the physician assistant. Requests for approval of newly acquired skills shall be submitted to the commission and may be granted by a reviewing commission member or at any regular meeting of the commission.

(2) The physician assistant may not practice in a remote site, or prescribe controlled substances unless specifically approved by the commission or its designee.

(3) A physician assistant may sign and attest to any document that might ordinarily be signed by a licensed physician, to include but not limited to such things as birth and death certificates.

(4) A physician assistant and supervising physician shall ensure that, with respect to each patient, all activities, functions, services and treatment measures are immediately and properly documented in written form by the physician assistant. Every written entry shall be reviewed and countersigned by the supervising physician within two working days unless a different time period is authorized by the commission.

(5) It shall be the responsibility of the physician assistant and the supervising physician to ensure that adequate supervision and review of the work of the physician assistant are provided.

(6) In the temporary absence of the supervising physician, the supervisory and review mechanisms shall be provided by a designated alternate supervisor(s).

(7) The physician assistant, at all times when meeting or treating patients, must wear a badge identifying him or her as a physician assistant.

(8) No physician assistant may be presented in any manner which would tend to mislead the public as to his or her title.

Scope- CPA- WAC 246-918-140

(1) A certified physician assistant may perform only those services as outlined in the standardized procedures reference and guidelines established by the commission. If said assistant is being trained to perform additional procedures beyond those established by the commission, the training must be carried out under the direct, personal supervision of the sponsoring physician or a qualified person mutually agreed upon by the sponsoring physician and the certified physician assistant. Requests for approval of newly acquired skills shall be submitted to the commission and may be granted by a reviewing commission member or at any regular meeting of the commission.

(2) A certified physician assistant may sign and attest to any document that might ordinarily be signed by a licensed physician, to include, but not limited to such things as birth and death certificates.

(3) It shall be the responsibility of the certified physician assistant and the sponsoring physician to ensure

that appropriate consultation and review of work are provided.

(4) In the temporary absence of the sponsoring physician, the consultation and review of work shall be provided by a designated alternate sponsor(s).

(5) The certified physician assistant must, at all times when meeting or treating patients, wear a badge identifying him or her as a certified physician assistant.

(6) No certified physician assistant may be presented in any manner which would tend to mislead the public as to his or her title.

Scope- PA-SA- WAC 246-918-250

The physician assistant-surgical assistant who is not eligible to take the NCCPA certifying exam shall:

(1) Function only in the operating room as approved by the commission;

(2) Only be allowed to close skin and subcutaneous tissue, placing suture ligatures, clamping, tying and clipping of blood vessels, use of cautery for hemostasis under direct supervision;

(3) Not be allowed to perform any independent surgical procedures, even under direct supervision, and will be allowed to only assist the operating surgeon;

(4) Have no prescriptive authority; and

(5) Not write any progress notes or order(s) on hospitalized patients, except operative notes.

Prescriptions- PA

WAC 246-918-030

A physician assistant may issue written or oral prescriptions as provided herein when approved by the commission and assigned by the supervising physician(s).

(1) A physician assistant may not prescribe controlled substances unless specifically approved by the commission or its designee. A physician assistant may issue prescriptions for legend drugs for a patient who is under the care of the physician(s) responsible for the supervision of the physician assistant.

(a) Written prescriptions shall include the name, address, and telephone number of the physician or medical group; the name and address of the patient and the date on which the prescription was written.

(b) The physician assistant shall sign such a prescription using his or her own name followed by the letters "P.A."

(c) Written prescriptions for schedule two through five must include the physician assistant's D.E.A. registration number, or, if none, the supervising physician's D.E.A. registration number, followed by the letters "P.A." and the physician assistant's license number.

(2) A physician assistant employed or extended privileges by a hospital, nursing home or other health care institution may, if permissible under the bylaws, rules and regulations of the institution, order

pharmaceutical agents for inpatients under the care of the physician(s) responsible for his or her supervision.

(3) The license of a physician assistant who issues a prescription in violation of these provisions shall be subject to revocation or suspension.

(4) Physician assistants may dispense medications the physician assistant has prescribed from office supplies. The physician assistant shall comply with the state laws concerning prescription labeling requirements.

WAC 246-918-035
Prescription of CPAs

WAC 246-918-125- outlines the requirements a PA must meet to use laser, light, radiofrequency, and plasma devices (hereafter LLRP devices) and delegate the use of LLRP devices to properly trained technicians

RCW 18.71A.100
Pain management rules — Criteria for new rules.

Supervision: WAC 246-918-120

(1) No licensee shall be utilized in a remote site without approval by the commission or its designee. A remote site is defined as a setting physically separate from the sponsoring or supervising physician's primary place for meeting patients or a setting where the physician is present less than twenty-five percent of the practice time of the licensee.

(2) Approval by the commission or its designee may be granted to utilize a licensee in a remote site if:

(a) There is a demonstrated need for such utilization;

(b) Adequate provision for timely communication between the primary or alternate physician and the licensee exists;

(c) The responsible sponsoring or supervising physician spends at least ten percent of the practice time of the licensee in the remote site. In the case of part time or unique practice settings, the physician may petition the commission to modify the on-site requirement providing the sponsoring physician demonstrates that adequate supervision is being maintained by an alternate method. The commission will consider each request on an individual basis;

(d) The names of the sponsoring or supervising physician and the licensee shall be prominently displayed at the entrance to the clinic or in the reception area.

(3) No physician assistant holding an interim permit shall be utilized in a remote site setting.

WAC 246-918-090- No more than 3 licensees supervised per physician

WAC 246-918-150- Working with other non-sponsor physicians

(1) Physician sponsor. A physician assistant may assist or consult with a physician other than his or her sponsor or alternate concerning the care or treatment of the sponsor's patients, provided it is done with the knowledge and concurrence of the sponsor. The sponsor must maintain on file a written statement which instructs the physician assistant as to who may be assisted or consulted and under what circumstances or if no list is possible, then the method to be used in determining who may be consulted or assisted. The sponsor retains primary responsibility for the performance of his or her physician assistant.

(2) Responsibility of a nonsponsoring physician. A nonsponsoring physician utilizing or advising a physician assistant as indicated in section (1) of this rule, shall assume responsibility for patient services provided by a physician assistant if the physician:

(a) Knowingly requests that patient services be rendered by the physician assistant; or

(b) Knowingly consults with the physician assistant concerning the rendering of patient services.

Restricted Activities

RCW 18.71A.060

No health care services may be performed under this chapter in any of the following areas:

(1) The measurement of the powers or range of human vision, or the determination of the accommodation and refractive state of the human eye or the scope of its functions in general, or the fitting or adaptation of lenses or frames for the aid thereof.

(2) The prescribing or directing the use of, or using, any optical device in connection with ocular exercises, visual training, vision training, or orthoptics.

(3) The prescribing of contact lenses for, or the fitting or adaptation of contact lenses to, the human eye.

(4) Nothing in this section shall preclude the performance of routine visual screening.

(5) The practice of dentistry or dental hygiene as defined in chapters 18.32 and [18.29](#) RCW respectively. The exemptions set forth in RCW 18.32.030 (1) and (8), shall not apply to a physician assistant.

(6) The practice of chiropractic as defined in chapter 18.25 RCW including the adjustment or manipulation of the articulations of the spine.

(7) The practice of podiatric medicine and surgery as defined in chapter 18.22 RCW.

Entry to Practice Requirements

RCW 18.71A.020

(1) The commission shall adopt rules fixing the qualifications and the educational and training requirements for licensure as a physician assistant or for those enrolled in any physician assistant training program. The requirements shall include completion of an accredited physician assistant training program approved by the commission and within one year successfully take and pass an examination approved by the commission, if the examination tests subjects substantially equivalent to the curriculum of an accredited physician assistant training program. An interim permit may be granted by the department of health for one year provided the

applicant meets all other requirements. Physician assistants licensed by the board of medical examiners, or the medical quality assurance commission as of July 1, 1999, shall continue to be licensed.

(3) Applicants for licensure shall file an application with the commission on a form prepared by the secretary with the approval of the commission, detailing the education, training, and experience of the physician assistant and such other information as the commission may require. The application shall be accompanied by a fee determined by the secretary as provided in RCW 43.70.250 and 43.70.280. A surcharge of fifty dollars per year shall be charged on each license renewal or issuance of a new license to be collected by the department and deposited into the impaired physician account for physician assistant participation in the impaired physician program. Each applicant shall furnish proof satisfactory to the commission of the following:

(a) That the applicant has completed an accredited physician assistant program approved by the commission and is eligible to take the examination approved by the commission;

(b) That the applicant is of good moral character; and

(c) That the applicant is physically and mentally capable of practicing medicine as a physician assistant with reasonable skill and safety. The commission may require an applicant to submit to such examination or examinations as it deems necessary to determine an applicant's physical or mental capability, or both, to safely practice as a physician assistant.

(4) The commission may approve, deny, or take other disciplinary action upon the application for license as provided in the Uniform Disciplinary Act, chapter 18.130 RCW. The license shall be renewed as determined under RCW 43.70.250 and 43.70.280. The commission may authorize the use of alternative supervisors who are licensed either under chapter 18.57 or 18.71 RCW.

(5) All funds in the impaired physician account shall be paid to the contract entity within sixty days of deposit.

Practice Settings

N/A

Jurisdiction

Australia

Current Status of the Profession

PAs in Australia are not regulated.

In 2009, Queensland Health, initiated a pilot project to introduce 10 PAs into its medical services as part of a demonstration project to study their feasibility. The South Australia government also recruited a handful of American PAs as part of a pilot project (Hooker, et al., 2010).

“Since the completion of the Queensland and South Australian Physician Assistant trials, there has been little talk about Physician Assistants in Australia (The Australian Society of Physician Assistants Incorporated, 2011).”

Total PAs: N/A

Relevant Legislation, Regulations and Bylaws

N/A

Scope of Practice and Authorized Acts

N/A

Restricted Activities

N/A

Entry to Practice Requirements

N/A

A PA program at the University of Queensland began in 2009 and another at James Cook University is expected to begin in 2011. In May 2011, the program at the University of Queensland closed (University of Queensland website, May 11, 2011).

Practice Settings

N/A

Jurisdiction

South Africa

Current Status of the Profession

Clinical Associates must be registered with the Medical and Dental Board of the Health Professions Council of South Africa.

Unprofessional Conduct/Discipline

The Professional Board sets, maintains and applies fair standards of professional conduct and practice in order to effectively protect the interests of the public.

We thus have the power to institute disciplinary proceedings regarding any complaint, charge or allegation of unprofessional conduct against any person registered with Council. If a registered practitioner transgresses the rules as laid down by the Board, the practitioner will be subjected to a disciplinary process in terms of the regulations.

Categories of registration for graduates holding foreign qualifications include;

1. Public Service (Clinical Associate)
2. Education
3. Medical Practitioner/Dentist in Military Service
4. Medical Practitioner/Dentist in Volunteer Services

Total PAs: 9¹⁷ (as of Nov. 2010)

Relevant Legislation, Regulations and Bylaws

Health Professions Act 56 of 1974

No. R. 1206 (2007) Regulations Relating to the Qualifications for Registration of Clinical Associates

Scope of Practice and Authorized Acts (HPSCA, 2011)

Taken from the *Standards Generating Document* (obtained through personal communication):

The Clinical Associate will work under direct and indirect supervision of a qualified medical practitioner by consulting patients and carrying out clinical procedures primarily in the District Health System (DHS) in South Africa. Supervision must be continuous but should not be construed as necessarily requiring the physical presence of the supervising doctor at the time and place that the services are rendered. This will serve to improve communication with and education of the patient and enable medical practitioners to provide comprehensive medical services. Teamwork and communication skills are critical to the functioning of the Clinical Associate.

Medical services provided by the clinical associate may include, but are not limited to:

1. Obtaining patient histories and performing physical examinations
2. Ordering and/or performing diagnostic and therapeutic procedures
3. Interpreting findings and formulating a diagnosis for common and emergency conditions

¹⁷ As of Nov. 2010, there were 207 Student Clinical Associates (HPCSA, 2010).

4. Initiate emergency management in emergency conditions, developing and implementing a treatment plan in common conditions and assisting the medical practitioner in the assessment and management of conditions of the rest of the conditions.
5. Monitoring the effectiveness of therapeutic interventions
6. Assisting at surgery
7. Offering counselling and education to meet patient needs
8. Making appropriate referrals

The Clinical Associate's scope of practice is defined by the context and requirements of district hospitals with particular focus on:

1. Emergency Care
2. Skilled Procedures
3. Inpatient Care

Restricted Activities

N/A

Entry to Practice Requirements

No. R. 1206 (2007) Regulations Relating to the Qualifications for Registration of Clinical Associates

Qualifications for registration.

2. The qualifications required for registration as a clinical associate under the Act, shall be:

Examining Authority and Qualification Abbreviation for Registration

University of Cape Town

Bachelor of Medical Clinical Practice

University of the Free State

Bachelor of Medical Clinical Practice

University of Kwa-Zulu Natal

Bachelor of Medical Clinical Practice

University of Limpopo (Medunsa)

Bachelor of Medical Clinical Practice

University of Pretoria

Bachelor of Medical Clinical Practice

University of Stellenbosch

Bachelor of Medical Clinical Practice

University of Witwatersrand

Bachelor of Medical Clinical Practice

Walter Sisulu University

Bachelor of Medical Clinical Practice

Registration as clinical associate

3.

(1) The registrar may register a person as a clinical associate if such a person has obtained a qualification contemplated by regulation 2.

(2) In the case of an application for registration as a clinical associate based on a qualification not contemplated in these regulations, the applicant must furnish the board with documentary proof of the

contents, duration and evaluation of the education and training which was undergone for such qualification.

(3) If the standard of such education and training is considered satisfactory by the board, such qualification may, in terms of section 15B (l)(e) of the Act, be approved by the board.

(4) The board may, in terms of section 15B(l)(b) of the Act, require an applicant contemplated in sub-regulation (2) to pass an examination in clinical associate before he or she can be registered as a clinical associate.

(5) The registrar may register an applicant contemplated in sub-regulation (2) as a clinical associate, if such applicant's qualification has been approved by the board and, where required, also passed the examination referred to in sub-regulation (3).

Conditions of practice

4. A person registered as a clinical associate in terms of these regulations shall be limited to practice the profession under supervised practice.

Practice Settings

N/A

Jurisdiction

United Kingdom (U.K.)

Current Status of the Profession (UKAPA, 2011)

PAs are not regulated in the U.K. The United Kingdom Association of Physician Assistants (UKAPA) is the body representing and promoting the PA profession in the U.K.

“As was posted on the website, the HPC are no longer accepting applications for aspirant groups for statutory regulation as a result of the current bill going through parliament to look at other ways of regulating profession healthcare groups. As a result, Dr Patricia O'Connor (chair of the PAMVRC), Professor Jim Parle (Chair of the Universities Board) and I wrote to Anne Milton, our local MPs and Andrew Lansley highlighting the issues that lack of statutory regulation for the PA profession would create. As a result, we have a meeting with Anne Milton's officials in Leeds mid-June to discuss this matter and how we can move forward. We will keep you updated with the outcome of this meeting. This is a very positive step in a changing economic and NHS environment.

We have also been in discussion with the Council for Healthcare and Regulatory Excellence (CHRE) who, if the bill goes through parliament regarding statutory regulation, will be responsible for looking at processes and ways to accredit managed voluntary registers for healthcare professions and will also be compiling a process to risk assess professional groups if they feel they need to be statutory regulated. We have commented on their proposed processes and will again update you on the outcomes of our consultations with them.”

A Physician Assistant Managed Voluntary Register (PA MVR) has been established for PAs in the UK. This register is a requirement prior to Statutory Regulation of the profession. The UK Association for Physician Assistants (UKAPA) is the professional body for PAs and is responsible for the PA MVR which is currently held at and administered by St George's University of London.

Code of Conduct: A Code of Conduct created by the PAMVR may be found on PAMVR website.

Total PAs (managed voluntary registry): 34

Relevant Legislation, Regulations and Bylaws

N/A

Scope of Practice and Authorized Acts (UKAPA, 2011)

American PAs are able to practice in the UK as a result of a clause within the British General Medical Council's guidance on *Good Medical Practice*.

Delegation is discussed within paragraph 54 as follows:

Delegation involves asking a colleague to provide treatment or care on your behalf. Although you will not be accountable for the decisions and actions of those to whom you delegate, you will still be responsible for the overall management of the patient, and accountable for your decision to delegate. When you delegate care or treatment you must be satisfied that the person to whom you delegate has the qualifications, experience, knowledge and skills to provide the care or treatment involved. You must always pass on enough information about the patient and the treatment they need.

PAs are *currently unable* to prescribe medications in the UK.

In the hospital setting, consultants are able to delegate abilities to the PAs they supervise. For instance, PAs

working in the A & E might have the ability to sign for medications administered in the hospital. These would be for those medications required in the context of the patient's A & E visit (IV fluids, analgesia, etc.). These delegated tasks are customised to the individual PA as their supervising physician deems appropriate. For medications to be taken home or in house hospital drug charts, a co-signature might be obtained by a registrar or consultant. These delegated tasks are customised to the individual PA as their supervising physician deems appropriate.

Scope of Practice (PAMVR)

PAs are educated in the medical model and work as members of the healthcare and more specifically the medical team.

Education and Experience

PAs will complete a degree-level academic programme of no less than 90 weeks, preferably followed by a period of internship in an approved clinical training setting. This foundation will enable Physician Assistants to practise as part of the clinical team, within a range of primary and secondary healthcare settings.

A PA can;

- Formulate and document a detailed differential diagnosis, having taken a history and completed a physical examination
- Develop a comprehensive patient management plan in light of the individual characteristics, background and circumstances of the patient; maintain and deliver the clinical management of the patient on behalf of the supervising physician while the patient travels through a complete episode of care;
- Perform diagnostic and therapeutic procedures and prescribe medications (subject to the necessary legislation); and
- Request and interpret diagnostic studies and undertake patient education, counselling and health promotion.

It is essential to the medical model, to which the PA works, that their consultations and interventions are responsive to the individual patient and their situation, rather than mechanistic – that is, they should apply their knowledge and skills in a patient-centred way rather than sticking closely to predetermined protocols.

Restricted Activities

N/A

Entry to Practice Requirements (PAMVR, 2011)

Requirements for entry into the PAMVR:

UK Applicants

Physician Assistants must meet the core competencies and skills as detailed in the Competence and Curriculum Framework for the Physician Assistant (Department of Health, 2006). This will be demonstrated through **proof of graduation** from a recognised UK PA programme and **proof of passing the UK National PA Exam**.

Copies of original certificates must be submitted with the application. After graduation, PAs are expected to maintain and log 40 hours of Continuing Professional Development (CPD) per year.

UK PAs applying to the register must include:

- Photocopies of certificates showing proof of graduation AND proof of passing the National Exam
- Self-disclosure of past and present criminal activity, and/or actions taken by competent authority for the restriction or prohibition of ability to practice in a medical setting
- Self-disclosure of health status (A)

- Self-disclosure of 25 hours of CPD activity in the past 3 years (recent graduates exempt) (B)

EU Applicants

Physician Assistants must meet the core competencies and skills as detailed in the Competence and Curriculum Framework for the Physician Assistant (Department of Health, 2006). This will be demonstrated through proof of graduation from a recognized PA Programme. Original certificates must be submitted. Copies will not be accepted.

EU PAs applying to the register must include:

- Photocopies of certificates showing proof of graduation from a recognized PA programme
- Proof of an English language capability in both the spoken and written form consistent with understanding and conveying complex medical terms and concepts (IELTS) if English is not your first language. Please contact the PA register administrator for further information.
- Self-disclosure of past and present criminal activity, and/or actions taken by competent authority for the restriction or prohibition of ability to practice in a medical setting
- Self-disclosure of health status (A)
- Self-disclosure of 25 hours of CPD activity in the past 3 years (B)

Non-EU/International Applicants

Physician Assistants must meet the core competencies and skills as detailed in the Competence and Curriculum Framework for the Physician Assistant (Department of Health, 2006). This will be demonstrated through proof of graduation from a recognized PA Programme. Original certificates are required. Copies will not be accepted.

Non-EU / International PAs applying to the register must include:

- Photocopies of certificates showing proof of graduation from a recognized PA programme
- Proof of an English language capability in both the spoken and written form consistent with understanding and conveying complex medical terms and concepts (IELTS) if English is not your first language. Please contact PA register administrator for further information.
- Evidence of a valid work permit / Certificate of Sponsorship or Indefinite Leave to Remain
- Self-disclosure of past and present criminal activity, and/or actions taken by competent authority for the restriction or prohibition of ability to practice in a medical setting
- Self-disclosure of health status (A)
- Self-disclosure of 25 hours of CPD activity in the past 3 years (B)

Grandparenting

This is a **transitional category** and will cease upon implementation of a statutory registration. Physician Assistants must meet the core competencies and skills as detailed in the Competence and Curriculum Framework for the Physician Assistant (Department of Health, 2006).

Requirements for the Grandparenting category applicant are:

- Current listing on the UK Association of Physician Assistants voluntary list
- Any certificates that may be required (in the event they were not transferred over with the UKAPA voluntary list) must be original certificates
- Complete historical record of employment as a PA in the UK
- Evidence of a valid work permit, Certificate of Sponsorship or Indefinite Leave to Remain (copies acceptable)
- Self-disclosure of past and present criminal activity, and/or actions taken by competent authority for the restriction or prohibition of ability to practice in a medical setting

- Self-disclosure of health status (A)
- Self-disclosure of 25 hours of CPD activity in the past 3 years (B)

There are currently three University programs in the UK training PAs: Birmingham, St. George's of London and Wolverhampton. Graduates receive a Post-Graduate Diploma.

PA programs in the U.K. are 2 years in length and in the third year PAs are working in a clinical environment, termed a "probationary year". Each program is competency based in accordance with the National Health Service (NHS) Competence and Curriculum Framework

(http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4139317).

A National Examination Board also exists to administer a single national assessment of clinical competence to be completed prior to the 12-month "probationary period".

Practice Settings (UKAPA, 2011)

PAs work in a wide variety of practice settings, including:

- GP Surgery
- Inpatient Ward of Hospital
- Medical Assessment Unit
- Accident and Emergency
- Intensive Care Unit (adult and paediatric)
- Outpatient Department of Hospital
- Walk in Centre / Out of Hours care
- Specialty Outpatient Surgery
- Psychiatry Clinic

SECTION III

Regulation of Physician's Assistants under the
Regulated Health Professions Act (RHPA), 1991:

Jurisprudence Review

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Objective:

This jurisprudence review explores legal cases relevant to the Physician Assistant (PA) profession, to support a determination of the need for regulation of PAs under the *Regulated Health Professions Act, 1991 (RHPA)*. More specifically, this review aims to provide insight into the risk posed to the public by PAs. Statutes and regulations are not included in this review, as they are discussed in detail in a jurisdictional review of the profession. This review was conducted between August 19, 2011 and September 19, 2011.

Search Methodology:

HPRAC used a snowball search process in order to identify the majority of the PA cases for this review. This process was accomplished as follows. Dr. Jeffrey G. Nicholson is and has been throughout his career a leader in the physician assistant profession providing local, state and national contributions to PA education, employment, and research in the United States. He currently serves in numerous leadership positions and on numerous boards. He is particularly well known as an expert on the topic of PA liability claims. A research paper authored by Nicholson entitled; *Physician Assistant Medical Practice in the Health Care Workforce: A Retrospective Study of Medical Malpractice and Safety, Comparing Physician Assistants to Physicians and Advanced Practice Nurses*¹, published in 2008, makes reference to numerous profound court cases involving PAs. HPRAC felt it was appropriate to extract the major/relevant cases from this research review and use them in our review.

All of the cases in this review are from jurisdictions in the U.S. As explained in more detail in the jurisdictional review, the U.S. is the only country where the PA profession is highly developed, as it is regulated in all 50 U.S. states. While two provinces in Canada (Manitoba and New Brunswick) do have PA regulation, New Brunswick is still in it's infancy with just two PA registrants (personal communication, August 10, 2011). As a result, a separate completed review did not find any relevant Canadian PA cases and therefore Canadian jurisdictions are not included in this review. Internationally, the maturity of PA regulation is similar to that of Canada.

While the above strategy looked at court level cases, HPRAC was also interested in reviewing the disciplinary decisions of the governing regulatory bodies of PAs. For this, HPRAC utilized the New York State Department of Health, Office of Professional Medical Conduct website containing public documents regarding professional misconduct and discipline actions taken against Registered PAs. HPRAC also utilized the Arizona Regulatory Board of Physician Assistants website to access recent Board disciplinary actions. Due to time restraints and availability and accessibility of information, New York and Arizona were the only jurisdictions where this search strategy was used. However, HPRAC feels that the topics of the cases reviewed, reflect the overall professional misconduct charges and disciplinary actions in other regulated PA jurisdictions.

¹ Dr. Jeffrey G. Nicholson's biography and research may be found on his website at <http://www.paexperts.com/>.

Summary of Findings

Cases retrieved from the search methodology described above yielded 12 pertinent cases (5 court cases and 7 decisions²). Topics relevant to risk of harm, supervision, standard of care and regulation of PAs include:

- failure to accurately diagnose, allegedly leading to patient injuries (see *Cox v Primary and Urgent Care Clinic et. al.*);
- providing care below the proper standard of care (see *Macdonald v United States of America*);
- failure to properly supervise PAs (see *Macdonald v United States of America*);
- sexual misconduct (see *Andrews and Andrews v United States of America and New York State Board for Professional Medical Conduct v William Race*);
- unlicensed PA performing medical services while portraying himself as a certified PA (see *Khan v Medical Board of California*);
- revocation of license on the grounds of professional misconduct, for the conviction of committing an act constituting a crime under New York State Law (see *New York State Board for Professional Medical Conduct v Robyn Marie Emery*);
- inappropriate/excessive prescribing including: providing patients/family members with controlled substances without adequate medical indication for the prescriptions, without maintaining a medical record for the patient and in exchange for a portion of the controlled substance prescription (see *New York State Board for Professional Medical Conduct v Jennifer DeFilippo, Arizona Regulatory Board of Physician Assistants v Robert Mitchelson and Arizona Regulatory Board of Physician Assistants v Jef B. Esquerra*);
- practicing outside of the scope of practice, i.e. without proper supervision (see *New York State Board for Professional Medical Conduct v Garth E. Brink*);
- inability to perform medical services due to PA's medical condition (see *Arizona Regulatory Board of Physician Assistants v Dale J. Bingham*); and
- disciplinary action taken in one state leading to sanctions in another state based on prior disciplinary sanctions (see *Arizona Regulatory Board of Physician Assistants v Robert Mitchelson*).

It is evident from the findings above that the PA profession presents a risk of harm to the public. From using their power to engage in a sexual relationship with a patient to misdiagnosis and providing sub-standard care particularly regarding prescribing medications, the risks are evident according to the case law and disciplinary actions reviewed.

***Please see the case descriptions below for further details of each reviewed case.**

² Updated June and July 2012 based on additional information.

Case Descriptions

Title	<i>Melissa Michelle Cox v Primary and Urgent Care Clinic et. al.</i>
Court	Supreme Court of Tennessee, at Nashville
Citation	<i>Cox v Primary and Urgent Care Clinic et. al., 313 SW 3d 240 (Tenn Sup Ct 2010)</i>
Relevance	Standard of Care
Summary	<p>OPINION: We granted permission to appeal in this case to address the standard of care that applies to a physician assistant in a medical malpractice case. The plaintiff sued for injuries she allegedly suffered as a result of physician assistant Michael Maddox's failure to diagnose her condition accurately. The plaintiff did not sue Maddox, but sued the clinic which he owned and in which he practiced and Dr. Austin Adams, Maddox's supervising physician. The defendants filed a joint motion for summary judgment, supported by their testimony that (1) Maddox did not violate the standard of care applicable to physician assistants and (2) Dr. Adams did not violate the standard of care applicable to physicians. The plaintiff responded with her cardiologist's testimony that Maddox violated the standard of care applicable to primary care physicians. The cardiologist testified that he was not familiar with physician assistants or their supervision. The trial court granted the defendants' motion for summary judgment on the basis that the plaintiff had failed to establish that Maddox violated the professional standard of care applicable to him. The Court of Appeals reversed the trial court, holding that the standard of care applicable to physician assistants is the same as that applicable to physicians. We reverse the Court of Appeals and hold that the standard of care applicable to physician assistants is distinct from that applicable to physicians. The trial court's summary judgment in favour of the defendants is reinstated, and the case is dismissed.</p>

Title	<i>Debra Macdonald v United States of America</i>
Court	United States District Court for the Middle District of Georgia, Valdosta Division
Citation	<i>Macdonald v United States of America</i> , 853 F Supp 1430 (MD Ga 1994)
Relevance	Standard of Care, Supervision
Summary	<p>PROCEDURAL POSTURE: Plaintiff, a dependent of an active duty member of the United States Air Force (patient), sought a judgment against defendant, the United States, in an action for medical negligence under the Federal Tort Claims Act, 28 U.S.C.S. § 1346(b).</p> <p>OVERVIEW: The patient was treated by physician's assistants at the Moody Air Force Base (AFB) for a hiatal hernia with reflux for several months. When the patient went to the AFB hospital complaining of upper abdominal pain, a physician determined that the patient was constipated and gave her a laxative. When the patient refused to go home, an EKG was conducted, which revealed that the patient was suffering an evolving myocardial infarction. Because the AFB was not capable of providing thrombolytic therapy, the patient was transferred to another hospital. By the time thrombolytic therapy was approved by the other hospital, the patient had suffered extensive heart damage. The patient filed a negligence action against the United States for failure to diagnose her heart condition and hypothyroidism, and for failure to supervise physician's assistants or to provide thrombolytic therapy. After a bench trial, the court found that the United States was negligent for failing to diagnose the patient's hypothyroidism. However, the court held that the United States negligently failed to diagnose the patient's heart disease, to supervise its physician's assistants, and to provide thrombolytic therapy.</p> <p>OUTCOME: After a bench trial, the court held that the United States did not breach its duty of care in failing to diagnose the patient's hypothyroidism but that it had negligently failed to diagnose and treat the patient's heart condition. A hearing was scheduled on the issue of damages to be awarded to the patient.</p>

Title	<i>Sandra B. Andrews and Kenneth M. Andrews v United States of America</i>
Court	Unites States Courts of Appeals for the Fourth Circuit
Citation	<i>Andrews and Andrews v United States of America</i> , 732 F.2d 366 (4 th Cir 1984)
Relevance	Risk of Harm- Sexual Abuse, Supervision
Summary	<p>PROCEDURAL POSTURE: Appellant United States sought review of the judgment of the United States District Court for the District of South Carolina that held in favour of appellee injured patient and her spouse in a medical malpractice action.</p> <p>OVERVIEW: An injured patient received psychological care from a military physician's assistant while her husband was in the United States Navy. The physician's assistant eventually persuaded the injured patient to have sex with him, allegedly as part of her treatment. The injured patient brought an action against the government for medical malpractice and prevailed in the district court. The United States appealed, and the court affirmed. The court held that the government could not be liable for the acts of the physician's assistant in coercing the injured patient to have sex because the actions were outside the scope of his employment. However, the acts of the physician's assistant's superiors in negligently supervising him following reports of improper contact did occur in the scope of their employment. The Federal Tort Claims Act, specifically 28 U.S.C.S. § 1346(b), allowed such claims. The court also found that the action was a medical malpractice action, not an assault and battery, and the action was not barred by 28 U.S.C.S. § 2680(h).</p> <p>OUTCOME: The court affirmed the judgment for the injured patient and her husband.</p>

Title	<i>Hameed A. Khan v Medical Board of California</i>
Court	Court of Appeal of California, Second Appellate District, Division Two
Citation	<i>Khan v Medical Board of California</i> , 12 Cal App 4th 1834 (App Ct 1993)
Relevance	Risk of Harm- Unlicensed PA, PA Title
Summary	<p>CALIFORNIA OFFICIAL REPORTS SUMMARY A physician employed an unlicensed medical assistant to assist in treating patients. The physician also advertised that his sister, who was licensed to practice medicine in Pakistan but not in California, worked for his clinic, and he advertised that the unlicensed employee was a "physician's assistant certified." A panel of the Division of Medical Quality of the Medical Board of California found that the physician had violated Bus. & Prof. Code, § 2271 (false or misleading advertising), Bus. & Prof. Code, § 2234 (unprofessional conduct), and Bus. & Prof. Code, § 2264 (employment of unlicensed person). The physician's approval to supervise physician's assistants was revoked, and his physician's and surgeon's certificate was also revoked, but the revocation was stayed for three years during which time he was placed on probation. The physician's petition for a writ of administrative mandamus was denied. (Superior Court of Los Angeles County, No. BS008682, William W. Huss, Judge.)</p> <p>The Court of Appeal affirmed. It held that Bus. & Prof. Code, § 2264, does not, as the physician asserted, merely prohibit the aiding or abetting of an unlicensed person to practice medicine, but may be violated either by employing an unlicensed person, or by aiding or abetting an unlicensed person. It also held that intent or guilty knowledge is not an element of a violation of Bus. & Prof. Code, § 2264. It further held that Bus. & Prof. Code, § 2271, can be violated through negligence. (Opinion by Nott, J., with Boren, P. J., and Fukuto, J., concurring.)</p>

Title	<i>Clarence N. Paris and Ethel Paris v Michael Kreitz JR., Dr. Leland S. Averett JR., and High Point Memorial Hospital, Incorporated</i>
Court	Court of Appeals of North Carolina
Citation	<i>Paris and Paris v Kreitz, Jr., Averett, Jr., and High Point Memorial Hospital, Incorporated</i> , 75 N.C. App. 365 (App Ct 1985)
Relevance	Standard of Care, Supervision
Summary	<p>PROCEDURAL POSTURE: Plaintiffs, patient and associated individuals, sought review of a judgment of the Superior Court, Randolph County (North Carolina), which entered a directed verdict in favour of defendants, doctor and hospital, in a medical malpractice action seeking punitive damages for gross negligence or wanton or wilful conduct by defendants.</p> <p>OVERVIEW: Plaintiffs, patient and associated individuals, initiated a medical malpractice action against defendants, doctor and hospital, seeking punitive damages for defendants' gross negligence or wanton or wilful conduct. The trial court entered a directed verdict in favour of defendants, and plaintiffs sought review. The court held that in order to recover punitive damages, plaintiffs must have proven that defendants' negligence was gross or wanton. The court held that a physician was an acceptable expert witness with regard to the standard of care for nurses. The court held that, although counsel was permitted liberal cross-examination, plaintiffs' counsel's questions had no basis in the evidence of the record. Pursuant to N.C. Gen. Stat. § 90-21.12, a health care provider was subject to the standards of practice among members of the same health care profession. The court determined that defendant physician assistant was not subject to the same standard as defendant doctor. The court affirmed a judgment of the trial court.</p> <p>OUTCOME: The court affirmed a judgment of the trial court, which entered a directed verdict in favour of defendants, doctor and hospital, in a medical malpractice action initiated by plaintiffs, patient and associated individuals. The court held that physician was an acceptable expert witness with regard to the standard of care for nurses. Plaintiffs failed to establish requisite negligent wanton or wilful conduct to recover punitive damages.</p> <p>EXCERPT FROM SYLLABUS: Plaintiffs instituted this suit by filing a complaint on 3 August 1982. Plaintiffs alleged that Michael Kreitz (PA) was negligent in that (1) he failed to exercise reasonable care and due diligence, (2) he attempted to diagnose Mr. Paris' problem without proper medical training, (3) his diagnosis was obviously incorrect, (4) he failed to consult a physician or other qualified medical professional in making his diagnosis, and (5) he prescribed improper treatment. Plaintiffs alleged that Dr. Averett was negligent in that (1) he failed to exercise reasonable care and due diligence, (2) he failed to attend personally to Mr. Paris, (3) he permitted defendant Kreitz to diagnose and prescribe treatment for Mr. Paris, and (4) he failed to treat Mr. Paris properly or promptly. Plaintiffs also alleged as a basis for punitive damages against Dr. Averett, that his</p>

negligence amounted to a reckless disregard of Mr. Paris' rights and safety. Plaintiffs alleged that the Hospital was negligent in that (1) it failed to adopt or enforce accepted rules and procedures regulating the practice of physician's assistants in emergency cases, (2) it failed to assure that plaintiff was seen and treated by a licensed and trained physician, and (3) the Hospital's agent, Nurse Garrett, failed to see that Mr. Paris received required medical treatment by a trained physician though she knew that he required treatment by a trained physician. Plaintiffs claimed that the negligence of defendant was the proximate cause of Mr. Paris' leg amputation and of the physical, mental and emotional suffering that accompanied it.

In a second count, Ethel Paris alleged that the amputation had adversely affected her relationship with Mr. Paris that she had been deprived of love, affection and conjugal relations, and that defendants' negligence was the proximate cause of her loss. Plaintiffs claimed compensatory damages in excess of \$ 10,000 and punitive damages.

Defendants Kreitz and Averett filed a response and defendant Hospital filed a separate response. Both responses denied the material allegations of the complaint. The matter was tried before a jury. Both sides presented expert testimony, discussed *infra*. Having found no negligence, the jury did not reach the issues of proximate cause or damages. Plaintiffs' motions for judgment n.o.v. and for a new trial were denied and plaintiffs appealed. Appeals Court found no abuse of discretion in the trial court's denial of plaintiff's motion for a new trial.

Title	<i>New York State Board for Professional Medical Conduct v William Race</i>
Board	New York State Board for Professional Medical Conduct
Citation	<i>New York State Board for Professional Medical Conduct v William Race</i> , 02-2221, online: New York State Department of Health Office of Professional Misconduct http://w3.health.state.ny.us/opmc/factions.nsf/58220a7f9eeaaafab85256b180058c032/6cdace91dfd2f62a85256b110064091c?OpenDocument
Relevance	Risk of Harm-Sexual Misconduct, Professional Misconduct
Summary	<p>William Race, Registered Physician Assistant (RPA), provided medical care to the patient for the duration of nearly two years. RPA attempted to initiate a social/sexual relationship with the patient. RPA was charged with moral unfitness, harassing, abusing or intimidating a patient and revealing of personally identifiable facts.</p> <p>License of the RPA was suspended for a period of 12 months (3 months actual suspension and 9 months stayed suspension). RPA was placed on probation for a period of three years, commencing with the period of stayed suspension. During probationary period. RPA must only examine or treat a female patient in the presence of a chaperone.</p>

Title	<i>New York State Board for Professional Medical Conduct v Robyn Marie Emery</i>
Board	New York State Board for Professional Medical Conduct
Citation	<i>New York State Board for Professional Medical Conduct v Robyn Marie Emery</i> , Order 11-26, online: New York State Department of Health Office of Professional Misconduct http://w3.health.state.ny.us/opmc/factions.nsf/0522fed2dd2160ff852568c0004e894a/dea3381a0c2bba878525765500585117?OpenDocument
Relevance	Risk of Harm- Public Safety, Professional Misconduct
Summary	<p>Robyn Marie Emery was authorized to provide medical services as a PA in the state of New York. In May 2009. Emery was found guilty to the charge of unlicensed driver and attempted criminal possession of a controlled substance in the seventh degree. Emery was sentenced on both convictions by the Newfane Town Court of Niagara Country in New York State. Approximately a year later, Emery pled guilty to violating her probation based on continued illegal drug use and sentenced to 90 days incarceration.</p> <p>Emery was charged by the Board with Professional Misconduct. As a penalty, the Hearing Committee determined that a revocation of Emery's PA license would best serve to protect the public interest.</p>

Title	<i>New York State Board for Professional Medical Conduct v Jennifer DeFilippo</i>
Board	New York State Board for Professional Medical Conduct
Citation	<i>New York State Board for Professional Medical Conduct v Jennifer DeFilippo</i> , Order 10-01, online: New York State Department of Health Office of Professional Misconduct http://w3.health.state.ny.us/opmc/factions.nsf/0522fed2dd2160ff852568c0004e894a/8308ad2b58fd3b2d8525763300602ae6?OpenDocument
Relevance	Prescribing, Standard of Care, Professional Misconduct
Summary	<p>Jennifer DeFilippo, an RPA, was sentenced to three years probation in May 2009, for forgery in the third degree by the Johnston Town Court of Fulton County, New York, for writing a prescription for Lortab, a controlled substance, for a patient in exchange for a portion of the drug. From in or around September 2007 to November 2008, DeFilippo provided patients with controlled substances without adequate medical indication for the prescriptions and without maintaining a medical record for the patients. In April 2008, DeFilippo failed to provide the proper standard of care to a patient suffering from abdominal pain. In September 2005, DeFilippo, also provided medical care below the standard of care to a patient suffering from a high pressure injection finger injury.</p> <p>For all of the above allegations, DeFilippo was charged by the Board with twenty specifications of professional misconduct. Her license was suspended for 24 months stayed and she was placed on probation for five years subject to terms of probation. She was also charged with a fine.</p>

Title	<i>New York State Board for Professional Medical Conduct v Garth E. Brink</i>
Board	New York State Board for Professional Medical Conduct
Citation	<i>New York State Board for Professional Medical Conduct v Garth E. Brink</i> , Order 00-43, online: New York State Department of Health Office of Professional Misconduct http://w3.health.state.ny.us/opmc/factions.nsf/0522fed2dd2160ff852568c0004e894a/61e7a76327a7129b85256a4a0047c60e?OpenDocument
Relevance	Practicing outside scope of practice (without supervision), Standard of Care
Summary	<p>Garth E. Brink a licensed PA provided care below the proper standard of care and practiced beyond the scope of practice permitted by law, by evaluating and treating patients without proper physician supervision.</p> <p>The Board sanctions included a three year “stayed” suspension, on condition that Brink, comply with the terms of probation.</p>

Title	<i>Arizona Regulatory Board of Physician Assistants v Robert Mitchelson</i>
Board	Arizona Regulatory Board of Physician Assistants
Citation	<i>Arizona Regulatory Board of Physician Assistants v Robert Mitchelson</i> , Order PA-07-0052A, online: Arizona Regulatory Board of Physician Assistants http://azpa.gov/GLSuiteWeb/Repository/0/0/5/0/0b6b85c0-ce99-4297-bc82-b75f1d3426d8.pdf
Relevance	Prescribing, Practising Without Delegation and Treating a Family Member
Summary	<p>A complaint from the patient's primary care physician was initiated against Mitchelson for his failure to maintain adequate records, inappropriate prescribing (including: prescribing controlled substances to an immediate family member) prescribing prescription medication without delegation and failure to maintain a log of all schedule II and III administered medications, all while treating his wife..</p> <p>Mitchelson was charged with unprofessional conduct in three counts and sentenced to 10 years probation with "stayed revocation" (meaning that any failure to comply with the terms of probation is cause for revocation). Mitchelson will be subject to practice limitations and chart reviews as terms of probation.</p>

Title	<i>Arizona Regulatory Board of Physician Assistants v Dale J. Bingham</i>
Board	Arizona Regulatory Board of Physician Assistants
Citation	<i>Arizona Regulatory Board of Physician Assistants v Dale J. Bingham</i> , Order PA-10-0022A, online: http://azpa.gov/GLSuiteWeb/Repository/0/0/9/4/b496e255-b051-4b71-91cd-49e625493844.pdf
Relevance	Risk of Harm-Public Safety
Summary	<p>Dale J. Bingham, a licensed PA, recognized that he has a medical condition that may limit his ability to safely engage in the performance of health care tasks. As a result, the Executive Director determined that a consent agreement was needed to mitigate imminent danger to the public health and safety.</p> <p>Bingham's practice was limited in that he shall not perform health care tasks and may not prescribe any form of treatment until he applies to the Board for permission.</p>

Title	<i>Arizona Regulatory Board of Physician Assistants v Jef B. Esquerra</i>
Board	Arizona Regulatory Board of Physician Assistants
Citation	<i>Arizona Regulatory Board of Physician Assistants v Jef B. Esquerra</i> , Order PA-09-0029A, online: http://azpa.gov/GLSuiteWeb/Repository/0/0/7/4/1d2ff5cc-fdee-4d1f-ad4c-5ea9e58bace5.pdf
Relevance	Prescribing and Labour Mobility
Summary	<p>Jef B. Esquerra, is a licensed P.A. in Arizona. Esquerra treated a patient in Utah from 2001 to 2005 for mental illness and chronic pain. Despite being aware of the patient's past alcohol abuse issues, he proceeded to prescribe excessive amounts of Fentanyl, Alprazolam and ethanol. The patient died in 2005, and the autopsy revealed mixed drug poisoning involving the medications prescribed by Esquerra. The Utah Board found that Esquerra failed to follow chronic pain management guidelines and to produce a "delegation of services agreement with his supervising physician from 2001 to 2005. As a result, Esquerra surrendered his Utah license based upon the disciplinary sanctions imposed by the Board for unprofessional conduct.</p> <p>Subsequently, the Arizona Regulatory Board of Physician Assistants, charged Esquerra with unprofessional conduct based on the sanctions he received in state of Utah. Esquerra was issued a Decree of Censure, 15 year probation with terms including the prohibition of prescribing, administering and dispensing any controlled substances.</p>

SECTION IV

Regulation of Physician's Assistants under the
Regulated Health Professions Act (RHPA), 1991:

Literature Review

A Literature Review on Physician Assistants

**Prepared by the Planning Unit
Health System Planning, Research &
Analysis Branch
Health System Strategy & Policy Division
Ministry of Health and Long-Term Care
August 2011**

Please note that this Rapid Literature Review is a summary of information from other sources, not a representation of the policy position or goals of the Ministry of Health and Long-Term Care. If material in the review is to be referenced, please cite the original, primary source, rather than the review itself.

OBJECTIVES

The requestor's stated objectives were to investigate 1) the impact of physician assistants on patient safety and risk of harm, 2) the degree of autonomy of practice granted to PAs, and 3) the degree to which PAs have been shown to collaborate with other practitioners in teams.

Due to the evolving nature of the physician assistant role since its inception, the content of this rapid literature review is focused on research published within the past ten years, though frequently cited papers from earlier years have been included.

A prior review – #114 A RLR on the Impact of Physician Assistants – may also be of relevance; section 1 (Safety) of this review is an update of a section from that review, and is based heavily on it.

SEARCH METHODS FOR IDENTIFICATION OF STUDIES

Individual peer-reviewed articles and review articles were identified through the Ontario Ministry of Health and Long-Term Care's computerized library database, PubMed, and Google Scholar. Grey literature was identified through Google and relevant government websites. The search was limited to English sources and therefore may not capture the full extent of initiatives in non-English speaking countries.

The Medical Subject Heading (MeSH) term "Physician Assistants" was used in combination with the following keywords to identify relevant articles and documents for this review: "mid-level", "midlevel", "non-physician", "provider", "practitioner", "safety", "risk", "liability", "malpractice", "autonom*", "scope of practice", "collaborat*", "team", and "multidisciplinary"

A total of 66 references were identified and cited in this review: eight review articles, 51 original research papers from peer-reviewed journals, and seven documents from the grey literature. Table 2 in the Appendix consists of a summary table with details for each of the sources cited in the review. In total, the searching for relevant material and the writing of this review took approximately four weeks to complete by one person.

SUMMARY OF MAIN FINDINGS

- The research literature on physician assistants (PAs) is sparse, and suffers from a series of limitations including small sample sizes, a lack of randomized controlled trials, and poor descriptions of study settings. This review therefore presents the best available research evidence, but given these limitations, caution should be taken in interpreting the findings.
- A large proportion of the identified articles (the majority of which originated from the US) grouped PAs together with nurse practitioners (NPs) and labelled them both mid-level providers (MLPs).

Safety

- Several reviews and individual studies have predominantly found that care provided by PAs/MLPs is equivalent to that provided by physicians in terms of safety.

- The studies have generally shown that use of PAs is not associated with increases in mortality, complications, adverse event, readmissions, transfers to ICU, or malpractice claims, though there are a small number of studies that show worse outcomes with PAs/MLPs.

Autonomy

- The information available suggests that autonomy of practice of PAs varies considerably, and can depend on jurisdiction, practice setting, experience, training, competence, and employers' requirements.
- In general, PAs provide a range of diagnostic and therapeutic services which vary by practice setting (e.g., surgery, emergency medicine, etc.). These include physical examination, diagnosing and treating illnesses, ordering and interpreting tests, counselling on preventive healthcare, assisting in surgery, writing prescriptions, education, research, and administrative services.

Collaboration

- Few articles identified during the search for this rapid literature review contained details about collaborative relationships involving PAs.
- The most common form of collaboration is between a PA and a single supervising physician, or small group practice.
- In addition, several examples of multidisciplinary teams including PAs were identified in the literature; these varied greatly in terms of team make-up and practice setting, and are described in detail in Table 1 in the review.

DESCRIPTION OF THE FINDINGS

Limitations of the Literature

A number of limitations of the research literature were identified in this review. For example, a number of researchers have noted that there is surprisingly little research on the impact of physician assistants (PAs) on the quality of care and its outcomes (Laurant et al., 2010), that many studies are limited by methodological quality (Doan et al., 2011), and that more research is necessary (Laurant et al., 2009; Kleinpell et al., 2008; Wilson, 2008).

Generalizability was another limitation identified (Parekh & Roy, 2010); there are a number of problems with the research design of studies in the existing literature, including:

- Small sample sizes (Kleinpell et al., 2008)
- Lack of randomized controlled trials (Kleinpell et al., 2008)*
- Limited populations of interest (Kleinpell et al., 2008)
- Use of selected settings (Kleinpell et al., 2008; Wilson, 2008)
- Short duration of outcome assessments (Kleinpell et al., 2008; Wilson, 2008)

The literature relevant to sections 2 and 3 (on PA autonomy and collaboration, respectively) is particularly sparse. As noted in one systematic review, studies "often lack a clear description of number of patients, physician assistants and physicians, the qualification of the physician

* For example, in their review of nurse practitioners (NPs) and PAs in the intensive care unit, Kleinpell et al. (2008) identified only two randomized controlled trials, neither of which concerned PAs.

assistants, and a precise account of the tasks and responsibilities of the professionals involved in a patient's care" (Laurant et al., 2010).

Finally, a large proportion of the identified articles grouped PAs together with nurse practitioners (NPs) and labelled them both mid-level providers (MLPs; also referred to as physician extenders, non-physician practitioners or non-physician clinicians) (e.g., Kleinpell et al., 2008; Tsai et al., 2010; Parekh & Roy, 2010; Laurent et al., 2010; Buch et al., 2008). This rapid literature review attempts to presents the best available research evidence on PAs, but given these limitations, caution should be taken in interpreting the findings presented.

1. Safety of PAs

Reviews of the literature have generally found that, according to some measures, care provided by PAs is equivalent to that provided by physicians in terms of safety (Ho et al., 2010; O'Connor & Hooker, 2007; Farmer et al., 2009). Similarly, a review on MLPs (PAs and NPs) found that their care led to outcomes equivalent to those of resident physicians (Kleinpell et al., 2008), while a review on the role and impact of MLPs in emergency department found that patients' outcomes were not negatively affected by the inclusion of PAs in trauma services (Doan et al., 2011).

Numerous individual studies investigating various care outcomes by PAs have been carried out; specific patient outcome findings included:

A. Mortality

- One study examined the impact of replacing medical residents with supervised PAs in a community hospital, and found this was associated with a statistically significant decrease in all cause mortality (from 2.85% to 1.94%) and a decrease in two-year case mix index-adjusted[†] mortality (from .029 to .019) (Dhuper & Choski, 2009).
- Mains et al. (2009) found that when PAs were added to a trauma service consisting of in-house trauma surgeons, overall mortality decreased significantly (2.80% vs. 3.76%).
- Seven studies found no significant differences in mortality associated with PA (or MLP) care (Singh et al., 2011; Bevis et al., 2008; Roy et al., 2008; Oswanski et al., 2004; Dacey et al., 2007; Sanchez et al., 2006).
- In contrast, one study comparing outcomes of patients with five conditions (stroke, pneumonia, acute myocardial infarction, congestive heart failure, and gastrointestinal hemorrhage) found a significantly higher mortality rate among pneumonia cases being treated by PAs, but no differences in mortality for the other four conditions (Van Rhee et al., 2002).

B. Complication Rates

- A two-year prospective study of surgical abortions performed by PAs found that abortion services performed by PAs were comparable in safety and efficacy (i.e., complication rates[‡]) to those provided by physicians (Goldman et al., 2004). An earlier study also found no differences between PAs and physicians in the rates of overall, delayed, or immediate

[†] i.e., mortality rate adjusted according to the hospital's case mix index that year.

[‡] Complications considered were: incomplete abortion, failed abortion, ectopic/extrauterine pregnancy, perforation, cervical laceration, infection, hemorrhage, and other complications including shock, coma, amniotic fluid embolism, anesthesia-related difficulties, and death.

complications after surgical abortion (Freedman et al., 1986, as cited by Laurant et al., 2009). A more recent study[§] compared complication rates for 2,027 procedures by physicians and PAs and NPs from November 2000 through December 2002, and found that complication rates for all providers were very low (2.5 per 1,000)** (Bowman et al., 2004 as cited by Joffe & Yannow, 2004).

- A study of 51 tube thoracostomies^{††} performed either by MLPs or by trauma surgeons found no significant differences between the two groups in terms of insertion complications or complications requiring additional interventions; there was, however, a significantly smaller number of complications related to placement of the tube among MLPs than among surgeons (Bevis, et al., 2008).
- A study comparing the outcomes of cardiac catheterizations performed by supervised PAs to those performed by supervised cardiology fellows-in-training found that the incidence of major complications^{‡‡} within 24 hours did not differ significantly between the two groups (0.54% for PAs, 0.58% for fellows) (Krasuski et al., 2003).

C. Adverse Events, Readmissions and Transfers to the Intensive Care Unit:

- Dhuper and Choski (2009) found no differences in the rates of adverse events or readmissions (within 30 days of discharge) between patients cared for by PAs (supervised by hospitalists) and medical residents in a community hospital.
- A study comparing care provided by PAs (supervised by hospitalists) and traditional house staff^{§§} found no differences in transfers to the intensive care unit (ICU) or in readmissions (Roy et al., 2008).
- A study comparing care provided by a hospitalist-PA team to that provided by residents found that risk of readmission^{***} did not significantly differ between the teams, though length of stay was 6.73% longer for PA-hospitalist patients (Singh et al., 2011).
- The introduction of a PA-led rapid response team at one hospital led to a reduction in the number of cardiac arrests (from 7.6 per 1,000 discharges per month to 3.0), and a reduction in the number of unplanned ICU admissions (from 45% to 29%) (Dacey et al., 2007).
- Sanchez et al. (2006) found no difference in the revisit rate after the implementation of a MLP-led fast-track program in an emergency department (ED).
- Carzoli et al. (1994) found no difference in the incidence of adverse events when comparing charts of neonatal intensive care unit patients cared for by an MLP team compared to a physician team.

[§] The study was unpublished as of 2004.

^{**} Joffe and Yannow (2004) did not state whether there were any differences in complication rates between providers.

^{††} A surgically created opening into the chest cavity for drainage ([PubMed](#)).

^{‡‡} Complications considered included: myocardial infarction, stroke, arrhythmia requiring defibrillation or pacemaker placement, pulmonary edema requiring intubation, and vascular complications.

^{§§} House staff teams have traditionally been composed of one attending physician, one junior or senior resident physician, two interns, and one or two medical students.

^{***} At seven, 14 and 30 days.

D. Other Patient Outcomes

- A study of 9,500 flexible sigmoidoscopy screenings^{†††} found that the MLPs were able to perform the procedure with similar accuracy and safety as the gastroenterologists, but at a lower cost. No major complications were observed in examinations provided by the MLPs; there were no differences in the rates of detection of polyps, and no clinically significant differences in the depth of insertion (Horton et al., 2001).
- In a study evaluating acute asthma care, Tsai et al. (2010) found that supervised MLPs provided care similar to that of physicians, but that unsupervised MLPs were less likely to meet three of 12 processes-of-care guidelines than physicians. However, patients cared for by unsupervised MLPs were less likely to be admitted to the hospital and had an ED length of stay that was approximately one hour shorter than that of patients cared for by physicians or supervised MLPs.

E. Liability and Risk

Two related studies examined 17 years of data on malpractice incidence, payment amount, and other measures of liability among physicians, PAs, and advanced practice nurses (APNs) and found that:

- The overall incidence of and ratio of malpractice claims per provider was no greater for PAs and APNs than for physicians (Nicholson, 2008).
- The ratio of malpractice payments per total number of active PAs in 2006 was 1:563; which was lower than that for physicians (1:62), but higher than that of APNs (1:1,016) (Hooker et al., 2009).
- Over the 17-year period, on average, there was one malpractice payment for every 32.5 active PAs; which was lower than that for physicians (one for every 2.7 active providers) but higher than that for APNs (one for every 65.8 active providers) (Hooker, et al., 2009).
- The reasons for disciplinary actions against PAs were similar to those for APNs and physicians (Nicholson, 2008).

The authors of one of the studies concluded that “there were no observations or trends to suggest that PAs and APNs increase liability” (Hooker et al., 2009).

2. Autonomy of PAs

From the limited information available, the autonomy of practice of PAs appears to be variable across jurisdictions and settings. Wilson (2008) notes that recent US state laws and regulations have allowed more autonomy and practice privileges for MLPs, and that while PAs and NPs must still collaborate with a physician or work under a physician’s supervision, “the meaning of “collaboration” and “supervision” in practice is wide open.” Cooper and Stoflet (2004) similarly point out that among US states, the required frequency of direct contact with a physician varies from daily (in most states), to weekly (in 12 states), to 30-day intervals (in seven states), and in three states physicians are required to review only 10–15% of the PA’s charts.

The literature suggests that the amount of autonomy PAs have in practicing is dependent on various factors including:

^{†††} Flexible sigmoidoscopy is a procedure used to see inside the sigmoid colon and rectum; it differs from colonoscopy in that it enables the doctor to see only the sigmoid colon, whereas colonoscopy allows the doctor to see the entire colon ([National Digestive Diseases Information Clearinghouse](#), 2008)

- their experience (Henry et al. 2011; Morgan et al., 2008; Kimball et al., 2008),
- their training (Kimball et al., 2008; Horton et al., 2001),
- their competence (Henry et al. 2011; Morgan et al., 2008; Horton et al., 2001),
- the requirements of their employers (Ho et al., 2010; Morgan et al., 2008; Kimball et al., 2008),
- the setting in which they practice (e.g., urban vs. rural) (Henry et al. 2011; Kimball et al., 2008).

In general, PAs provide a range of diagnostic and therapeutic services which vary by practice setting (the most common setting and their associated PA services are discussed in the sections below). In general, services that PAs perform include physical examination, diagnosing and treating illnesses, ordering and interpreting tests, counselling on preventive healthcare, assisting in surgery, writing prescriptions, education, research, and administrative services (Legler et al., 2007)^{†††}. Parekh and Roy (2010) noted that it may take a significant amount of time for PAs to develop autonomy and efficiency in an inpatient setting, but that PAs develop greater autonomy and efficiency than house staff when they are employed in specialty inpatient areas (e.g., hematology/oncology, bone marrow transplant) which allow them to develop expertise in a specialized area.

A. PA Autonomy in the Surgical Setting

A recent review of the role and safety of PAs in the surgical setting found that “within the doctor-PA relationship, PAs exercise autonomy in medical decision making and provide a broad range of diagnostic and therapeutic services”, but the review noted that the actual specific roles of PAs depend on the employer’s or team’s requirements (Ho et al., 2010). The review identified several services provided by PAs in a trauma setting, which are presented below. A survey of 246 directors of major trauma centres by Nyberg et al. (2010) also identified a series of services provided by MLPs in trauma settings, and established the proportion of trauma centres that used MLPs in that role. PA/MLP services identified by the survey and the review include:

- Conducting history and physical examinations (Ho et al., 2010);
 - over 50% of facilities used MLPs in these roles (Nyberg et al., 2010)
- Recording daily progress notes (Ho et al., 2010)
- Dictating discharge summaries (Ho et al., 2010);
 - over 50% of facilities used MLPs in this role (Nyberg, et al., 2010)
- Providing outpatient surgical care (Ho et al., 2010)
- Performing procedures such as central venous catheter placement, chest tube insertion, diagnostic peritoneal lavage, arterial line placement, pulmonary artery catheter placement wound evaluation and treatment (Ho et al., 2010);

^{†††} In Ontario, the Physician Assistant Competency Profile requires that a PA is able to perform the following roles: obtain health history; conduct physical assessments and interpret findings; use assessment results to formulate a diagnosis and determine if further clinical investigation is required; order and complete preliminary interpretation of necessary diagnostic tests (e.g., serology, urinalysis, peak flow, X-ray); perform certain diagnostic procedures (e.g., ECG, pap smear); collect samples (e.g., blood, secretions and body fluids); formulate a treatment and management plan, implement certain interventions (e.g., basic life support, immobilization of fractures, suturing); provide pharmacological therapy; and monitor patient progress and response to treatment (Mikhael et al., 2007).

- 37% of facilities used MLPs for central venous catheter placement, 38% used MLPs for chest tube placement, 31% used MLPs for arterial line placement (Nyberg et al., 2010)
- Resuscitation of trauma patients (Ho et al., 2010);
 - over 50% of facilities used MLPs to assist with this role (Nyberg et al., 2010)

B. PA Autonomy in the Emergency Department (ED)

A review of the literature on the role of PAs in the ED notes that the types of cases seen by PAs are determined by the individual PA's scope of practice, which is agreed upon by the PA and the supervising physician (Smith et al., 2005). Aspects of the PA role in the ED identified by the review included:

- history taking and physical examination
- ordering diagnostic tests (e.g., radiographs, ultrasound, or computed tomography (CT) scans), and interpreting the results
- administering the necessary treatments: prescribing medications, suturing, splinting, minor surgical procedures (e.g., foreign body removal, incision and drainage of abscesses), resuscitation (including central line placement, intubation, inserting chest tubes, and arterial lines)
- Discharging, or admitting patients, or referring them to a specialist.

An Ontario study on the integration of NPs and PAs in six EDs found that the specific duties of each PA varied by site (Ducharme et al., 2009).

An analysis of 10 years of emergency medicine data^{§§§} found that PAs were the provider of record for 5.7% of emergency visits (physicians accounted for 92.6%, and NPs for 1.7%) during the period studied, and that the percentage of visits covered by a PA had doubled over the same period (from 3.5% in 1995 to 7.9% in 2004) (Hooker et al., 2008). Another analysis of the same database for the years 1993-2005 found that PAs saw 2.1% of emergency visits over the study period without any evidence of physician involvement and that visits seen by mid-level providers without documented physician involvement increased four-fold, from 1.2% in 1995 to 4.8% in 2005 (Ginde et al., 2008).

C. PA Autonomy in Rural Settings

A 2009 survey found that individuals from rural locations were more likely to use MLPs as their primary care provider than individuals from metropolitan or micropolitan^{****} areas (Everett, 2009), while a survey of 119 hospitals in Iowa (a predominantly rural state) found that 38.7% of Iowan EDs use PAs or NPs in solo coverage (House & DeRoo, 2009).

A recent systematic review of the literature included two studies that indicated that PAs practicing in rural settings spent less time with their supervising physician and had a broader scope of practice than their urban counterparts (Larson et al., 1994, as cited by Henry et al., 2011), and had

^{§§§} The authors analyzed the National Hospital Ambulatory Medical Care Survey of over 1 billion "weighted" emergency visits for 1995-2004. It should be noted that an assessment of this database found that it likely underestimates the visits to NPs and PAs (Morgan et al., 2007).

^{****} Metropolitan areas were defined as those having a population of over 50,000 in their urban core; micropolitan areas were defined as those having a population of over 10,000, but under 50,000 in their urban core.

more patients for whom they were the principle provider (Martin, 2000, as cited by Henry et al., 2011). Rural PAs were found to:

- Commonly perform prenatal/postnatal care, house and night calls, nursing home rounds and athletic team coverage
- Also perform follow-up care, routine administrative duties, the ordering of routine laboratory test and radiological studies, the recording of patient histories, patient education and counselling, routine physical exams, the diagnosis of common illnesses, and minor surgical procedures
- Within rural hospitals, to provide services in emergency departments, surgeries, and during inpatient rounds, and have admitting/discharge privileges (Henry et al. 2011).

A 2002 survey of 34 rural hospital administrators in Montana found that only 7.5% of PAs were required to have direct physician supervision, while the other 92.5% met their supervision requirements through site inspections and telephone communication. In the most autonomous scenario in that state, a PA operating in a remote site may be granted the authority to maintain an office separate from the supervising physician, and the physician would be required to inspect the remote site and review patient records and office procedures at least once every 30 days (Larsson & Zulkowski, 2002).^{††††}

A third study included in the above-mentioned review found that PAs practicing in rural settings rated skills specific to women's health (e.g., cervical cytology smears, breast examination) as among both the important and most commonly used skills that they possessed (Asprey, 2006).

Hutchinson et al. (2001) describe a family medicine clinic located in an underserved rural region of Michigan that is routinely staffed by an APN and a PA. These MLPs provide medical care for the entire range of outpatient conditions (e.g., checkups, emergency treatment of myocardial infarctions and surgical conditions before transport to hospital). A general practice doctor is on site for a day and a half each week and otherwise available for consultation via email and telephone.

D. PA Autonomy in Other Settings

The search for this rapid literature review identified articles describing PA autonomy of practice in other settings, including primary care, endoscopy, and interventional radiology.

Primary care

A 2002 survey of 1,363 primary care physicians examined the use of MLPs as providers of cancer prevention and screening services (Oliveria et al., 2002). PAs were employed in 382 (28%) of these practices. Overall, among the practices that employed them, it was reported that PAs performed:

- complete body skin exams in 78.3% of practices
- digital rectal exams in 86.9% of practices
- clinical breast exams in 84.8% of practices
- Papanicolaou (i.e. "Pap") testing in 82.7% of practices

^{††††} Or another interval specified by the Board of Medical Examiners.

Intermediate Care Service

Sole et al. (2001) describe an intermediate care service (ICS) designed to facilitate the management and long-term placement of trauma patients who are recovering from their injuries, but no longer require intensive care. The ICS is staffed by a PA and an acute care NP, who each manage four to six patients, on average. Upon admittance to the ICS, the MLP conducts an in-depth evaluation of the patient (including re-evaluation of injuries, reviewing diagnostic test results), identifies issues (e.g., physical, cognitive, social) that may affect recovery and discharge to rehabilitation, conducts an in-depth history and physical examination and writes orders focused on rehabilitation and discharge planning. A trauma surgeon/surgical intensivist^{††††} makes weekly rounds and is available for questions on a daily basis. More information about this service is provided in Table 1, below.

Pediatric Intensive Care Unit

Mathur et al. (2005) describe the use of PAs in a six-bed pediatric intensive care unit (PICU). In this model, after a training period lasting from six months to one year, PAs are assigned to an independent but supervised patient care role, in which they perform tasks and activities similar to those performed by residents (e.g., presenting patients on rounds, carrying out care plans). The PAs also support nursing and respiratory therapy functions, and collaborate directly with other subspecialty and consulting attending physicians. At any given time, the PICU is covered by one PA and one resident, each of whom is generally responsible for the management of one to three PICU patients; the orders written by the PAs for their patients must be co-signed by a physician within 24 hours.

Endoscopy

Horton et al. (2001) describe one medical group's use of MLPs in the independent provision of flexible sigmoidoscopies. Before being permitted to perform the procedure independently, the PAs and NPs undergo hands-on training at the direction of gastroenterologists. The training progresses along a continuum of graded responsibility and reduced supervision, and a minimum of 100 supervised examinations must be performed during the training period. Once the MLP has completed the requisite number of procedures and has demonstrated an ability to perform them with minimal discomfort to the patient, and within a reasonable period of time, the MLP is permitted to perform the procedure independently (though a gastroenterologist must be available on-site whenever an MLP is performing the procedure). MLPs are also responsible for discussing results of colonic biopsies with patients and assisting the physician with scheduling patients for future procedures. An evaluation of this model (previous discussed in section 1D above) found that the trained MLPs performed flexible sigmoidoscopies with similar accuracy and safety as gastroenterologists, but at a lower cost (Horton et al. 2001).

Interventional Radiology

Stecker et al. (2004) describe the use of PAs in an interventional radiology practice at an Indiana hospital. In addition to participating in daily rounds, monitoring all charts, and facilitating referrals, the PAs have made large contributions to outpatient care.^{§§§§} Qualified PAs are also involved in the

^{††††} The term surgical intensivist refers to the individual who practices intensive care in the surgical intensive care unit ([Eachempati et al., 2003](#))

^{§§§§} Outpatient services provided by the PAs include: scheduling initial patient consultations, obtaining histories, performing physical examinations, discussing the case and developing a treatment plan with the physician,

management of dialysis fistulas and grafts, and became the primary providers for temporary venous access (e.g., sonographically guided peripherally inserted central catheters, internal jugular central venous lines). Before being allowed to apply for the privilege to perform a given procedure without supervision, a PA must perform the procedure a requisite number of times**** under direct supervision (Stecker et al., 2004).

3. PAs and Collaboration

Few articles identified during the search for this rapid literature review contained details about collaborative relationships involving PAs. According to the authors of one systematic review on the use of MLPs in the ICU, “a limited number of publications share strategies for role implementation and development. Information on successful multidisciplinary models of care is needed to promote optimal use of NPs and PAs in the ICU setting” (Kleinpell et al., 2008). Hooker et al. (2008) similarly point out that the literature on collaborative efforts is sparse.

The most common form of collaboration is between a PA and a single supervising physician (Henry et al., 2011; Hooker, 2006), or small group practice (Henry et al., 2011). In addition, several examples of multidisciplinary teams including PAs were identified in the literature; these varied greatly in terms of team make-up and practice setting, and are described in more detail in Table 1. Practice settings where PAs functioned in collaborative roles included:

- The emergency department, working with NPs and an emergency physician (Dunlop, 2011); or a registered nurse (RN) or licensed practical nurse and an attending emergency physician (Ganapathy & Zwemer, 2003).
- Surgical service, working with a surgeon, a dedicated nursing team, and an anaesthesiologist (Bohm et al., 2010); a general surgery team composed of NPs, residents, and an in-house senior resident (Buch et al., 2008); or a surgical service composed of residents, a chief resident, and attending staff (Victorino & Organ, 2003).
- An intermediate care service,†††† with an acute care nurse practitioner and a trauma surgeon/surgical intensivist (Sole et al., 2001).
- Inpatient general medicine, working with a hospitalist, a senior resident/medical subspecialty fellow, nurses, a care coordinator, and a pharmacist (Roy et al., 2008; Sehgal et al., 2008).
- Interventional radiology, working with radiologists and house staff (Stecker et al., 2004).
- Orthopedics, working with NPs and physicians (Dower & Christian, 2009).
- Gastroenterology, working with gastroenterologists/physicians and NPs (Dower & Christian, 2009).
- Dermatology, working with dermatologists and NPs (Dower & Christian, 2009).

implementing the treatment plan, ensuring that the appropriate preprocedural testing and evaluation has been obtained, and providing appropriate documentation for billing.

**** Initially, because the PAs did not have experience with venous access, they began learning to place peripherally inserted central catheters, which pose less risk than internal jugular catheter placement. The PA was required to place this type of catheter 30 times under direct supervision before being allowed to apply for the institutional privilege to perform it unsupervised, but it was later determined that ten directly supervised internal jugular central venous catheter placements procedures were sufficient before privileges could be requested.

†††† for trauma patients no longer requiring intensive care, but who have yet to be released for rehabilitation

Table 1. Descriptions of Collaborative Teams Including PAs

Description of Collaborative Model	Reference
<p>Seven Oaks General Hospital, Winnipeg, Manitoba At this hospital, emergency department patients are treated by a multidisciplinary team in a patient-centred collaborative practice model consisting of NPs and PAs, working with an emergency physician. The NP and PA roles are distinct, with NPs' primary role being the care of patients who require minor treatment (in the two lowest triage categories), and PAs' primary role being the care of acutely ill patients (including patients who are likely to need a longer visit, or who have more urgent needs). The team has a "patient first" and "no wait" culture; when patient numbers are high, PAs (or the emergency physician) will see patients within the NPs' scope of practice. Despite the fact that the patient population that has increased at least 30% since 2008, wait times, length of stay and "left, not seen" rates have declined. With assistance from the PAs, emergency physicians are able to focus on patients with the most acute needs, and have more time to consult with team members. Patients rate their overall care experience highly.</p>	Dunlop, 2011
<p>Concordia Joint Replacement Group, Winnipeg, Manitoba The addition of PAs to the Concordia Joint Replacement Group team has allowed a single surgeon to run two rooms during a single operating day. Each of the two operating rooms uses one PA, and has its own dedicated nursing team and anaesthesiologist. Under the model used by this group, the surgeon operates in one room with assistance from the first physician assistant, the second physician assistant helps to position, prepare and drape the next patient in the second room. On completion of the first operation, the surgeon leaves the first room to immediately start operating in the second room. When the surgeon leaves the first room, the first physician assistant closes the incision, completes the paperwork and assists with room changeover. The use of the double operating room model facilitated by PAs increased the surgical throughput of primary hip and knee replacements by 42%, and median wait times decreased from 44 weeks to 30 weeks compared with the preceding year. The PAs saved their supervising physicians approximately 204 hours per year, are regarded as important members of the health care team by surgeons, nurses, orthopedic residents and patients, and were found to be essentially cost neutral.</p>	Bohm et al., 2010
<p>The Mount Sinai Surgical Residency, New York, New York The surgical residency program recognizes the important role that physician assistants and nurse practitioners play in resident education. The specific responsibilities of the surgical MLPs include managing preoperative and postoperative patients, assisting in procedures and the operating room (depending on the service), performing surgical consultations, participating in discharge planning, promoting wellness and patient education, and communicating with the entire surgical team. A daytime PA is assigned to each general surgery team. The PA works together with the residents to provide all inpatient floor work, see consults, and complete discharges. When residents on the team are scrubbed into the operating room, the PA will answer all forwarded pages. If a case in the operating room cannot be covered by the residents, the PA is available to assist. The general surgery teams are covered at night by a junior resident or an NP. An in-house senior resident always is on call for support. The subspecialty services all use their MLPs slightly differently, with some working jointly with only one physician and some practicing in the outpatient setting. Patient care decisions are made collaboratively by residents and MLPs. MLPs contribute more to the junior residents' education in direct clinical teaching (e.g., nasogastric tube insertion or arterial catheter placement) and to all residents' patient coordination education (e.g., how to expedite a physical therapy consult or home nursing services request).</p>	Buch et al., 2008

<p>Brigham & Women's Hospital, Boston, Massachusetts The inpatient general medicine service recently switched from a traditional house staff service to a service staffed with six full time equivalent PAs and supervised by hospitalists, referred to as the Physician Assistant/Clinician Educator service. The PACE service consisted of 15 beds localized to two adjacent inpatient "pods," staffed by a single cadre of nurses and medically staffed by one hospitalist and two physician assistants from 7:00 AM to 7:00 PM on weekdays and by one hospitalist, one physician assistant, and one moonlighter from 7:00 AM to 7:00 PM on weekends. A moonlighter, typically a senior resident or medical subspecialty fellow, admitted patients and covered nights on the service from 7:00 PM to 7:00 AM seven days a week. The service accepted admissions 24 hours per day, seven days per week, whenever beds were available. Daily morning rounds included the hospitalist, physician assistants, nurses, a care coordinator, and a pharmacist. The PACE service did not have triage guidelines related to diagnosis, complexity, or acuity, but only accepted patients via the emergency department or via a primary care physician's office, and did not accept patients transferred from outside hospitals or from the intensive care units. All of the physician assistants on the PACE service had prior inpatient medicine experience, ranging from six months to five years. Their clinical responsibilities were similar to those of interns at the study hospital, and included taking histories and performing physical examinations, writing notes and orders, reviewing and assimilating data, creating and updating patient signouts, completing discharge summaries, consulting other services as needed, and communicating with nurses and family members. An evaluation of the PACE service in comparison to the traditional house staff service found that total cost of care was marginally lower on the study service (adjusted costs 3.9% lower) but LOS was not significantly different as compared with house staff services. No difference was seen in inpatient mortality, ICU transfers, readmissions (within 72 hours, 14 days or 30 days), or patient satisfaction.</p>	<p>Roy et al., 2008 Sehgal et al., 2008</p>
<p>Department of Radiology, Indiana University Hospital, Indianapolis, Indiana The subspecialty of interventional radiology (IR) involves a large amount of patient care, though as practices become busier, there is less time for radiologists to spend with individual patients. This radiology department has sought to use PAs to improve clinical patient care. PAs participate in inpatient and outpatient care. They are involved in daily morning inpatient rounds with the fellows and residents rotating on the hospital's service. In this capacity, they evaluate abscess, drainage catheters and monitor patient progress. They also perform and monitor compliant chart documentation for all inpatients being followed by the IR service. In conjunction with the house staff, the PAs will communicate with referring services as needed and help triage queries and consultation requests that may be brought to their attention during these rounds. The PAs have made a large contribution to the implementation of IR outpatient services and establishment of an outpatient office, which operates two half-days per week. Outpatient service duties include scheduling initial patient consultations, obtaining histories and performing physical examinations, discussing the case with the IR physician, developing a treatment plan for the patient in conjunction with the IR, implementing the plan, and providing appropriate documentation for billing. The PA also ensures that any appropriate preprocedural testing and evaluation has been obtained. In these capacities, the PAs help to ensure a smooth transition for the patient from initial consultation through postprocedural discharge and follow-up. The PAs had also recently become involved in the management of dialysis fistulas and grafts, and had become the primary providers for temporary central venous access; they are involved in all aspects of these procedures, from assessment of appropriateness of the initial request, to patient evaluation, obtaining informed consent, placing the device, and troubleshooting subsequent malfunctions.</p>	<p>Stecker et al., 2004</p>
<p>Department of Surgery, University of California, San Francisco, East Bay Funding for a PA position on each of four surgical services was approved, and one PA was assigned to each surgical service. The PAs were fully incorporated into the surgical team and functioned at the level of a postgraduate year one or postgraduate year two resident. The PAs are under the direct supervision of the chief resident or attending staff. Each PA worked four ten-hour shifts per week, usually 7 AM to 5 PM on Mondays, Tuesdays, Wednesdays, and Fridays. Thursdays are set aside for teaching conferences. The PAs rotated between services every three months, in order to provide a varied work experience and prevent the PAs from becoming too dominant on a service. As a result of the addition of PAs to surgical teams, surgery resident hours were significantly decreased by the fourth, fifth, and sixth months after PAs joined, though 60% of surveyed residents believed that the PAs had no influence on the amount of time they spent in the hospital. The majority of surveyed residents did, however think that the PAs decreased stress levels and helped to improve morale (60% in both cases).</p>	<p>Victorino & Organ, 2003</p>

<p>Department of Emergency Medicine, Strong Memorial Hospital, Rochester, New York As a response to crowding in the emergency department, the department of emergency medicine developed a role for MLPs in which they could provide “back-end” work for patients awaiting inpatient beds. After initial physician evaluation, patients without ready inpatient beds were grouped in the ED and their care was transferred to the transition team (TT). The TT consisted of an MLP (nurse practitioner or physician assistant) and a registered nurse or licensed practical nurse, all reporting to ED supervisors. The TT was present 24 hours per day and accepted patients from the acute-care areas of the ED. A patient was eligible for management by the TT only if the attending physician in the ED had seen the patient and determined the patient’s ED disposition. Two types of patients were transferred to the TT: (1) admitted patients awaiting an inpatient bed; and (2) patients scheduled for a test or consultation that would determine disposition. The TT MLP was expected to see each patient, confirm a care plan and disposition for the patient, monitor the patient’s clinical care, document these items, and note the time of transfer of medical responsibility for the patient from the ED to the inpatient services. Medical responsibility for patients managed by the TT continued to be that of the attending ED physician until the hospital’s inpatient services assumed care of the patient. The TT provided all patient care until a patient was seen by the admitting inpatient service or until the patient left for an inpatient unit. The major TT objectives were a reduction of EM physician work in caring for inpatients, and improved patient care; the TT did assume a significant patient load, but this did not improve patient satisfaction.</p>	<p>Ganapathy & Zwemer, 2003</p>
<p>Intermediate Care Services, Orlando Regional Medical Center, Orlando, Florida The Intermediate Care Service was designed to facilitate the management and long-term placement of trauma patients who no longer require intensive care while recovering from their injuries by having MLPs coordinate care for ongoing trauma patient services. Under the supervision of a trauma surgeon/ surgical intensivist, two nonphysician providers—an acute care nurse practitioner (ACNP) and a PA—manage trauma patients whose injuries have been stabilized. Patients who either no longer require treatment in the ICU, do not have acute surgical problems, or are likely to need extensive rehabilitation and long-term hospitalization for their injuries are transferred to the ICS by the admitting trauma team. Once a patient is transferred to ICS, either the ACNP or PA assumes responsibility for patient care management. On average, they each manage four to six patients. The trauma surgeon/surgical intensivist makes weekly rounds on the patients and is available on a daily basis as needed when questions arise. When a new patient is accepted to the ICS, the MLP conducts an in-depth evaluation of the patient, including a detailed chart review; reviews progress reports, diagnostic test results, and notes written by members of the multidisciplinary team (nursing, physical therapy, occupational therapy, speech therapy, social work, dietary); reviews data to identify physical, cognitive, social, financial, and other issues that may affect recovery and discharge to rehabilitation; conducts an in-depth history and complete physical examination of the patient; and writes orders based on the initial evaluation of the patient, with a focus on rehabilitation and discharge planning. An evaluation of the model found that of 93 cases reviewed, all survived, and none required a higher level of care (e.g., transfer back to the ICU for treatment). The authors of the evaluation suggested that the ICS represents a unique and valuable model for the collaborative management of complex trauma patients.</p>	<p>Sole et al. 2001</p>
<p>Kaiser Permanente Fontana Medical Center, Orthopedic department , Fontana, California The Kaiser Fontana Medical Center Orthopedic Department relies on 13 PAs and one NP to provide a broad range of out- and inpatient services, including “first call” for all orthopedic consult requests from urgent care, primary care, emergency, or inpatient services. PAs conduct all initial evaluations and fully handle an estimated 80%-90% of patient cases, with the remainder—such as fractures that are not reducible and may require surgery—referred to physicians. PAs order and read imaging studies and other tests, apply casts, set bones such as wrists, prescribe medications (except schedule II drugs at discharge), and provide most other orthopedic treatment. Fourteen physicians supervise the PAs. A team of four rotating PAs works essentially as PA hospitalists to support inpatient care and work closely with three internist physicians. The NP works in podiatric surgery.</p>	<p>Dower & Christian, 2009</p>

<p>St. John's Clinic—Orthopedic Specialists, Springfield Missouri This clinic provides a full range of orthopedic services within an integrated health care system. Approximately 13 PAs work with 16 orthopedic physicians providing both in- and outpatient clinical care. Outpatient services provided by the PAs include seeing and evaluating patients, applying and removing casts, prescribing medications (except narcotics), ordering and interpreting tests, and delivering joint injections. Physicians and PAs usually work together in teams of two, though some physicians in the group do not work with any PAs. With the one-on-one team approach, PAs always have access to a physician and receive both direct and general supervision. The practice experimented with allowing experienced PAs to see some new patients but modified its policy due to concerns from some community primary care physicians. Now, all new patients see a physician in addition to a PA. Patients are seen exclusively by PAs for many follow-up visits, although physicians emphasize to PAs during their orientation and training that they must continuously sharpen their skills regarding patient satisfaction and assess whether a patient may want to see a physician instead of, or in addition to, the PA.</p>	<p>Dower & Christian, 2009</p>
<p>Division of gastroenterology, hepatology, and nutrition, University of Florida - Gainesville At this top-ranked unit, a team of 14 medical doctors, four PAs, and three NPs work to meet extremely high-volume demands for GI services ranging from basic assessments to liver transplants. Physician assistants and nurse practitioners focus on outpatient needs and function similarly to medical fellows or junior attending physicians. Working collaboratively with the physicians, the PAs and NPs have broad scopes of responsibility and competence. The unit stresses communication among all clinicians and works to ensure that PAs and NPs have access to physicians whenever needed. Specific responsibilities vary.</p>	<p>Dower & Christian, 2009</p>
<p>Digestive Health Specialists, Federal Way, Washington This specialty group of medical doctors and non-physician clinical staff works at nine gastroenterology outpatient clinics and four endoscopy centers in and around Tacoma, Washington. Collectively, eight PAs and five NPs complement a team of about 20 gastroenterologist physicians to provide care in outpatient settings and at several affiliated local hospitals for inpatient services. Although specific duties and responsibilities may vary, the PAs and NPs work fairly independently and provide a full range of medical care except high-level diagnoses and procedures such as endoscopy and colonoscopy.</p>	<p>Dower & Christian, 2009</p>
<p>Dermatology Clinic, P. C., Salem, Oregon This private group practice is composed of four dermatology physicians and three PAs. Each PA has his or her own patient caseload, which is generally equal to the physician caseloads. Compared with physicians, PAs for the most part provide a similar scope of clinical services. Exceptions include some complicated surgeries and diagnostically complex patients, whom the physicians handle. PAs see patients, write treatment plans, prescribe medication, perform biopsies for skin cancer, make incisions, and provide some laser treatments. PAs work collaboratively with physicians on-site, requiring minimal supervision but under a rigorous monitoring policy. PAs do not see patients without a physician on-site. All new patients are seen by a physician and a PA at their first visit. PAs may see the patients on their own for follow-up visits when there is no change in treatment plans; if any questions arise, the PA consults with the physician to resolve the question, reevaluate the patient, and/or re-establish a treatment plan. If any new problems arise, the patient sees the physician. All PAs work with all physicians and interact regularly throughout the day.</p>	<p>Dower & Christian, 2009</p>
<p>Central Carolina Dermatology Clinic Inc., High Point, North Carolina This six-physician dermatology group employs one PA who sees 25-40 patients per day. He does evaluations, orders laboratory tests, orders ultraviolet light treatment, and performs biopsies and excisional surgeries (though not flaps, grafts, or Mohs surgeries). He has prescriptive authority but no Drug Enforcement Agency number, by choice, so he does not prescribe narcotics. He has worked with this practice for five years and previously was at another dermatology practice for seven years.</p>	<p>Dower & Christian, 2009</p>

Please take the time to complete an anonymous two-minute [Literature Review Survey](#) to inform us how this review met, or did not meet, your needs.

APPENDIX

Table 2 – Articles on the Safety, Autonomy, and Collaboration of Physician Assistants####

No.	Description	Reference
Review Articles		
1	<p>This systematic review describes the role and impact of physician assistants (PAs) in the ED. It includes reports of surveys, retrospective and prospective studies as well as guidelines and reviews. Seven hundred and twelve studies were identified of which only 66 were included, and many of these studies were limited by methodological quality. Generally the use of PAs in the ED is modest with 13–18% of US EDs having PAs although academic medical centres report PA use in 65–68% of EDs. The evidence indicates that PAs are reliable in assessing certain medical complaints and performing procedures, and are well accepted by ED staff and patients alike. Specifically, four studies compared PAs' skills in performing procedures, and PAs appear equally capable of performing procedures if adequately trained and supervised. Methodological quality among these studies was moderate to strong. There was no study of the outcome of patients treated by PAs in the ED, although two studies of trauma services (likely inpatient) were reviewed. A 1998 study by Rudy et al. compared the outcomes of patients treated by 14 NPs and PAs versus 16 resident physicians over a one-month period from two academic centres. They found no significant differences, but were unable to control for important differences such as age and level of acuity in patient characteristics between the two groups. A more recent retrospective chart review (see entry on Mains et al, 17, below) at a large hospital compared patient outcomes treated by three different in-house trauma teams, including a team composed of trauma surgeons with PAs; the patients treated by that group resulted in significant lower adjusted odds ratio for mortality and shorter length of stay (LOS) (decreased by less than half a day). These studies were not sufficiently powered to determine equivalence; however, they suggested that patients' outcomes were 'not negatively affected' by the implementation of PA on trauma services. There is limited evidence as to whether PAs improve ED flow or are cost-effective. Future studies on work processes, cost-effectiveness, unfamiliar patients' willingness to be treated by non-physician providers, and ED physicians' acceptability of PAs are needed to inform and guide the integration of PAs into EDs.</p>	<p>Doan, Q., Sabhaney, V., Kisson, N., Sheps, S., & Singer, J. (2011). A systematic review: The role and impact of the physician assistant in the emergency department. <i>Emergency Medicine Australasia</i>, 23, 7-15.</p>

Please note the studies, programs, and findings presented in this table may originate from jurisdictions with health systems that are significantly different from Ontario's. If there is intent to draw heavily from one or more sources presented in this table, we recommend that you contact the lead author of this review for assistance with evaluating the local applicability.

No.	Description	Reference
2	<p>Purpose: A literature review was performed to assess the role of physician assistants (PAs) in rural health care. Four categories were examined: scope of practice, physician perceptions, community perceptions, and retention/recruitment. Methods: A search of the literature from 1974 to 2008 was undertaken by probing the electronic bibliographic databases of English language literature.</p> <p>Criterion for inclusion was original data published on rural PAs. Each paper was assessed and assigned to the four categories. Findings: A total of 51 papers were identified; 28 papers had a primary focus on research and specified PAs in a rural setting. Generally, the literature suggests that PAs provide cost-efficient and supplemental medical services to underserved rural populations and that these services are valued. It also appears that rural PAs possess a larger scope of practice than urban PAs. This broad range of skills and procedures may be necessary to match the extensive health care needs of underserved rural populations. The experience and competency of the PA helps to define the scope of practice. Eleven papers discussed PA scope of practice in rural areas. Generally, there is consensus within the literature regarding the autonomy and scope of practice for rural PAs. Larson and associates observed that Medex-trained PA graduates from rural Washington State spent less time with their supervising physician and had a broader scope of practice than their urban cohorts. Martin validated Larson's work studying Pennsylvania PAs. He found that compared to urban PAs, rural PAs spent more time with patients clinically, saw more patients on a daily basis, and had more patients for whom they were the principal provider. The authors thought that the PAs profiled were more likely to work in underserved areas than their urban counterparts. The most common type of practice for a rural PA is primary care. The most represented practice settings in these studies were a solo physician's private practice or a small group practice clinic. The federal government also employs rural PAs. Typical government-sponsored sites included community health centers, migrant health centers, Indian health centers, and prison systems. Krein's study of northern states indicated that more than 50% of rural hospitals utilized PAs. Within these hospitals, most PAs provided services in emergency departments, surgeries, and during inpatient rounds, and they had admitting/discharge privileges. The literature identified many tasks performed by rural PAs. The most common duties observed included prenatal/postpartum care, house calls, night calls, nursing home rounds, and athletic team coverage. Other activities noted involved follow-up care for patients, routine administrative duties, ordering routine laboratory tests and radiological studies, recording patient histories, patient education, counseling, routine physical exams, diagnosing common illnesses, and performing minor surgical procedures. Historically, the illnesses and procedures attended to by rural PAs were generally considered commonplace and not critical. Over a 35-year period of examination, the literature improved in numbers of PAs studied and the quality of research. However, the lack of longitudinal studies was considered a shortcoming of rural health PA observational research. Conclusions: Through this review, some insights about the role of PAs emerged. Overall, they seem well adapted to rural health. Important issues regarding the recruitment and retention of PAs to rural populations also emerged. Improvement in enabling legislation contributes to the utilization of PAs in America.</p>	<p>Henry, L. R., Hooker, R. S., & Yates, K. L. (2011). The role of physician assistants in rural health care: A systematic review of the literature. <i>The Journal of Rural Health</i>, 27(2), 220-229.</p>

No.	Description	Reference
3	<p>Background: The Australia health workforce productivity Commission Research Report in 2005 identified workforce shortages. One of the recommendations is that new models of health care be established. As a result South Australia is trialling United States trained physician assistants in a pilot program. This paper summaries the review of literature of the physician assistant role and safety in the surgical setting. Methods: A literature search using Medline and Pubmed from 1966 until 2009 with key words: physician assistants, midlevel providers, surgery. The references of the results were also searched for suitable articles. The Google search engine was also used with the above keywords to search for latest developments from non-traditional sources. Results: There were over 200 suitable articles relating to the quality and safety of physician assistants. The overwhelming majority of the articles originate from the United States and these vary in quality. There were 13 published studies identified that documented physician assistants in the surgical setting. As part of their comprehensive capabilities, PAs are able to obtain medical histories, conduct physical exams, formulate diagnoses, establish or implement treatment plans, order and interpret tests, counsel on preventive health care, provide patient education, assist in surgery and write prescriptions in all states of America. Within the doctor-PA relationship, PAs exercise autonomy in medical decision making and provide a broad range of diagnostic and therapeutic services. A PAs practice may also include education, research and administrative services. Initially PAs were projected to be working in the primary health-care setting but over time it has become evident that their flexibility of function can be extended to fill the gaps in the running of surgical units.</p> <p>There are various models on the role of the PA within the surgical units. In some centres the PA is part of a team with other surgical residents and in other mostly more rural centres the PA collaborates only with the consultant. As mentioned before the actual specific role carried out by PA depends on the employer/teams requirements. In the trauma setting, PAs have provided a service evaluating patients in the emergency department for traumatic and surgical problems. They conduct history/physical examinations, record daily progress notes, discharge summaries, outpatient surgical care and performed procedures such as CVC placement, chest tube insertion, diagnostic peritoneal lavage, arterial line placement, pulmonary artery catheter placement, wound evaluation and treatment and resuscitation of trauma patients. Conclusion: From the published data physician assistants have been shown to provide safe and provide high quality care in surgical units. It is important that prior to their commencement their role is defined to alleviate conflict and confusion in the team. Continued auditing should be conducted to monitor progress and impact.</p>	<p>Ho, P., Pesicka, D., Schafer, A., & Maddern, G. (2010). Physician assistants: Trialling a new surgical health professional in Australia. <i>NAZ Journal of Surgery</i>, 80(6), 430-437.</p>

No.	Description	Reference
4	<p>Background: Developed countries face major challenges due to rising demand for healthcare, unacceptable variations in service access and quality, pressure to contain costs and medical workforce shortages. A common response has been to extend the role of non-physician clinicians into areas that were previously the domain of physicians. Non-physician clinicians play an increasingly prominent role in the provision of clinical patient care. The expectation is that such revision of roles will improve healthcare effectiveness and efficiency. But does it? Ideally, role revision should be governed by research-based evidence of how skills may best be distributed among different healthcare professionals (both non-physician clinicians and physicians) in order to optimise the cost-effectiveness of health service delivery and to improve the quality of patient care. However, the evidence base for role revision is generally not robust and has lagged behind service developments. Objective: The authors undertook a structured literature review to address the following question: what is the impact of professional role revision on quality of care and outcomes? Type of role revision: In this report the authors are concerned with the subset of revisions in which non-physician clinicians take on defined tasks that were previously the domain of physicians. There are two conceptually different approaches to role revision in this context. The first is to deploy non-physician clinicians as 'supplements' for physicians. Non-physician clinicians working in this way provide additional services that are intended to complement or extend those provided by physicians. The aim is generally to improve the quality of care and extend the range of services available to patients. The second approach is to deploy nonphysician clinicians as 'substitutes' for physicians. Non-physician clinicians working in this way provide the same services as physicians in order to reduce physician workload, increase service capacity and/or reduce costs. Gains in service efficiency may be achieved if physicians give up providing the services that are transferred to non-physicians, and instead invest their time in activities that only physicians can perform. A single role revision may combine elements of both supplementation and substitution; the authors define this as 'mixture'. Findings: Overall, the evidence available to answer the research question is sparse, with the exception of nurse-physician role revision. In total they included 28 systematic reviews and three original studies. The methodological quality of systematic reviews varied as follows: 'good' (n=16), 'moderate' (n=7) and 'poor' (n=5). However, a number of the authors of these reviews described the methodological quality of the original studies they included as 'poor' or 'insufficient'. Only a minority of the authors reported that the methodological quality of the original studies was moderate or good (n=7). Evidence for physician assistant role revision Two reviews and three controlled observational studies reported the effectiveness of physician assistant role revision: two evaluated the effects of substitution, one studied the effects of supplementation and two were identified as a mixture of role revision. Physician assistants worked in various healthcare settings, predominantly in specialist roles; however, the clinical domain was not specified in the two reviews. The majority of the studies were conducted in the USA. The reviews often lack a clear description of number of patients, physician assistants and physicians, the qualification of the physician assistants, and a precise account of the tasks and responsibilities of the professionals involved in a patient's care. This information was reported in the three original studies. The findings suggest that both access to healthcare services and productivity of healthcare services increased. Furthermore, physician assistants reduced the workload of physicians. Despite these positive findings, one original study showed that in general physician assistants adhered less often to guideline recommendations in comparison with physicians working alone. There is some evidence that physician assistants gain similar clinical outcomes to physicians. One original study found that physician assistants were less likely to achieve the targeted outcome. This may be associated with non-adherence to guideline recommendations. Similar to care provided by nurses, patients seemed very satisfied with care provided by physician assistants. The two reviews concluded that the involvement of physician assistants in patient care resulted in cost savings. There is remarkably little evidence regarding the impact of physician assistants on quality of care and outcomes. The available evidence is largely based on non-experimental studies and narrative analysis of the data. The authors recommend more rigorous research in this area. On the basis of these two reviews and three original studies the authors conclude that, regardless of the healthcare setting and type of role revision, physician assistants provide the same quality of care and establish similar outcomes to physicians. However, they recommend more rigorous research before drawing firm conclusions.</p>	<p>Laurant, M., Harmsen, M., Faber, M., Wollersheim, H., Sibbald, B. & Grol, R. (2010). Revision of professional roles and quality improvement: A review of the evidence. The Health Foundation, London, U.K.</p> <p>Available at: http://www.health.org.uk/publications/research_reports/prof_roles_and_qi.html</p> <p>Last accessed: July 2011.</p>

No.	Description	Reference
5	<p>Health care is changing rapidly. Unacceptable variations in service access and quality of health care and pressures to contain costs have led to the redefinition of professional roles. The roles of nonphysician clinicians (nurses, physician assistants, and pharmacists) have been extended to the medical domain. It is expected that such revision of roles will improve health care effectiveness and efficiency. The evidence suggests that nonphysician clinicians working as substitutes or supplements for physicians in defined areas of care can maintain and often improve the quality of care and outcomes for patients. The effect on health care costs is mixed, with savings dependent on the context of care and specific nature of role revision. The evidence base underpinning these conclusions is strongest for nurses with a marked paucity of research into pharmacists and physician assistants. More robust evaluative studies into role revision are needed, particularly with regard to economic impacts, before definitive conclusions can be drawn. Though limited, the findings with respect to PAs were:</p> <p><i>Effects on clinical outcomes.</i> One review reported that there was no difference in clinical outcomes between patients cared for by physician assistants or physicians ($n = 10$). Two out of the three original studies also found no differences between physician assistants and physicians with regard to overall complication rate and the rates of immediate or delayed complications following surgical abortion. The third original study (see entry #25, Ohman-Strickland et al. (2008), below), however, found that physician assistants were 32% less likely than physicians to have patients attain targeted low-density lipoprotein cholesterol ($p < .001$). No significant differences were found with respect to targeted HbA1c or microalbumin levels.</p> <p><i>Effects on patient outcomes.</i> Both systematic reviews reported that patients were very satisfied with physician assistants. Findings were chiefly drawn from the same original studies. None of the three original studies included other patient outcome measures.</p> <p><i>Effects on process of care outcomes.</i> One study included in a review, showed that access to health care services improved. Transfer time to operating room decreased by 43% and to intensive care unit by 51%, with physician assistant care resulting in 4 to 5 hours saved each day. Ohman-Strickland et al. (2008) found that, despite guideline recommendations for diabetic care, physician assistants were 67% less likely to assess microalbumin levels when compared with physicians ($p < .05$). There were no significant differences in the assessment of HbA1c, blood pressure, and lipids, although physician assistants tended to have lower assessment rates.</p> <p><i>Effects on resource utilization.</i> Both reviews reported that physician assistants contributed to increased productivity. In addition, one 1998 study showed a decreased length of hospital stay in the physician assistant group. None of the original studies included resource utilization outcome measures.</p> <p><i>Effects on costs and cost-effectiveness.</i> Both reviews reported that care provided by physician assistants was cheaper than care provided by physicians. There was a slight overlap in original studies ($n = 4$) on which this conclusion was based.</p>	<p>Laurant, M., Harmsen, M., Wollersheim, H., Grol, R., Faber, M., & Sibbald, B. (2009). The impact of nonphysician clinicians: Do they improve the quality and cost-effectiveness of health care services? <i>Medical Care Research and Review</i>, 66(6), 36S-89S.</p>

No.	Description	Reference
6	<p>Background: Advanced practitioners including nurse practitioners (NPs) and physician assistants (PAs) are contributing to care for critically ill patients in the intensive care unit through their participation on the multidisciplinary team and in collaborative physician practice roles. However, the impact of nurse practitioners and physician assistants in the intensive care unit setting is not well known. Objectives: To identify published literature on the role of nurse practitioners and physician assistants in acute and critical care settings; to review the literature using nonquantitative methods and provide a summary of the results to date incorporating studies assessing the impact and outcomes of nurse practitioner and physician assistant providers in the intensive care unit; and to identify implications for critical care practice. Methods: The authors conducted a systematic search of the English language literature of publications on nurse practitioners and physician assistants utilizing Ovid MEDLINE, PubMed, and the Cumulative Index of Nursing and Allied Health Literature databases from 1996 through August 2007. Interventions: None. Results: Over 145 articles were reviewed on the role of the nurse practitioner and physician assistant in acute and critical care settings. A total of 31 research studies focused on the role and impact of these practitioners in the care of acute and critically ill patients. Of those, 20 were focused on nurse practitioner care, six focused on both nurse practitioner and physician assistant care, and five were focused on physician assistant care in acute and critical care settings. Fourteen focused on intensive care unit care, and 17 focused on acute care including emergency room, trauma, and management of patients with specific acute care conditions such as stroke, pneumonia, and congestive heart failure. Most studies used retrospective or prospective study designs and nonprobability sampling techniques. Only two randomized control trials were identified. The majority examined the impact of care on patient care management (n = 17), six focused on comparisons of care with physician care, five examined the impact of models of care including multidisciplinary and outcomes management models, and three assessed involvement and impact on reinforcement of practice guidelines, education, research, and quality improvement. Conclusions: Although existing research supports the use of nurse practitioners and physician assistants in acute and critical care settings, a low level of evidence was found with only two randomized control trials assessing the impact of nurse practitioner care. Overall, a limited number of studies have focused on the impact of NP and PA care in acute and critical care settings, and they are limited in their generalizability because of small sample sizes, use of selected settings, limited populations of interest, and short duration of outcome assessment. However, the existing research on NPs and PAs demonstrates that their integration in the ICU (intensive care unit) positively impacts patient care. NP and PA care has been demonstrated to enhance patient care flow and resident work hours without altering patient outcomes or direct hospital costs and that tasks, activities, and outcomes are similar to resident physicians. Further research that explores the impact of nurse practitioners and physician assistants in the intensive care unit setting on patient outcomes, including financial aspects of care is needed. In addition, ICU teams are effectively incorporating NPs and PAs, yet a limited number of publications share strategies for role implementation and development Information on successful multidisciplinary models of care, is needed to promote optimal use of NPs and PAs in the ICU setting.</p>	<p>Kleinpell, R. M., Ely, E. W. & Grabenkort, R. (2008). Nurse practitioners and physician assistants in the intensive care unit: An evidence-based review. <i>Critical Care Medicine</i>, 36, 2888-2897.</p>

No.	Description	Reference
7	<p>The purpose of this paper was to demonstrate that the medical workforce shortage is an international phenomenon and to review one of the strategies developed in the USA in the late 1960s: the physician assistant model of health service provision. The authors consider whether this model could provide one strategy to help address the medical workforce shortage in Australia. A systematic review of the literature about medical workforce shortages, strategies used to address the medical workforce shortage, and the physician assistant role was undertaken. Literature used for the review covered the period 1967–2006. Physician assistants are health care professionals trained within the medical model of care and licensed to practise medicine under medical supervision. They undertake a range of medical tasks, including physical examination, diagnosing and treating illnesses, ordering and interpreting medical tests, assisting in surgery, writing prescriptions and providing preventive health care services. All these tasks are undertaken within a framework of delegated practice, with the physician assistant either co-located with a doctor or supervised at a distance by a medical officer. In the USA, physician assistants work in a broad range of settings and fields of medicine. The role of physician assistants includes procedural/technical activities, direct patient care, administration, research and medical education. Besides directly caring for patients, they also undertake patient education and health promotion. Those working in primary care fields cover family practice, paediatrics and women's health. The places where they work include private practices with family medicine doctors (equivalent to GP), or in a rural/remote practice associated with a supervising doctor who may be some distance away. Other settings include prison services, walk-in clinics in poorly resourced areas, hospital outpatients and occupational health positions. They also work in hospital and specialist settings. These include trauma centres, renal dialysis services, paediatrics, medical and surgical wards, and specialty units such as gastroenterology, urology, dermatology and cardiac services. Physician assistants provide safe, high-quality and cost-effective primary care services under the direction of a doctor and respond to workforce shortages in rural and remote areas, family practice medicine and hospital settings. According to the studies undertaken over 30 years in a range of clinical settings, the quality of care has not been eroded when physician assistants have been providing the care. Patient acceptance has been well demonstrated, and there have been cost-savings in employing physician assistants in medical practices. Hospitals found that they could substitute about 50–75% of a doctor's work with one physician assistant, with their broad based training enabling them to quickly function in a number of different clinical settings. This model of health care provision has been adopted in several other developed countries, including England, Scotland, the Netherlands and Canada. The physician assistant concept might provide Australia with a novel strategy for addressing its medical workforce shortage, particularly in rural and remote settings.</p>	<p>O'Connor, T. M. & Hooker, R. S. (2007). Extending rural and remote medicine with a new type of health worker: Physician assistants. <i>Australian Journal of Rural Health</i>, 15, 346-351.</p>

No.	Description	Reference
8	<p>Physician assistants (PAs) have been an integral part of the emergency medicine team in the USA for the past 30 years. This review outlines the reasons why PAs can play a vital role in UK National Health Service (NHS). The scope of practice for PAs defines the role of a PA in a specific healthcare environment. Each PA and his or her supervisor agree upon a set of diagnostic and therapeutic modalities that the PA may employ with varying levels of supervision. The scope of practice allows for development and progression of skills of the PA. A key relationship is that of the PA and the supervising physician. It is a relationship built on experience, mutual trust, and reliance. The stronger the relationship the more positive the working environment is for both providers. The physician must feel comfortable delegating tasks to the PA, and the PA must know the physician is available when the complexity of a case or procedure exceeds his or her level of competence. The types of cases seen by a PA depend on the scope of practice and include minor and major illness or injuries, including resuscitation. Some aspects of the role are: history taking and physical examination, and ordering diagnostic tests including radiographs, ultrasound, or computed tomography (CT) scans as needed and interpreting the tests. The PA then administers the necessary treatments as indicated, from prescribing medications, suturing, splinting, minor surgical procedures such as foreign body removal and incision and drainage of abscesses to more invasive procedures such as resuscitation, including central line placement, intubation, inserting chest tubes, and arterial lines. Patient disposition may involve discharge, admission, or referral to a specialist. Another aspect of variability of PA practice in the USA is level of physician supervision. Most PAs practise with a supervising physician on site, although there are PAs in rural areas who treat patients with a supervising physician available for consultations by phone only. The experience of American PAs working in one NHS trust are discussed, highlighting the cultural differences in the environment of the emergency departments in the two countries that will influence the scope of practice of PAs in the UK.</p>	<p>Smith, J. S., Tevis, B., & Murali, K. (2005). Commentary from the front lines: America physician assistants working in a United Kingdom emergency department. <i>Emergency Medicine Journal</i>, 22, 322-324.</p>
Articles in Peer-Reviewed Journals		
9	<p>This editorial describes a multidisciplinary team which operates in the emergency department at a hospital in Manitoba. At the Seven Oaks General Hospital (SOGH) in Winnipeg, patients presenting to the emergency department are cared for by a multidisciplinary team in a patient-centred collaborative practice model. This highly successful group includes NPs and PAs, who work side by side. Although NPs and PAs have distinct roles, some overlap does occur at times, when it has been determined that the overlap is appropriate. The primary role of the NP is to care for patients who require minor treatment and are in the two lowest triage categories. The primary role of the PA is to care for acutely ill patients. Patients who are likely to need a longer visit, or who have more urgent needs, are cared for on the acute side. When numbers are high, patients with needs that fall within the NP scope of practice may be seen by either the NP or the emergency physician (or PA). Those with needs outside the scope of practice of the NP are seen by the NP working in consultation or collaboration with the emergency physician, or they are referred to a physician (and seen by either the emergency physician or the PA). In the SOGH emergency department, each member of the team works toward their full scope and is supported by the other team members. The "patient first" and "no wait" culture enables the team to flex to meet patients' needs. The team is providing care to a patient population that has increased at least 30 per cent since 2008, yet wait times, length of stay and "left, not seen" rates have declined to enviable levels - all without a significant increase in baseline staffing. With assistance from PAs, emergency physicians can now focus on patients with the most acute needs, and they have more time for consultation with team members. NPs regard the opportunity to consult with emergency physicians and PAs as a key benefit of the current model. Bringing NPs and PAs into the model has been an extremely successful move. The author reports that patients like it, too, giving high ratings to their overall care experience. The authors states that she believes that these positive assessments are evidence of good care from a high-functioning team, and that the model maximizes the strength and efficiency of the team, which benefits from the contributions of all its members.</p>	<p>Dunlop, K. (2011). A team designed to meet patients' needs. <i>Canadian Nurse</i>, 107(1), 36.</p>

No.	Description	Reference
10	<p>In some sub-Saharan African countries non-physician clinicians have to perform major general surgery without medical officers and surgeons. The safety of this practice has not been established. The aim of this study was to evaluate the contribution of clinical officers (COs) to major general surgery at Zomba Central Hospital. Zomba Central Hospital is one of four central hospitals in Malawi and is a teaching hospital of the Malawi College of Health Sciences for Clinical Officers. It serves as the district hospital for the Zomba District including Zomba City (670,000 population) and as the referral hospital for the south-eastern zone. The total catchment population is 2.6 million people. During the study period the surgical section of the Department of Surgery and Orthopaedics was staffed with an average of one surgeon and four COs. There were no medical officers. Malawi is one of five sub-Saharan countries where non-physician clinicians (NPCs) perform major surgery. They are called clinical officers (COs) and undergo a three-year pre-service training period followed by a one-year internship. Their formal practical surgical training is limited to a three-month rotation in general surgery and obstetrics and gynaecology. After graduating they are able to perform minor surgical and obstetric procedures including caesarean sections. There is no postgraduate training programme which provides formal theoretical or academic surgical training. Thus, most of the COs' surgical skills are acquired through on-the-job instruction by supervisors with varying levels of surgical expertise. At central hospitals, COs work alongside specialists and make a significant contribution to all aspects of surgical care. The authors performed a retrospective five-year period study during 2003-2007. The perioperative outcome for three procedures was analysed. During the study 2931 major general surgical procedures were performed: 1437 (49%) by surgeons; 366 (12.5%) by COs assisted by surgeons; and 1128 (38.5%) by COs alone. COs performed 50% of prostatectomies, ventriculo-peritoneal-shuntings (VP-shunting) and strangulated hernia repairs with bowel resection alone. Baseline parameters and perioperative outcomes of the patients who underwent operations with surgeons present (as operator or assistant, 'surgeon group') or patients operated by COs alone ('CO group') were similar. For VP-shunting, postoperative mortality rates, wound infection rates, rates of early shunt revision and shunt removal were not statistically different between the two groups. The average postoperative hospital stay for the group as a whole was nine days (3-35) with a significantly shorter hospital stay in the surgeon group (8 versus 10 days, $P = 0.03$). Within the study period nine additional shunt revisions and six shunt explants were performed in patients who had been re-admitted to our institution. Of these, the number primarily operated by COs alone was not significantly different from those in which a surgeon was present during the VP-shunting (5 versus 4, $P = 0.74$, and 4 versus 2, $P = 0.44$, respectively). For patients with strangulated hernia who were undergoing hernia repair with bowel resection and anastomosis, the overall wound infection rate was 18.9%. Only one patient in the CO group developed an entero-cutaneous fistula which was successfully treated conservatively. In the group as a whole, three patients (5.7%) required re-operation for postoperative peritonitis (two) or bowel ischemia (one). Overall, the median postoperative hospital stay was 10 (5-60) days. The postoperative mortality rate was 3.8%. There was no statistically significant difference between the CO group and the surgeon group for any of the parameters measured. For patients who underwent transvesical prostatectomy for BPH, in the CO group, 19.5% of the patients received a perioperative blood transfusion, compared to only 9.9% in the surgeon group ($P = 0.06$). An analysis of the group as a whole revealed a high postoperative infection rate of 28.5%. Temporary urine leakage via the incision site was noted in 9.8% of the patients and 5.6% required re-operation, mostly for removal of intravesical blood clots or secondary bladder closure. The combined perioperative mortality rate was 4.2% (9/214). In cases operated by COs alone, postoperative hospital stay was slightly longer than in the group where a surgeon was present (16 versus 15 days, $P = 0.05$). No other perioperative outcome parameter differed between the two groups of operators. In a subgroup analysis of the surgeon group there was no significant difference in outcomes for any of the three procedures, whether the surgeon participated as operator or assistant to a CO. The authors conclude that COs can safely perform major general surgery when adequate training and supervision are provided.</p>	<p>Wilhelm, T. J., Thawe, I. K., Mwatibu, B., Mothes, H., & Post, S. (2011). Efficacy of major general surgery performed by non-physician clinicians at a central hospital in Malawi. <i>Tropical Doctor</i>, 41, 71-75.</p>

No.	Description	Reference
11	<p>BACKGROUND: Residency reform in the form of work hour restrictions has forced academic medical centers to develop alternate models of care to provide inpatient care. One such model is the use of physician assistants (PAs) with hospitalists. However, these models of care have not been widely evaluated. OBJECTIVE: To compare the outcomes of inpatient care provided by a hospitalist-PA (H-PA) model with the traditional resident based model.</p> <p>The H-PA team consisted of an attending physician (always a hospitalist) paired with one PA; for some patients (about half), the attending served a supervisory role for the PA; the attending serves as the sole care provider for the remaining patients. Traditional resident teams consisted of an attending physician (a hospitalist, a non-hospitalist general internist, or a specialist) paired with a senior resident, two interns, and two to three medical students; the attending physician served an supervisory role for all patients. Both types of team received patients admitted through the emergency room, clinics, and other hospitals. DESIGN, SETTING and PATIENTS: We conducted a retrospective cohort study of 9681 general medical (GM) hospitalizations between January 2005 and December 2006 using a hospital administrative database. We used multivariable mixed models to adjust for a wide variety of potential confounders and account for multiple patient visits to the hospital to compare the outcomes of 2171 hospitalizations to H-PA teams with those of 7510 hospitalizations to resident teams (RES). MEASUREMENTS: Length of stay (LOS), charges, readmission within 7, 14, and 30 days and inpatient mortality. RESULTS: Inpatient care provided by H-PA teams was associated with a 6.73% longer LOS ($P = 0.005$) but charges, risk of readmission at 7, 14, and 30 days and inpatient mortality were similar to resident-based teams. The increase in LOS was dependent on the time of admission of the patients. CONCLUSIONS: H-PA team-based GM inpatient care was associated with a higher LOS but similar charges, readmission rates, and inpatient mortality to traditional resident-based teams, a finding that persisted in sensitivity analyses.</p>	<p>Singh, S., Fletcher, K. E., Schapira, M. M., Conti, M., Tarima, S., Biblo, L. A., & Whittle, J. (2011). A comparison of outcomes of general medical inpatient care provided by a hospitalist-physician assistant model vs. a traditional resident-based model. <i>Journal of Hospital Medicine</i>, 6(3), 122-130.</p>

No.	Description	Reference
12	<p>Background: Recent increases in orthopedic surgical services in Canada have added further demand to an already stretched orthopedic workforce. Various initiatives have been undertaken across Canada to meet this demand. One successful model has been the use of physician assistants (PAs) within the Winnipeg Regional Health Authority (WRHA). This study documents the effect of PAs working in an arthroplasty practice from the perspective of patients and health care providers. The authors also describe the costs, time savings for surgeons and the effects on surgical throughput and waiting times. The addition of PAs to the Concordia Joint Replacement Group (CJRG) team has allowed a single surgeon to run two rooms during a single operating day, increasing the volume from three to seven primary joints per day. This was accomplished by using one physician assistant per room, with each room having its own dedicated nursing team and anesthesiologist. While the surgeon operates in one room with assistance from the first physician assistant, the second physician assistant helps to position, prepare and drape the next patient in the second room. On completion of the first operation, the surgeon leaves the first room to immediately start operating in the second room. When the surgeon leaves the first room, the first physician assistant closes the incision, completes the paperwork and assists with room changeover. Methods: The authors calculated time savings by the use of a daily diary kept by the PAs. Surgeons', residents', nurses' and patients' opinions about PAs were recorded by use of a self-administered questionnaire. They calculated costs using forgone general practitioner (GP) surgical assist fees and salary costs for PAs. They obtained information about surgical throughput and wait times from the WRHA waitlist database. Results: In this study, PAs "saved" their supervising physician about 204 hours per year; this time can be used for other clinical, administrative or research duties. Physician assistants are regarded as important members of the health care team by surgeons, nurses, orthopedic residents and patients. When the authors compared the billing costs with those that would have been generated by the use of GP surgical assists, PAs were essentially cost neutral. Furthermore, they potentially freed GPs from the operating room to spend more time delivering primary care. The authors found that use of the double operating room model facilitated by PAs increased the surgical throughput of primary hip and knee replacements by 42%, and median wait times decreased from 44 weeks to 30 weeks compared with the preceding year. Conclusion: Physician assistants integrate well into the care team and can increase surgical volumes to reduce wait times in a cost-effective manner.</p>	<p>Bohm, E. R., Dunbar, M., Pitman, D., Rhule, C. & Araneta, J. (2010). Experience with physician assistants in a Canadian arthroplasty program. <i>Canadian Journal of Surgery</i>, 53(2), 103-108.</p>

No.	Description	Reference
13	<p>The existing literature on the use of mid-level providers (MLPs) in inpatient venues is quite limited, and a recent review, while suggesting that the existing literature does describe benefits of MLPs in the inpatient setting, also states that the overall quality of the evidence is quite poor and that many studies suffer from significant limitations, including small populations, limited patient mixes, use of selected settings, and short durations of outcome assessment. There have been other studies examining the use of MLPs in the inpatient setting in internal medicine. Some of these studies have suggested that MLP-based models result in equivalent outcomes and efficiency to traditional teaching or nonteaching physician-only models. There are two important caveats, however, that must be considered. The total resources required for such models may be quite high, especially taking into account the costs of 24/7 coverage and physician backup of the MLPs, and most importantly there is almost no literature that robustly examines ultimate clinical outcomes in these models. Notably, while the evidence base in internal medicine is not robust, many studies have described successful use of MLPs in non-internal medicine inpatient settings. The reasons for this success is debatable, but it may be that MLPs are more successful in settings where the care is either more protocol-driven or where there is less diagnostic and therapeutic complexity. Given the paucity of data, it is clear that further research is needed on the role of MLPs in hospital medicine. While waiting for such evidence to appear, it may be worthwhile to reflect on the recent experience of three major medical centers. A recent article (see entry XX, below) described five hospitalist models at major academic medical centers across the country. Two of the institutions described at the time (University of Michigan Health System, Ann Arbor, MI; and Brigham and Women's Hospital, Boston, MA) utilized MLPs as a major element of their staffing of nonresident hospitalist services while another had previously used MLPs as part of its model but phased them out about one year prior to publication of the article. Recently one of these institutions (Michigan) has chosen to phase out MLPs. At Michigan, a four-year experience with PAs on a general-medicine focused hospitalist service eventually led to the conclusion that continued use of PAs was not cost-effective. Significant barriers to success included a steep learning curve and the significant time required before PAs developed sufficient autonomy and efficiency in caring for a highly complex heterogeneous patient population. A key point is that in each institution, MLPs continue to play an important role in some specialty inpatient areas such as Hematology/ Oncology and Bone Marrow Transplant, which is where MLPs have traditionally found their niche in inpatient Internal Medicine. These "focus shops" allow MLPs to develop a niche and expertise in a specialized area, where they may become more autonomous and efficient than house staff. Thus these settings may be more appropriate for MLPs than a heterogeneous general medicine inpatient setting. The authors note they have some limited data from the Society of Hospital Medicine (SHM) annual survey that looks at MLPs in hospital medicine but the number of respondents for most data elements is less than 70, making generalizability difficult. Nonetheless, the data suggest that MLPs in hospital medicine average about 60% to 75% of the productivity of a physician when measured by encounters, although there is wide variability depending on the employment model (academic vs. multispecialty group). Importantly, the existing data do not provide any measure of how much physician input is provided to these MLPs but the authors suspect that in most models there is some physician time and input. If one presumes that the MLPs bill independently and collect 85% of the physician fee schedule for a Medicare population, then collections would be about 50% to 65% of a typical physician. Given that median total compensation including benefits from the SHM survey was \$120,000 for MLPs and \$216,000 for physicians—about a 55% ratio—this would argue for potential financial neutrality when substituting MLPs for physicians in a 2:1 ratio but only if one presumes they require no physician supervision, which in the authors' own experience is not likely in a general medicine population. The authors conclude that while some literature exists that suggests that MLPs can successfully be used in the inpatient internal medicine setting, it is important to note that the evidence is quite limited and cannot be generalized across all care settings and patient populations. There is an urgent need to gather more data and share our collective experiences to better inform our decision-making before we state that MLPs are the solution to workforce shortages in hospital medicine. In addition, existing data and experience suggest that MLPs may not be a cost-effective workforce solution for complex general medical patients who require significant physician input. The authors believe that redesigning the clinical training of MLPs to focus on inpatient skills may hold promise and encourage interested parties to consider developing partnerships with MLP training programs and hospital medicine groups, as a way to build a more robust and successful hospital medicine MLP workforce.</p>	<p>Parekh, V. I. & Roy, C. L. (2010). Nonphysician providers in hospital medicine: Not so fast. <i>Journal of Hospital Medicine</i>, 5(2), 103-106.</p>

No.	Description	Reference
14	<p>Objective: The aim of this study was to evaluate the quality of care provided by physician assistants or nurse practitioners (i.e., midlevel providers [MLPs]) in acute asthma, as compared with that provided by physicians. Methods: The authors performed a secondary analysis of the asthma component of the National Emergency Department Safety Study. They identified emergency department (ED) visits for acute asthma in 63 urban EDs in 23 US states between 2003 and 2006. Quality of care was evaluated based on 12 guideline-recommended process-of-care measures, a composite guideline concordance score, and two outcome-of-care measures (admission and ED length of stay). Results: Of the 4,029 patients included in this analysis, 3,622 (90%) were seen by physicians only, 319 (8%) by MLPs supervised by physicians, and 88 (2%) by MLPs not supervised by physicians. Performance rates for supervised MLPs were generally similar to physicians' rates; however, performance rates for unsupervised MLPs were generally lower than physicians' rates. After adjustment for patient mix, unsupervised MLPs were less likely to administer inhaled β-agonists within 15 minutes of ED arrival (odds ratio [OR], 0.2; 95% confidence interval [CI], 0.1-0.7), less likely to prescribe systemic corticosteroids in the ED (OR, 0.4; 95% CI, 0.2-0.9), and were more likely to prescribe inappropriate antibiotics at discharge (OR, 2.1; 95% CI, 1.1-4.1), as compared with physicians. Overall, their composite guideline concordance score was lower than that of physicians (-6 points; 95% CI, -9 to -3 points). Patients cared for by unsupervised MLPs had a shorter ED length of stay and were less likely to be admitted, as compared with patients cared for by physicians or supervised MLPs. Supervised MLPs provided similar quality of care to that of physicians. Conclusions: The MLPs were involved in 10% of ED patients with acute asthma and provided independent care for two percent of these patients. Compared with care provided by physicians or by supervised MLPs, there are opportunities for improvement in unsupervised MLP care.</p>	<p>Tsai, C.-L., Sullivan, A. F., Ginde, A. A., Camargo, C. A. (2010). Quality of emergency care provided by physician assistants and nurse practitioners in acute asthma. <i>The American Journal of Emergency Medicine</i>, 28(4), 485-491.</p>

No.	Description	Reference
15	<p>Objective: Census data published by professional organizations indicate an upward trend in the number of physician assistants (PAs) working in many specialty fields, including the subspecialty of trauma surgery. As the role of hospital-based PAs and nurse practitioners (NPs) continues to evolve, greater understanding of these roles will help identify future employment trends for these professions. The purpose of this study is to determine the prevalence of PAs and NPs in US trauma centers, to document their roles, and to identify their potential future utilization by trauma centers. Methods: A survey was mailed to 464 directors of major trauma centers in the United States. The survey was designed to evaluate trauma centers' utilization of PAs/NPs. Respondents were asked to identify specific daily tasks of PAs/NPs and to indicate potential for their future utilization. Results: Two hundred forty-six (246) of 464 surveys were returned, for a response rate of 53%. Approximately one-third (34.6%) of respondents reported utilization of NPs and 32.9% reported utilization of PAs on their hospital trauma service. More American College of Surgeons (ACS)-verified trauma facilities utilized PAs/NPs than did nonverified facilities; and Level I trauma centers used significantly more PAs/NPs than did Level II trauma centers. Nineteen percent (19%) of respondents who did not currently utilize PAs/NPs indicated that they intended to do so in the future. The majority of facilities utilized PAs/NPs to assist with trauma resuscitation and in performing traditional tasks, including obtaining and dictating histories and physical findings, participating in rounds on the general medical floor, and dictating discharge summaries. Fewer than half of reporting facilities indicated that PAs/NPs performed more invasive procedures, such as inserting arterial lines, central lines, chest tubes, and intracranial pressure monitors. The majority of responding trauma centers utilized PAs/NPs in trauma resuscitation and in traditional tasks of a surgical PA/NP. A number of these facilities reported that PAs/NPs performed invasive procedures such as inserting chest tubes (38%), arterial lines (31%), central lines (37%), and intracranial pressure monitors (7%). In addition to caring for trauma patients, 55.2% of trauma PAs/NPs provided direct patient care to nontrauma, critical care patients. Only 7.5% of PAs/NPs utilized on responding trauma services functioned as members on other specialized rapid response teams (eg, code blue, sepsis, and stroke). Conclusions: PAs and NPs are increasingly utilized as clinicians in the surgical subspecialty of trauma. In most trauma centers, PAs/NPs are utilized to complete the traditional duties of a surgical PA/NP, with fewer performing invasive procedures. Finally, 19% of responding trauma centers who do not currently utilize PAs/NPs state that they intend to in the future, indicating the potential for continued job growth for PAs/NPs in trauma care. This evaluation of the utilization of PAs/NPs in direct care to trauma patients indicates acceptance of PAs/NPs in trauma staffing models.</p>	<p>Nyberg, S. M., Keuter, K. R., Berg, G. M., Helton, A. M., & Johnston, A. D. (2010). A national survey: Acceptance of physician assistants and nurse practitioners in trauma centers. <i>Journal of the American Academy of Physician Assistants</i>, 23(1), 35-37, 41.</p>

No.	Description	Reference
16	<p>Objective: The authors sought to assess the impact of the integration of the new roles of primary health care nurse practitioners (NPs) and physician assistants (PAs) on patient flow, wait times and proportions of patients who left without being seen (LWBS) in six Ontario emergency departments (EDs). Physician assistants were introduced to Ontario through this project as an unregulated provider, and work without medical directives under the supervision of a registered physician who was responsible for all patient care. Unlike NPs, PAs are precluded from taking independent medical actions. The specific duties of each PA varied by site, but, in general, PAs saw patients with a wider range of acuity levels than NPs. Primary health care NPs are regulated health professionals registered with the College of Nurses of Ontario (CNO). As per CNO's directives, NPs practise autonomously for CTAS-IV and -V patients and work in conjunction with a physician to see CTAS-III or higher acuity patients. Physicians interacted with both NPs and PAs for interpreting any diagnostic imaging and for the management of CTAS-III or higher acuity patients. All members of the new staff were expected to comply with ED policies and guidelines. In some centres with higher volumes, an NP and PA occasionally worked simultaneously, although this was uncommon. Methods: The authors performed a retrospective review of health records data on patient arrival time, time of initial assessment by a physician, time of discharge from the ED and discharge status. Results: Whether a PA or NP was directly involved in the care of patients or indirectly involved by being on duty, the wait times, lengths of stay and proportion of patients who left without being seen were significantly reduced. After adjustment for hospitals, time of day and acuity, when a PA or NP were directly involved in patients' care, patients were 1.6 (95% confidence interval [CI] 1.3-2.1, $p < 0.05$) and 2.1 (95% CI 1.6-2.8, $p < 0.05$) times more likely to be seen within the wait time benchmarks, respectively. After adjustment, when a PA was on duty (but not being directly involved with the patients' care), the odds of a patient being assessed within the wait time benchmark were 1.9 times higher than when a PA was not on duty (95% CI 1.6-2.4, $p < 0.01$). Lengths of stay were 30.3% (95% CI 21.6%-39.0%, $p < 0.01$) and 48.8% (95% CI 35.0%-62.7%, $p < 0.01$) lower when PAs and NPs, respectively, were involved; the mean LOS changed from 262.4 minutes to 182.9 minutes when a PA was involved. Although not as dramatic an effect, having a PA or NP on duty also had a statistically significant effect (PA: 95% CI 3.6% - 14.1% $p < 0.01$; NP: 95% CI 4.6%-13.9%, $p < 0.01$) on the mean LOS of patients. When a PA or an NP was on duty, the proportion of patients who left without being seen was significantly reduced. The absolute improvements, not controlling for hospital or acuity, were 24.6% for PAs (the LWBS rate decreased from 6.5% to 4.9%) and 17.6% for NPs (the LWBS rate dropped from 5.1% to 4.2%). When a PA was on duty, controlling for hospital, time of day and acuity, the likelihood that a patient left without being seen was less than half than when a PA was not on duty (44%, 95% CI 31% - 61%, $p < 0.01$). Conclusion: The addition of PAs or NPs to the ED team can improve patient flow in medium-sized community hospital EDs. Given the ongoing shortage of physicians, use of alternative health care providers should be considered. These results require validation, as their generalizability to other locations or types of EDs is not known.</p>	<p>Ducharme, J., Alder, R. J., Pelletier, C., Murray, D. & Tepper, J. (2009). The impact on patient flow after the integration of nurse practitioners and physician assistants in 6 Ontario emergency departments. <i>Canadian Journal of Emergency Medicine</i>, 11(5), 455-461.</p>

No.	Description	Reference
17	<p>Background: Optimizing human resources at trauma facilities may increase quality of care. The purpose of this study was to assess whether staffing changes within a Level I trauma center improved mortality and shortened length of stay (LOS) for trauma patients. Methods: Mortality, hospital LOS, and intensive care unit LOS were evaluated during three time periods: trauma service coverage by in-house general surgery residents and attendings ("group 1"), the creation of a core trauma panel with in-house trauma surgeons ("group 2"), and the addition of physician assistants (PAs) to the core trauma panel ("group 3"). Logistic regression and χ^2 tests were used to compare mortalities, and multiple linear regression, t-tests, and median tests were used to compare LOS. Results: There were 15,297 adult patients with trauma included in the analysis. After adjustment for transfers-in, mechanism of injury, injury severity score, age, and head injury, the presence of in-house trauma surgeons (group 2) decreased the following compared with group 1: overall mortality (3.12% vs. 3.82%, $p = 0.05$), mortality in the severely injured (11.41% vs. 14.83%, $p = 0.02$), and median intensive care unit LOS (3.03 days vs. 3.40 days, $p = 0.006$). The introduction of PAs to the core trauma panel (group 3 vs. group 2) decreased overall mortality (2.80% vs. 3.76%, $p = 0.05$), and reduced mean and median hospital LOS (4.32 days vs. 4.69 days, $p = 0.05$; and 3.74 days vs. 3.88 days, $p = 0.02$, respectively). Conclusion: The presence of in-house core trauma surgeons and PAs improves management and outcome of critically injured trauma patients within a level I trauma center.</p>	<p>Mains, C., Scarborough, K., Bar-Or, R., Hawles, A., Huber, J., Bourg, P., & Bar-Or, D. (2009). Staff commitment to trauma care improves mortality and length of stay at a level I trauma center. <i>The Journal of Trauma</i>, 66(5), 1315-1320.</p>
18	<p>Purpose: To identify characteristics and outcomes of patients who use physician assistants and nurse practitioners (PA/NPs) as a usual source of care. Methods: Cross sectional analysis using the telephone and mail surveys of the Wisconsin Longitudinal Study (WLS), a prospective cohort study of Wisconsin high school graduates and selected siblings ($n = 6,803$). Findings: Individuals from metropolitan (OR = 0.40, 95% CI = 0.29-0.54) and micropolitan (OR = 0.65, 95% CI = 0.44-0.95) areas were less likely to utilize PA/NPs than participants from rural locations. Participants without insurance or with public insurance other than Medicare were more likely than those with private insurance to utilize PA/NPs (OR = 1.71, 95% CI = 1.02-2.86). Patients of PA/NPs were more likely to be women (OR = 1.77, 95% CI = 1.34-2.34), younger (OR = 0.95, 95% CI = 0.92-0.98) and have lower extroversion scores (OR = 0.81, 95% CI = 0.68-0.96). Participants utilizing PA/NPs reported lower perceived access ($\beta = -0.22$, 95% CI = -0.35-0.09) than those utilizing doctors. PA/NP utilization was associated with an increased likelihood of chiropractor visits (OR = 1.57, 95% CI = 1.15-2.15) and decreased likelihood of a complete health exams (OR = 0.74, 95% CI = 0.55-0.99) or mammograms (OR = 0.65, 95% CI = 0.45-0.93). There were no significant differences in self-rated health or difficulties/delays in receiving care. Conclusions: Populations served by PA/NPs and doctors differ demographically but not in complexity. Though perceived access to care was lower for patients of PA/NPs, there were few differences in utilization and no differences in difficulties/delays in care or outcomes. This suggests that PA/NPs are acting as primary care providers to underserved patients with a range of disease severity, findings which have important implications for policy, including clinician workforce and reimbursement issues.</p>	<p>Everett, C. M., Schumacher, J. R., Wright, A., & Smith, M. A. (2009). Physician assistants and nurse practitioners as a usual source of care. <i>The Journal of Rural Health</i>, 25(4), 407-414.</p>

No.	Description	Reference
19	<p>This study describes a comparative analysis of replacing medical residents with physician assistants and hospitalists on patient outcomes in a community hospital. Thirty resident house staff and 9.5 full-time equivalent attending physicians were replaced by 23 PAs and 12.5 full-time equivalent attending physicians. As in the residency model, PAs were assigned to general medical floors, the medical ICU, the coronary care unit, the subacute/intermediate care unit, and monitored settings (telemetry unit) on a rotational basis. In contrast to the medical residency model, in which an attending physician was available on the medical floor for direct supervision of house staff during teaching rounds and for indirect supervision during off-hours, in the PA-hospitalist model, an attending physician was available for direct supervision of PAs for each team during regular hours, and an in-house attending physician was available during all off-hours and on weekends. There was no difference between the two models in ICU/coronary care unit coverage during the daytime. However, during off-hours on weekdays and on weekends, one subspecialty fellow/attending physician (not necessarily ICU trained) was available in house to supervise residents in the residency model versus an intensivist (critical care-trained physician) in the PA-hospitalist model. The PAs participated in all aspects of patient assessment, diagnostic testing, and therapy. They followed their assigned patients from admission to discharge from the medical service. All PA activities were supervised by hospitalists (internists and/or intensivists) who were available 24 hours a day, seven days a week. Hospitalists comprised academic faculty (licensed attending physicians) whose role was to provide didactic teaching and round-the-clock supervision of PAs in acute care medicine, a model not very different from the traditional medical residency training model. Physician assistants received attending-supervised training in invasive procedures (eg, central lines, arterial lines, Swan-Ganz catheterization, endotracheal intubation). Physician assistants participated in all cardiopulmonary resuscitation activities throughout the hospital under the direct supervision of an ICU attending. Prospective data during the physician assistants-hospitalists service for two years was compared with two years of retrospective data of the medical residents model. Outcome measures included mortality, adverse events, readmissions, and patient satisfaction. For physician assistants-hospitalists versus medical residents models, all cause and case mix index-adjusted mortality was 107/5508 (1.94%) and 0.019 versus 156/5458 (2.85%) and 0.029, respectively ($P \leq .001$). The adverse event cases were nine versus five ($P = .29$), and the readmission rate within 30 days was 64 versus 69 ($P = .34$). Patient satisfaction was 95% versus 96% ($P = .33$). Quality of care provided by the physician assistants-hospitalists model was equivalent. All-cause and case mix index-adjusted mortality was significantly lower during the physician assistants-hospitalists period. Although the application of these findings to other institutions requires further study, the authors found no intrinsic barriers that would impede implementation elsewhere.</p>	<p>Dhuper, S. & Choski, S. (2009). Replacing an academic internal medicine residency program with a physician assistant-hospitalist model: A comparative analysis study. <i>American Journal of Medical Quality</i>, 1(2), 132-139.</p>

No.	Description	Reference
20	<p>The increasing use of physician assistants (PAs) in surgical settings is part of a continuing trend of PA specialization, and many graduate medical education (GME) programs in teaching hospitals have hired PAs to augment physician housestaff duties. PAs have been shown to be effective in these roles by contributing to the continuity of care and enhancement of resident educational experiences. The increasing use of PAs in hospital settings and on inpatient units comes as part of a larger trend of PA specialization. According to the American Academy of Physician Assistants census data, over 65% of the nation's estimated 73,000 PAs work in specialties and subspecialties, and their distribution reveals a declining percentage working in primary care, from 50% in 1997 to 34.5% in 2008. Increasingly popular specialties for PAs include general surgery/surgical subspecialties (25%), emergency medicine (10%), the subspecialties of internal medicine (11%), and dermatology (4%). More than 8% work in orthopedics; only 2% are in obstetrics/gynecology. The percentage of PAs working in the surgical subspecialties has increased steadily. The most recent 5-year PA primary work setting data trend reveals a gradual increase in the percentage of PAs who work in intensive care units (from 1.9% to 2.3%), inpatient units (from 9% to 10.3%), and other hospital units (from 1.2% to 1.4%), with a gradual decrease in the number of PAs working in operating rooms (from 6.9% to 6.4%). The declining use of PAs as intraoperative surgical assistants seems to confirm the notion that their use in surgical residency training settings enables residents to spend more time in the operating room while PAs primarily provide perioperative patient care with oversight by staff attending physicians. One strategy for educating and training specialty PAs to help augment perioperative surgical workforce needs for acute and critically ill patients is PA postgraduate training programs, which are typically offered as formal one year experiences following entry-level PA education and based on the GME model. Many academic health centers (AHCs) are well positioned to host such educational programs by collaborating with PA educators to develop additional surgical postgraduate training programs. The authors propose a model to produce an increased supply of specialty-trained PAs to serve as permanent hospital-based clinicians who could enable surgical residency training programs to meet critical resident education and operative experience needs by providing team-oriented and physician-supervised perioperative care.</p>	<p>Jones, P. E., & Cawley, J. F. (2009). Workweek restrictions and specialty-trained physician assistants: Potential opportunities. <i>Journal of Surgical Education</i>, 66, 152-157.</p>

No.	Description	Reference
21	<p>The authors assessed whether physician assistant (PA) and nurse practitioner (NP) utilization increases liability. In total, 17 years of data compiled in the United States National Practitioner Data Bank (NPDB) was used to compare and analyze malpractice incidence, payment amount and other measures of liability among doctors, PAs and advanced practice nurses (APNs). From 1991 through 2007, 324,285 NPDB entries were logged, involving 273,693 providers of interest. Significant differences were found in liability reports among doctors, PAs and APNs. Physicians made, on average, malpractice payments twice that of PAs but less than that of APNs. During the study period the probability of making a malpractice payment was 12 times less for PAs and 24 times less for APNs. The rate and amount of malpractice payments was compared; a ratio of malpractice payments per total number of active providers in 2006 (the most recent year that demographic data was available for all provider groups) for each provider type was computed. There were 12,495 payments for 774,883 physicians, 113 payments for 63,609 PAs and 264 payments for 268,293 APNs. These ratios were 1:62, 1: 563 and 1:1,016, respectively. The number of malpractice payments during the 17-year period per average number of active providers within the 17-year study period was also calculated. There was one payment report for every 2.7 active physicians, one for every 32.5 active PAs and one for every 65.8 APNs (combined active and non-active). Assuming one malpractice payment per provider, 37 percent of physicians, 3.1 percent of PAs and at least 1.5 percent of APNs would have made a malpractice payment during the 17-year period. For all three providers, missed diagnosis was the leading reason for malpractice report, and female providers incurred higher payments than males. Trend analysis suggests that the rate of malpractice payments for physicians, PAs and APNs has been steady and consistent with the growth in the number of providers. There were no observations or trends to suggest that PAs and APNs increase liability. If anything, they may decrease the rate of reporting malpractice and adverse events. From a policy standpoint, it appears that the incorporation of PAs and APNs into American society has been a safe and beneficial undertaking, at least when compared to doctors.</p>	<p>Hooker, R. S., Nicholson, J. G., & Le, T. (2009). Does the employment of physician assistants and nurse practitioners increase liability? <i>Journal of Medicine Licensure and Discipline</i>, 95(2), 6-16.</p>

No.	Description	Reference
22	<p>Study Objectives: The American College of Emergency Physicians (ACEP) endorses emergency medicine (EM) residency training as the only legitimate pathway to an EM career, yet the economic reality of Iowa's rural population will continue to support the hiring of non-board certified physicians. Rural communities struggle to support emergency physicians because of their smaller populations and inadequate patient volumes. This survey will determine the minimum population needed to support an emergency physician and examine the market forces that contribute to emergency department (ED) staffing with emergency physicians versus family physicians in Iowa. This project was supported by an ACEP Chapter Development Grant. Methods: The research team identified a member of the ED administration at all 119 Iowa hospitals and asked the following: 1. What are the qualifications of your emergency staff? a. Do you hire emergency physicians only? b. Do you hire family physicians only? c. Do you hire a combination of family and emergency physicians? 2. What area of the state do you provide emergency medical care to? 3. What are your reasons for hiring your choice of ED staff in question 1? The population of the catch area of each hospital was calculated to determine the minimum population that supports the ED categories listed in question 1. Results: 119 of 119 hospitals responded to this survey (100% response rate). It was found that only 14 (11.8%) of Iowa emergency departments exclusively utilize emergency physicians in order to staff their ED. 76 (63.9%) utilize a combination of emergency physicians and family physicians, while 27 (22.7%) of Iowa hospitals solely use family physicians in their ED. It was also found that 46 (38.7%) of Iowa emergency departments utilize physician's assistants or NP's in solo coverage. It was determined that the minimum population in the state of Iowa to support exclusive BCP coverage is 25,136, with a mean population of 88,143. Also, the minimum population to support a combination (emergency physicians and family physicians) is 1465, with a mean population of 18,244. The most common reasons cited by emergency departments hiring only family physicians included recruiting difficulties of emergency physicians, the low patient census did not require emergency physician specialty training, and the hospital was satisfied with the quality of care provided by family physicians. Emergency departments that hired a combination of family physicians and emergency physicians cited factors that included the ability to increase recruiting of family physicians for local clinic with the incentive of no required ED coverage, less ED call increases time off for local physicians, and the care of patients in clinic increases with family physicians not being called away from clinic. Finally, emergency departments that hired only emergency physicians cited factors that included the quality of care provided by emergency physicians, high patient acuity best supported by emergency physicians, and a high patient census best supported by emergency physicians. Conclusion: Many emergency departments in Iowa, a predominantly rural state, remain staffed by family physicians. In fact, without the contribution of family physicians, large areas of the state would be unable to provide adequate emergency care. Emergency physicians remain concentrated in urban areas of the state, where patient volumes and acuity support their hiring.</p>	<p>House, H., Young, R., & DeRoo, E. (2009). Penetration of board certified emergency physicians into rural emergency departments in Iowa. <i>Annals of Emergency Medicine</i>, 54, S64.</p>

No.	Description	Reference
23	<p>To understand trends in emergency medicine and interprofessional roles in delivering this care, we analyzed a 10-year period (1995 – 2004) by provider, patient characteristics, and diagnoses. The focus was on how doctors, physician assistants (PAs) and nurse practitioners (NPs) share emergency medicine visits. The National Hospital Ambulatory Medical Care Survey of over 1 billion “weighted” emergency room visits for 1995 to 2004 was analyzed. The majority of patients were female (53.2%); the mean age of all patients was 35.3 years old. By 2004, physicians were the provider of record for emergency visits at 92.6%, with PAs at 5.7% and NPs at 1.7%. Emergency visits increased for all three providers over the ten years with PA growth doubling during this same period (patients seen by PAs increased significantly over those seen by physicians or NPs, from 3.5% 7.9%). Medications were prescribed for three-quarters of the visits and were consistent in the mean number of prescriptions written across the three prescribers. No significant differences emerged when urban and rural settings were compared. Expansion of the roles and interprofessional care provided by NPs and PAs include increasing acceptance, clarification of legal and regulatory aspects of practice, shared roles, team approaches to shortages of fully-trained doctors, and the limitation of working hours of physician postgraduate trainees. The US forecast for emergency department visits is expected to outpace the growth of the population and the supply of emergency medicine providers. In view of an increasing emergency medical demand and a continuing shortage of physician personnel, policies are needed for workforce planning to meet the demand. The degree to which 110,000 or more NPs and PAs are utilized and work together as part of interprofessional teams is only now becoming understood. Interprofessional in this context means that more than one branch of knowledge (e.g., nursing and medicine) is integrated to the approach of emergency medicine services). In the US, PAs and NPs are increasingly used in roles traditionally dominated by doctors and produce services that both overlap and complement each other. A national study on hospital outpatient services found that PA/NPs produce about 10% of services compared to doctors in the same setting. Many of these visits involved working together with a doctor or another PA/NP in a collaborative role. Unfortunately the literature on these collaborative efforts is sparse and it has been demonstrated that national databases on provider services substantially underreport the role of PAs and NPs due to inherent problems with how the data is collected.</p>	<p>Hooker, R. S., CIPHER, D. J., Cawley, J. F., Herrmann, D., & Melson, J. (2008). Emergency medicine services: Interprofessional care trends. <i>Journal of Interprofessional Care</i>, 22(2), 167-178.</p>

No.	Description	Reference
24	<p>This article discusses changes in the delivery of primary care relating to nurse practitioners (NPs) and physician assistants (PAs). The author notes that, in recent years, state laws and regulations have allowed more autonomy and practice privileges for NPs and PAs. Both PAs and NPs have gained prescribing authority throughout the United States, although rules vary from state to state. Payers have also increased access to reimbursement— for instance, Medicare reimburses PA and NP services at 85% of the Physician Fee Schedule. Although by law, PAs and NPs must still collaborate with a physician or work under physician supervision, the meaning of “collaboration” and “supervision” in practice is wide open. The author discusses topics including: a) the rapid rise of PAs and NPs; b) the retail health clinic model; c) filling gaps in care, and then goes on to discuss the impact of PAs and NPs on quality. With respect to the body of literature on nonphysician care delivery, the author notes: Unfortunately, research is lacking or inconclusive on many aspects of care delivery differences between physicians and nonphysicians. Investigation is complicated by such factors as the setting in which care is administered, the scope of the conditions that can be cared for, and the experience of the provider, which may influence how PA- and NP-delivered health care differs from physician-delivered health care. A Cochrane review reported that the available literature was inadequate to determine whether appropriately trained nurses can produce equally high-quality care as that of primary care physicians and equally good health outcomes for patients. Many studies had methodological limitations: Patient follow-up was one year or less, in general, and only one study was powered to assess equivalence of care. Various studies have certainly demonstrated that nonphysician clinicians can produce equally high-quality outcomes as that of physicians. However, the strongest body of evidence is derived from studying uncomplicated levels of care or care that was provided under the umbrella of physicians, according to a 2004 study. It will be important to examine the care delivered by nonphysician clinicians at the “outer edge” of their practice privileges and under conditions that are free of physician oversight.</p>	<p>Wilson, J. F. (2008). Primary care delivery changes as nonphysician clinicians gain independence. <i>Annals of Internal Medicine</i>, 149(8), 597-600.</p>
25	<p>PURPOSE The aim of this study was to assess whether the quality of diabetes care differs among practices employing nurse-practitioners (NPs), physician’s assistants (PAs), or neither, and which practice attributes contribute to any differences in care. METHODS This cross-sectional study of 46 family medicine practices from New Jersey and Pennsylvania measured adherence to American Diabetes Association diabetes guidelines via chart audits of 846 patients with diabetes. Practice characteristics were identified by staff surveys. Hierarchical models determined differences between practices with and without NPs or PAs. RESULTS Compared with practices employing PAs, practices employing NPs were more likely to measure hemoglobin A1c levels (66% vs 33%), lipid levels (80% vs 58%), and urinary microalbumin levels (32% vs 6%); to have treated for high lipid levels (77% vs 56%); and to have patients attain lipid targets (54% vs 37%) ($P \leq .005$ for each). Practices with NPs were more likely than physician-only practices to assess hemoglobin A1c levels (66% vs 49%) and lipid levels (80% vs 68%) ($P \leq .007$ for each). These effects could not be attributed to use of diabetes registries, health risk assessments, nurses for counseling, or patient reminder systems. Practices with either PAs or NPs were perceived as busier ($P = .03$) and had larger total staff ($P < .001$) than physician-only practices. CONCLUSIONS Family practices employing NPs performed better than those with physicians only and those employing PAs, especially with regard to diabetes process measures. The reasons for these differences are not clear.</p>	<p>Ohman-Strickland, P. A., Orzano, A. J., Hudson, S. V., Solberg, L. I., DiCiccio-Bloom, B., O’Malley, D., et al. (2008). Quality of diabetes care in family medicine practices: Influence of nurse-practitioners and physician’s assistants. <i>Annals of Family Medicine</i>, 6, 14-22.</p>

No.	Description	Reference
26	<p>Purpose: The Mount Sinai Surgical Residency program uses physician assistants and nurse practitioners, jointly termed non-physician practitioners (NPPs), to adhere to the 80-hour work-week restrictions implemented by Accreditation Council of Graduate Medical Education (ACGME) resident duty hour requirements initiated in 2003. A survey was performed to determine how the integration of NPPs into the surgical subspecialty teams has affected surgical residents' perceptions of their education and overall residency experience. The authors review the roles of NPPs within surgical specialty teams as well as their survey findings about NPP and resident impressions about the NPP role. The Mount Sinai Surgical Residency program in New York City recognizes the important role that NPPs play in resident education, both directly in clinical instruction and indirectly in decreasing their overall workload. The specific responsibilities of the surgical NPPs include managing preoperative and postoperative patients, assisting in procedures and the operating room (depending on the service), performing surgical consultations, participating in discharge planning, promoting wellness and patient education, and communicating with the entire surgical team. A daytime PA is assigned to each general surgery team. The PA works together with the residents to provide all inpatient floor work, see consults, and complete discharges. When residents on the team are scrubbed into the operating room, the PA will answer all forwarded pages. If a case in the operating room cannot be covered by the residents, the PA is available to assist. The general surgery teams are covered at night by a junior resident or an NP. An in-house senior resident always is on call for support. The subspecialty services all use their NPPs slightly differently, with some working jointly with only one physician and some practicing in the outpatient setting. Patient care decisions are made collaboratively by residents and NPPs. NPPs contribute more to the junior residents' education in direct clinical teaching (eg, nasogastric tube insertion or arterial catheter placement) and to all residents' patient coordination education (eg, how to expedite a physical therapy consult or home nursing services request). Methods: A survey was distributed to every surgical resident and inpatient NPP using a Likert scale for responses. The survey addressed general experiences about the NPP–resident relationship in regard to education, continuity of care, workload, communication, collaboration, role, and hierarchy. NPP responses were compared with resident responses through a Pearson chi-square test. Results: Sixty-six residents and 28 NPP responses were obtained. Overall, NPPs and residents have similar perceptions about the NPP function. Most NPPs and residents believe that having an NPP on the service decreases their workload (96.4% and 84.8%, respectively), and they believe that adequate communication and collaboration occurs between the NPPs and the residents (85.7% and 73.8% and 67.9% and 80.3%, respectively). Significantly more NPPs than residents feel that NPPs contribute to the residents' clinical education (75.0% vs. 38.5%, $p = 0.005$) and that NPPs provide better continuity of care (96.4% vs. 60.6%, $p = 0.002$). Although NPPs and residents believe that the NPP role is clearly defined, NPPs and residents have very different perceptions about where NPPs fall within the surgical hierarchy. Seventy-five percent of NPPs believe that they function at a senior resident level or above, whereas 90.5% of residents believe that NPPs function at the intern level or below ($p < 0.001$). Conclusions: The main role of the surgical NPP at the Mount Sinai Medical Center is to enhance the resident's educational experience by decreasing their workload, thereby adhering to ACGME and Bell Commission regulations, and increasing their time in the operating room. Not surprisingly, the authors' survey reveals that residents and NPPs both agree that NPPs do decrease the resident workload. Additionally, no differences were found between resident and NPP views about the NPP role (although they found a difference in where the groups believe that NPPs fall within that hierarchy). This important finding demonstrates that there does not seem to be a conflict of perceived roles and that both groups believe that good collaboration occurs on the surgical services. The authors found that at their institution, residents and NPPs agree that they work well together and that NPPs positively contribute to resident education. They recommend a service-specific orientation for the residents with each rotation to clarify NPP responsibilities and functions, thereby maximizing collaboration. With a firm understanding of the various roles of the NPPs, a cohesive, multidisciplinary group can be attained while enhancing surgical education.</p>	<p>Buch, K. E., Genovese, M. Y., Conigliaro, J. L., Nguyen, S. Q., Byrn, J. C., Novembre, C. L. & Divino, C. M. (2008). Non-physician practitioners' overall enhancement to a surgical resident's experience. <i>Journal of Surgical Education</i>, 65, 50-53.</p>

No.	Description	Reference
27	<p>Background The role of advanced registered nurse practitioners and physician assistants in emergency departments, trauma centers, and critical care is becoming more widely accepted. These personnel, collectively known as advanced practice providers, expand physicians' capabilities and are being increasingly recruited to provide care and perform invasive procedures that were previously performed exclusively by physicians. Objectives To determine whether the quality of tube thoracostomies performed by advanced practice providers is comparable to that performed by trauma surgeons and to ascertain whether the complication rates attributable to tube thoracostomies differ on the basis of who performed the procedure. Methods Retrospective blinded reviews of patients' charts and radiographs were conducted to determine differences in quality indicators, complications, and outcomes of tube thoracostomies by practitioner type: trauma surgeons vs advanced practice providers. Results A total of 55 records were identified that documented tube thoracostomy performed during the six-month study period. Of these, four records were excluded because of missing data; thus, 51 charts were included in the review. Differences between practitioner type in insertion complications, complications requiring additional interventions, hospital length of stay, and morbidity were not significant. The only significant difference was a complication related to placement of the tube: when the tube extended caudad, toward the feet, from the insertion site; this complication occurred in seven of 33 insertions (21%) made by surgeons and in one of 38 insertions (2.6%) made by APPs. Interrater reliability ranged from good to very good. Conclusions Use of advanced practice providers provides consistent and quality tube thoracostomies. Employment of these practitioners may be a safe and reasonable solution for staffing trauma centers.</p>	<p>Bevis, L. C., Berg-Copas, G. M., Thomas, B. W., Vasquez, D. G., Wetta-Hall, R., Brake, D., Lucas, E., Toumeh, K., & Harrison, P. (2008). Outcomes of tube thoracostomies performed by advance practice providers vs. trauma surgeons. <i>American Journal of Critical Care</i>, 17, 357-363.</p>

No.	Description	Reference
28	<p>Study Objective: Several factors (eg, the shortage of board-certified emergency physicians, insufficient hospital funds to hire more physician providers, and difficulty with physician recruitment and retention in rural and other underserved areas), have led to the utilization of physician assistants (PAs) and nurse practitioners (NPs) as alternatives to traditional physician coverage of emergency departments (EDs). In this study, we sought to evaluate the frequency and utilization trends of these mid-level providers in US EDs.</p> <p>Methods: We performed a secondary analysis of the National Hospital Ambulatory Medical Care Survey, 1993-2005. Using the "Providers Seen" fields, we analyzed all visits seen by PAs and NPs, both with and without evidence of physician involvement in clinical care. We compared demographic, hospital, and visit characteristics of PA and NP visits to those seen by physicians only. Data regarding NP providers and time of visit were collected only during 1995 to 2005. We used assigned patient visit weights to calculate national estimates and compared characteristics using difference of estimates with 95% confidence intervals (CIs). We used weighted logistic regression to evaluate trends over the study period. Results: From 1993 to 2005, there were approximately 1.3 billion ED visits in the US. During this time period, 5.2% (95%CI, 4.6-5.8%) of all visits were seen by PAs and 1.7% (95%CI, 1.5-2.0%) of visits by NPs. PA visits rose from 2.9% in 1993 to 9.1% in 2005, while NP visits rose from 1.1% in 1995 to 3.8% in 2005 (both p for trend <0.001). Limiting the analyses to visits without evidence of physician involvement, PAs saw 2.1% (95%CI, 1.7-2.5%) and NPs 0.8% (95%CI, 0.6-0.9%) of visits during the study period. Visits seen by mid-level providers without documented physician involvement increased 4-fold, from 1.2% in 1995 to 4.8% in 2005 (p for trend <0.001). Compared to visits seen or directly supervised by physicians, those seen only by mid-level providers involved younger patients (mean age 31 [95%CI, 30-32] vs. 35 [95%CI, 35-36] years), had lower urgent acuity (37% [95%CI, 31-43%] vs. 59% [95%CI, 57-61%]), and were admitted less often (3.0% [95%CI, 1.7-4.3%] vs. 13% [95%CI, 13-14%]). Visits seen only by mid-level provider were also less frequent during the nightshift (11 pm-7am) (8.1% [95%CI, 6.9-9.4%] vs. 16% [95%CI, 16-17%]), but they were similar to physician visits by sex, race/ethnicity, insurance, region, and urban/rural status. Conclusions: PAs and NPs are utilized with increasing frequency in US EDs, both with and without physician involvement. In 2005, they participated in 13% of all ED visits. Although PAs and NPs were utilized more often for lower acuity visits, 37% of patients seen only by mid-level providers were of urgent acuity and 3% were admitted. This suggests that the role of mid-level providers, practicing without direct physician involvement, has extended beyond simple and minor presentations. These trends in alternative staffing of EDs are likely to continue, given that workforce needs in emergency medicine continue to outpace the supply (and national distribution) of board-certified emergency physicians.</p>	<p>Ginde, A. A., Espinola, J. J., Sullivan, A. F., Blum, F. C., & Carmago, C. A. (2008). Use of Physician Assistants and Nurse Practitioners in United States Emergency Departments, 1993-2005: Implications for the emergency physician workforce. <i>Annals of Emergency Medicine</i>, 52(4), S87.</p>

No.	Description	Reference
29	<p>Background: Accreditation Council on Graduate Medical Education (ACGME) duty hour restrictions have led to the widespread implementation of non-house staff services in academic medical centers, yet little is known about the quality and efficiency of patient care on such services. Objective: To evaluate the quality and efficiency of patient care on a physician assistant/hospitalist service compared with that of traditional house staff services. Design: Retrospective cohort study. Setting: Inpatient general medicine service of a 747-bed academic medical center. Patients: A total of 5,194 consecutive patients admitted to the general medical service from July 2005 to June 2006, including 992 patients on the physician assistant/hospitalist service and 4,202 patients on a traditional house staff service. Intervention: A geographically localized service staffed with physician assistants and supervised by hospitalists. The Physician Assistant/Clinician Educator (PACE) consisted of 15 beds localized to two adjacent inpatient "pods," staffed by a single cadre of nurses and medically staffed by one hospitalist and two physician assistants from 7:00 AM to 7:00 PM on weekdays and by one hospitalist, one physician assistant, and one moonlighter from 7:00 AM to 7:00 PM on weekends. A moonlighter, typically a senior resident or medical subspecialty fellow, admitted patients and covered nights on the service from 7:00 PM to 7:00 AM seven days a week. The service accepted admissions 24 hours per day, seven days per week, whenever beds were available. Daily morning rounds included the hospitalist, physician assistants, nurses, a care coordinator, and a pharmacist. The PACE service did not have triage guidelines related to diagnosis, complexity, or acuity, but only accepted patients via the emergency department or via a primary care physician's office, and did not accept patients transferred from outside hospitals or from the intensive care units. All of the physician assistants on the PACE service had prior inpatient medicine experience, ranging from six months to five years. Their clinical responsibilities were similar to those of interns at the study hospital, and included taking histories and performing physical examinations, writing notes and orders, reviewing and assimilating data, creating and updating patient signouts, completing discharge summaries, consulting other services as needed, and communicating with nurses and family members. Measurements: Length of stay (LOS), cost of care, inpatient mortality, intensive care unit (ICU) transfers, readmissions, and patient satisfaction. Results: Patients admitted to the study service were younger, had lower comorbidity scores, and were more likely to be admitted at night. After adjustment for these and other factors, and for clustering by attending physician, total cost of care was marginally lower on the study service (adjusted costs 3.9% lower; 95% confidence interval [CI] -7.5% to -0.3%), but LOS was not significantly different (adjusted LOS 5.0% higher; 95% CI, -0.4% to +10%) as compared with house staff services. No difference was seen in inpatient mortality, ICU transfers, readmissions (within 72 hours, 14 days or 30 days), or patient satisfaction. Conclusions: For general medicine inpatients admitted to an academic medical center, a service staffed by hospitalists and physician assistants can provide a safe alternative to house staff services, with comparable efficiency.</p>	<p>Roy, C. L., Liang, C. L., Lund, M., Boyd, C., Katz, J. T., McKean, S. & Schnipper, J. L. (2008). Implementation of a physician assistant/hospitalist service in an academic medical center: Impact on efficiency and patient outcomes. <i>Hospital Medicine</i>, 3, 361-368.</p>

No.	Description	Reference
30	<p>Non-housestaff medicine services are growing rapidly in academic medical centers (AMCs), partly driven by efforts to comply with resident duty hour restrictions. Hospitalists have emerged as a solution to providing these services given their commitment to delivering efficient and high-quality care and the field's rapid growth. However, limited evidence is available on designing these services, including the similarities and differences of existing ones. The authors describe non-housestaff medicine services at five AMCs in order to share their experiences and outline important considerations in service development. The authors discuss common challenges in building and sustaining these models along with local institutional factors that affect decision making. Keys to success include ensuring an equitable system for scheduling and staffing, fostering opportunities for scholarly activities and academic promotion (defining the "academic hospitalist"), and providing compensation that supports recruitment and retention of hospitalists. With further work hour restrictions expected in the future and increased requests for surgical co-management, the relationship between AMCs and hospitalists will continue to evolve. To succeed in developing hospitalist faculty who follow long careers in hospital medicine, academic leadership must carefully plan for and evaluate the methods of providing these clinical services while expanding on our academic mission. The article contains a Table (Table 2) which describes the characteristics of non-house staff medicine services at five academic centers, two of which used PAs in their staffing models. The Brigham & Women's Hospital employed six FTE PAs seven days a week, who worked with one hospitalist, serving an average of 12 patients per day. The University of Michigan employed eight FTE PAs who worked weekdays with seven hospitalists and one swing shift hospitalist, serving an average of 70 patients per day.</p>	<p>Sehgal, N. L., Shah, H. M., Parekh, V. I., Roy, C. L. & Williams, M. V. (2008). Non-housestaff medicine services in academic centers: Models and challenges. <i>Journal of Hospital Medicine</i>, 3, 247-255.</p>
31	<p>OBJECTIVE: To investigate whether the use of physician assistants (PAs) as providers for a substantive portion of a patient's office-based visits affects office visit resource use. DATA SOURCE: Medical Expenditure Panel Survey (MEPS) Household Component data from 1996 to 2004. STUDY DESIGN: This retrospective cohort study compares the number of office-based visits per year between adults for whom PAs provided ≥ 30 percent of visits and adults cared for by physicians only. DATA COLLECTION / EXTRACTION METHODS: The Agency for Healthcare Research and Quality collects MEPS data using methods designed to produce data representative of the U.S. noninstitutionalized civilian population. Negative binomial regression was used to compare the number of visits per year between persons with and without PA care, adjusted for demographic, geographic, and socioeconomic factors; insurance status; health status; and medical conditions. PRINCIPAL FINDINGS: After case-mix adjustment, patients for whom PAs provided a substantive portion of care used about 16 percent fewer office-based visits per year than patients cared for by physicians only. This difference in the use of office-based visits was not offset by increased office visit resource use in other settings. The authors note that physicians and PAs/NPs develop diverse practice arrangements based on personal preferences and practice needs. Some physicians may choose to hire PAs or NPs to provide preventive and counselling services that the physicians are unable to find the time to provide, leading to services that are intentionally complementary. Others may work out substitution practice arrangements in which PAs or NPs see the patients with the least complicated routine problems, while the physicians see the more complex patients. In other practices, the assignment of patients to PAs, NPs, or physicians may be random or may depend on scheduling constraints or idiosyncratic interests of the providers involved. In many practices, there will be a mix of substitute and complementary services. Practice patterns may also evolve over time, as individual physicians, PAs, or NPs develop special interests or skills. CONCLUSIONS: Results indicate that the inclusion of PAs in the U.S. provider mix does not affect overall office visit resource use.</p>	<p>Morgan, P. A., Shah, N. D., Kaufman, J. S., & Albanese, M. A. (2008). Impact of physician assistant care on office visit resource use in the United States. <i>Health Services Research</i>, 43(5, Pt. 2), 1906-1922.</p>

No.	Description	Reference
32	<p>Physician assistants (PAs) practice medicine with physician supervision, which allows physicians to see more patients and concentrate their efforts on the needs of those with complex medical conditions. Physician assistants have been practicing in Minnesota since 1970. They work in a variety of settings and specialties, although most are in primary care practices. This article profiles the PA profession and describes the type of work PAs do, the training and credentialing required to become a PA, and the relationship between physicians and PAs. The authors note that the role of the PA is highly individualized, depending on the physician's needs and preferences, the type of practice, the setting, and the PA's training and experience. In some practices, the PA's role will closely resemble that of the physician's. For example, PAs will often serve as the primary care provider for some of the patients in a panel. In a primary care setting, these will be patients who need routine health maintenance or well-child care, as well as those with acute complaints. The PA also may help patients manage chronic health conditions such as hypertension, diabetes, dyslipidemia, asthma, obesity, and depression. Having PAs care for patients with these conditions allows the physician to devote more time and attention to patients who have more complex conditions. In other settings, the PA may function at the periphery of the physician's work, implementing medical decisions, performing procedures, and instructing and educating patients and caregivers; on the other hand, those with extensive training or experience may provide high-level consultations. In an inpatient, emergency room, or procedural practice, the PA and physician may practice side-by-side and confer on an ongoing basis throughout the day. Supervising physicians assume all responsibility for the care given by the PA. Although the physician does not have to be present when the PA provides care, he or she (or an alternate physician) must be available by phone or electronically. In most cases, the PA and physicians work closely and have regular opportunities to discuss cases and practice standards. Clinical postgraduate specialty training for PAs is available in a variety of fields including dermatology, rheumatology, psychiatry, sleep medicine, emergency medicine, occupational medicine, hospital medicine, critical care, general surgery, neurosurgery, orthopedic surgery, and urology. Advanced training or extended experience does not change the fact that a PA works under a supervising physician and that the clinical tasks delegated to the PA still must fall within the physician's scope of practice.</p>	<p>Kimball, B. A., Rothwell, W. S. (2008). Physician assistant practice in Minnesota: Providing care as part of a physician-directed team. <i>Minnesota Medicine</i>, 91(5), 45-48.</p>
33	<p>Objective. To assess applicability of national health survey data for generalizable research on outpatient care by physician assistants (PAs) and nurse practitioners (NPs). Data Sources. Methodology descriptions and 2003 data files from the National Ambulatory Medical Care Survey, the National Hospital Ambulatory Medical Care Survey, the Medical Expenditure Panel Survey, and the Community Tracking Study. Study Design. Surveys were assessed for utility for research on PA and NP patient care, with respect to survey coverage, structure, content, generalizability to the U.S. population, and validity. National estimates of patient encounters, statistically adjusted for survey design and nonresponse, were compared across surveys. Data Collection/Extraction Methods. Surveys were identified through literature review, selected according to inclusion criteria, and analyzed based on methodology descriptions. Quantitative analyses used publicly available data downloaded from survey websites. Principal Findings. Surveys varied with respect to applicability to PA and NP care. Features limiting applicability included (1) sampling schemes that inconsistently capture nonphysician practice, (2) inaccurate identification of provider type, and (3) data structure that does not support analysis of team practice. Because the majority of PAs work in group practices and because independent NP practices are not sampled, the National Ambulatory Medical Care Survey [NAMCS] probably underestimates visits to NPs and PAs. Conclusions. Researchers using national health care surveys to analyze PA and NP patient interactions should account for design features that may differentially affect nonphysician data. Workforce research that includes NPs and PAs is needed for national planning efforts, and this research will require improved survey methodologies.</p>	<p>Morgan, P. A., Strand, J., Østbye, T., & Albanese, M. A. (2007). Missing in action: Care by physician assistants and nurse practitioners in national health surveys. <i>Health Services Research</i>, 42(5), 2022-2037.</p>

No.	Description	Reference
34	<p>Objective: To determine the effect of a rapid response system composed primarily of a rapid response team led by physician assistants on the rates of in-hospital cardiac arrests, total and unplanned intensive care unit admissions, and hospital mortality. Secondary outcomes examined included the rate of successful airway management by PAs, the need for any immediate physician intervention before transfer from the original site of the RRT call, overall nursing satisfaction with the particular RRT call, and the utility of 24-hr follow-up visits for all RRT calls. Design: Prospective, controlled, before and after trial. Setting: A 350-bed nonteaching community hospital. Patients: All adult patients admitted to the hospital from May 1, 2005, to October 1, 2006. Interventions: The authors introduced a hospital-wide rapid response system that included a rapid response team (RRT) led by physician assistants with specialized critical care training. The RRT was composed of a critical care nurse with ≥ 5 yrs of experience, a respiratory therapist, and a PA who functioned as team leader. An intensivist was available in house from 8 am until 8 pm and on call from home thereafter. A hospitalist was continuously available in house for emergency consultation, as was an anesthesiologist. The PAs had all undergone an intensive 3-day commercial airway management course run by emergency medicine physicians that placed emphasis on rapid sequence intubation techniques. Two additional weeks were spent with an anesthesiologist practicing intubations in operating rooms. Finally, each PA spent 1 month working in the intensive care unit under the supervision of an intensivist to further refine airway management skills as well as obtaining competency in central venous access. The PAs varied in experience from 2 to 20 yrs. There were no specific protocols or algorithms for dealing with specific clinical situations aside from the standard advanced cardiac life support, rapid sequence intubation, and difficult airway algorithms. The attending physician was contacted after the initial stabilization in order to determine the direction of care and disposition of the patient. Measurements and Main Results: They measured the incidence of cardiac arrests that occurred outside of the intensive care unit, total intensive care unit admissions, unplanned intensive care unit admissions, intensive care unit length of stay, and the total hospital mortality rate occurring over the study period. There were 344 RRT calls during the study period. In the five months before the rapid response system began, there were an average of 7.6 cardiac arrests per 1,000 discharges per month. In the subsequent 13 months, that figure decreased to 3.0 cardiac arrests per 1,000 discharges per month. Overall hospital mortality the year before the rapid response system was 2.82% and decreased to 2.35% by the end of the RRT year. The percentage of intensive care unit admissions that were unplanned decreased from 45% to 29%. Linear regression analysis of key outcome variables showed strong associations with the implementation of the rapid response system, as did analysis of variables over time. The PA successfully intubated the patient in 84% of cases, with physician assistance being required in the balance. Conclusions: The deployment of an RRT led by physician assistants with specialized skills was associated with significant decreases in rates of in-hospital cardiac arrest and unplanned intensive care unit admissions.</p>	<p>Dacey, M. J., Mirza, E. R., Wilcox, V., Doherty, M., Mello, J., Boyer, A., Gates, J., Brothers, T. & Baute, R. (2007). The effect of a rapid response team on major clinical outcome measures in a community hospital. <i>Critical Care Medicine</i>, 35(9), 2076-2082.</p>

No.	Description	Reference
35	<p>Background: In the United States, the physician assistant (PA) model has proven to be a cost-effective way to train quality primary care providers with a high degree of acceptance of the PA role by patients and other healthcare providers. The PA is a health professional licensed to practice medicine in the United States. Within the physician–PA relationship, physician assistants exercise autonomy in medical decision-making and provide a broad range of diagnostic and therapeutic services. These include physical examination, diagnosing and treating illnesses, ordering and interpreting tests, counselling on preventive healthcare, assisting in surgery, and writing prescriptions. Physician assistants are also involved in education, research and administrative services. PA education is based on the medical model which aims to create a physician–PA team that enhances the delivery of high-quality healthcare. The legal basis of physician assistant practice is the concept of delegation of medical tasks by licensed physicians to qualified professionals. PAs work with the supervision of physicians and practice in a variety of clinical settings including rural clinics, multi-specialty group practices, community health centers and hospitals. Aim: Discuss PA model as it pertains to other countries. Methods: Review of relevant literature related to physician assistant education, practice and global interest. Results: Several countries including the United Kingdom, Scotland, Canada, the Netherlands, Taiwan, South Africa and Ghana are exploring or re-exploring the concept of the physician assistant as a way to quickly and efficiently train and employ autonomous and flexible health workers to address their nation's healthcare needs. The general medical education of PAs gives them the ability to move between various clinical settings and specialties including clinics, medical centers and hospitals. In all settings they share in diagnosing and treating common medical problems and providing preventive care and health education. PAs are also utilized in all of the surgical specialties and the majority of the medical specialties. PAs have been shown to have proficiency in the performance of medical diagnostic and therapeutic procedures that require a high degree of technical proficiency. Conclusions: Physician assistant education is efficient and flexible and the PA model can be easily adapted to the specific health system needs of other nations. In addition, many PA programs have affiliation agreements with institutions outside of the United States to host PA students for clinical rotations and there is an ever-growing interest by students in international rotations. The Physician Assistant Education Association along with the American Academy of Physician Assistants is actively involved with sharing information about the PA profession with other countries.</p>	<p>Legler, C. F., Cawley, J. F., & Fenn, W. H. (2007). Physician assistants: Education, practice and global interest. <i>Medical Teachers</i>, 29, e22-e25.</p>
36	<p>Physician assistants (PAs) and nurse practitioners (NPs) were introduced in the United States in 1967. As of 2006, there are 110 000 clinically active PAs and NPs (comprising approximately one sixth of the US medical workforce). Approximately 11 200 new PAs and NPs graduate each year. PAs and NPs are well distributed throughout primary care and specialty care and are more likely than physicians to practise in rural areas and where vulnerable populations exist. A growing number of NPs and PAs are employed in hospitals. Most are employed by the institution or a doctor, and are usually viewed as part of a two-person medical or surgical team. In general, PAs and NPs in hospitals can prescribe narcotics, undertake procedures, and direct patient care with fewer restrictions than in outpatient settings. About 30% of PAs report having some type of hospital relationship. In some instances, NPs and PAs serve as inpatient specialists or “hospitalists”, providing “back-fill” for junior hospital doctors who are no longer working extended hours, or providing care previously covered by junior doctors. The productivity of NPs and PAs, based on traditional doctor services, is comparable, and the range of services approaches 90% of what primary care physicians provide. The education time is approximately half that of a medical doctor and entry into the workforce is less restrictive. The interprofessional skill mix provided by PAs and NPs may enhance medical care in comparison with that provided by a doctor alone.</p>	<p>Hooker, R. A. (2006). Physician assistants and nurse practitioners: The United States experience. <i>Medical Journal of Australia</i>, 185, 4-7.</p>

No.	Description	Reference
37	<p>INTRODUCTION: The reduction of resident work hours due to the 80-hour workweek has created pressure on academic health-care systems to find "replacement residents." At the authors' institution, a group of nurse practitioners (NPs) and physician assistants (PAs), collectively referred to as non-physician practitioners (NPPs), were hired as these reinforcements, such that the number of NPPs (56) was almost twice the number of clinical categorical surgery residents (37). An experienced leader with national credibility was hired to run the NPP program. On each service, the call system was changed to a night float system, whereby residents were pulled from traditional resident teams to serve as nighttime residents during the week. A total of 1-3 NPPs were hired for each team, but whether NPPs worked for the team as a whole, or were assigned to individual attendings, was left to the discretion of the division chiefs. One year after the start of this program, the authors wanted to study the effects it has had on both surgery resident education and NPP job satisfaction. METHODS: An electronic, anonymous survey was conducted during a monthly surgery resident meeting, and out of 72 categorical and preliminary surgery residents, 50% submitted answers to 12 questions. A similar electronic survey was administered to all 56 NPPs, with 45% (20 NPs, and 5 PAs) responding. RESULTS: Overall, more than 60% of residents and more than 70% of NPPs felt that patient safety was not compromised by the new structure of the services; however, more than 20% of NPPs and 30% of residents believed patient safety was compromised by the new program. Overall, 63% of residents believed that lines of communication between surgery team members were clear, and 58% of residents and 71% of NPPs believed that attendings, residents, and NPPs worked together effectively. A total of 91% of residents believed that the addition of NPPs to the teams was positive overall, and 80% of NPPs were satisfied with their positions. Overall, 60% of residents and 50% of NPPs felt that educational goals were being met. DISCUSSION: Implementation of the 80-hour workweek and introduction of NPs and PAs onto the inpatient surgical services has altered resident education at the authors' institution. Although overall most residents view the addition of NPPs to the clinical services as positive, there are concerns about the program. Although hired to fill the void left by decreasing labor hours of residents, NPPs do not necessarily have the same goals as surgery residents and there is confusion about how NPPs fit into the hierarchy of the traditional surgical team.</p>	<p>Resnick, A. S., Todd, B. A., Mullen, J. L., Morris, J. B. (2006). How do surgical residents and non-physician practitioners play together in the sandbox? <i>Current Surgery</i>, 63(2), 155-164.</p>

No.	Description	Reference
38	<p>The purposes of this study were: (1) to identify the frequency with which various clinical skills are used by PAs practicing in rural areas and (2) to ascertain the importance that PAs in rural practice place on various clinical skills. A survey tool was developed and administered to all PAs who practice in primary care in a rural community in Iowa. Primary care was defined as family medicine, general internal medicine, general pediatrics, and obstetrics and gynecology. Rural was defined as a community with a population of less than 10,000. The study was a nonexperimental, descriptive, research format using a questionnaire to query PAs about their characteristics, backgrounds, activities, and perceptions regarding frequency of performance and relative importance of 94 clinical skills as they relate to the practice of primary care medicine in a rural setting. Of the 185 surveys mailed to eligible participants, a total of 94 were returned, resulting in a response rate of 50.8%. The average age of the respondents was 42.6 years, and the majority were female (63%). Overall, the mean number of months in practice was 113.4, with an average of 96.7 months in a rural setting. Nearly two-thirds of the respondents (65%) indicated that they provided emergency room coverage as part of their practice. Call coverage was provided by 54% of the respondents, and those who provided this service averaged 28.4 hours on call per week. The mean population (determined by census) of the communities served by the PAs was 3,291. According to respondents, the ten most frequently performed skills, and the number of times they were performed annually were: dispensing medications (583 times/year), pap smears (160 times/year), teaching self-breast exams (155 times/year), venipuncture (112 times/year), giving injections (102 times/year), performing X-rays (85 times/year), microscopic exams of samples (73 times/year), nebulizer treatment (65 times/year), sexually transmitted disease testing (64 times/year), and teaching self-genital exams (64 times/year). Dispensing medications was performed with the greatest frequency, which was 3.6 times greater than the next most commonly performed skill (Pap smears). Clinical skills identified as most frequently performed and of the greatest perceived importance were cervical cytology smears, self-breast examination, microscopic examination of samples, and sexually transmitted disease testing. The authors noted that many of the skills appearing on both the list of most important skills and on the list of most frequently performed skills were specific for women's health. Sixteen percent of the survey respondents indicated that they did not believe that their PA program had prepared them with the skills necessary to enter practice in a rural setting.</p>	<p>Asprey, D. (2006). Clinical skills utilized by physician assistants in rural primary care settings. <i>The Journal of Physician Assistant Education</i>, 17(2), 45-47.</p>

No.	Description	Reference
39	<p>Due to the continuing pressure to see increasing numbers of patients efficiently and safely, Emergency Departments (EDs) have sought innovative ways to accomplish this goal. The creation of a “fast-track” program staffed by midlevel practitioners has been assumed to increase ED throughput for non-emergent patients. However, a reasonable concern arises as to whether this might occur at the cost of a decrease in overall ED performance or safety variables. This study was designed to assess the effects of a fast-track area opening, staffed by midlevel practitioners, on ED effectiveness and quality. To determine if a fast-track area (FTA) would improve Emergency Department (ED) performance, a historical cohort study was performed in the ED of a tertiary care adult hospital in the United States that, at the time of the study, treated approximately 75,000 patients per year in the ED. All patients are seen by a triage nurse and classified according to acuity of complaint as emergent, urgent, or non-urgent. Non-urgent patients are sub-grouped as FTA appropriate if triage nurse assessment suggests diagnoses that fall within the scope of practice of midlevel practitioners (Physician Assistants and Nurse Practitioners—PA/NPs) who are variously trained and adult-qualified to see FTA patients. Physician support is on an “as needed” basis and occurs about five times per 24-h day. During the two-year period, staffing increased slightly but not in direct relation to FTA opening. During the two years of construction, room count and availability varied but remained relatively constant. After the FTA opened, approximately 30% of patients were triaged as FTA appropriate. From 8:30 a.m. until 11:00 p.m., these patients are seen in a separate seven-bed unit staffed according to time of day and expected volume by one to four PA/NPs. After 11:00 p.m. they are placed in the main ED, and usually seen by PA/NPs. Two one-year consecutive periods, pre fast track area (FTA) opening—from February 1, 2001 to January 31, 2002 and after FTA opening—from February 1, 2002 to January 31, 2003 were studied. Daily values of the following variables were obtained from the ED patient tracking system: 1) To assess ED effectiveness: waiting time to be seen (WT), length of stay (LOS); 2) To assess ED care quality: rate of patients left without being seen (LWBS), mortality, and revisits; 3) To assess determinants of patient homogeneity between periods: daily census, age, acuity index, admission rate and emergent patient rate. For comparisons, the Wilcoxon test and the Student’s <i>t</i>-test were used to analyze the data. Results showed that despite an increase in the daily census (difference [diff] 8.71, 95% confidence interval [CI] six to 11.41), FTA was associated with a decrease in WT (diff -51 min, 95% CI [-56 to -46]), LOS (diff -28 min, 95% CI [-31 to -23]) and LWBS (diff -4.06, 95% CI [-4.48 to -3.46]), without change in the rates of mortality or revisits. In conclusion, the opening of a FTA improved ED effectiveness, measured by decreased WT and LOS, without deterioration in the quality of care provided, measured by rates of mortality and revisits.</p>	<p>Sanchez, M., Smally, A. J., Grant, R. J., & Jacobs, L. M. (2006). Effects of a fast-track area on emergency department performance. <i>The Journal of Emergency Medicine</i>, 31(1), 117-120.</p>

No.	Description	Reference
40	<p>The use of mid-level providers, nurse practitioners, and physician assistants is growing in the practice of dermatology, fuelled by a perceived shortage of dermatologists and the promise of practice enhancement. From a practical standpoint, dermatologists use physician extenders in a number of ways, ranging from assisting in procedures such as biopsies, skin cancer destruction and assisting in surgery to performing a variety of cosmetic procedures. In some dermatology practices, physician extenders act as “dermatologists” seeing patients independently and consulting with the dermatologist when they feel it necessary to have the dermatologist view the patient. Legally, there are different regulations governing physician assistants and nurse practitioners and in each case different states allow for varying degrees of independence. In the state of Florida for instance, physician assistants are considered to be under either direct or indirect supervision, whereby the physician is available by telecommunication. All charts need to be reviewed and signed by the supervising physician. Physician assistants may prescribe a specified list of pharmaceuticals after approximately 3 months time of direct supervision and evaluation by the supervising physician. Exactly how the physician extender is used in the dermatology practice can either increase or decrease the risk of malpractice liability and ultimately may be a factor in whether the dermatologist prevails in a malpractice case. Reducing malpractice liability risk is dependent on adhering to or exceeding community standards of practice and patient care. Because very few physician extenders participate in officially sanctioned training programs, it is up to the physician to adequately train that provider and determine their level of competence. It should be obvious to most dermatologists that it would be impossible to train the mid level provider to perform at the level of knowledge and experience of the dermatologist. It is therefore up to the dermatologist to determine what aspects of dermatologic care should be delegated to the mid-level provider. Procedures can be taught by the dermatologist and mastered by the mid-level provider. These may include biopsies, destructions, and a variety of surgical procedures. Additionally, cosmetic procedures, especially nonablative rejuvenation, can be mastered by mid level providers. The difficulty is defining the degree of dermatologic expertise and training that is necessary for diagnosis and treatment of dermatologic disease. Although dermatologists can delegate care to physician extenders, they cannot delegate the liability risk. It is up to the dermatologist to embrace those principles and practices that enhance patient care, decrease medical errors, and improve physician/practice patient relationships to ultimately decrease the risk of malpractice liability.</p>	<p>Nestor, M. S. (2005). The use of mid-level providers in dermatology: A liability risk? <i>Seminars in Cutaneous Medicine and Surgery</i>, 24, 148-151.</p>

No.	Description	Reference
41	<p>Objective: To describe the scope of practice and complementary role of physician assistants as physician extenders in the pediatric intensive care unit. Design: Descriptive report of a five year experience using a physician assistant-resident staffing model in comparison to the traditional resident-only coverage. Setting: Six-bed pediatric intensive care unit at a tertiary care center subject to longstanding New York Hospital Code 405 restrictions on resident work hours. Interventions: Orientation, training, credentialing, and evaluation of physician assistants. Measurements and Main Results: New Accreditation Council for Graduate Medical Education regulations based on the longstanding New York Hospital Code 405 limit the number of resident hours worked per week. The hospital employs physician assistants as physician extenders in the pediatric intensive care unit to enable regulatory compliance. Physician assistants were oriented for a period of six months to one year to develop skill competencies, observe and learn pediatric intensive care unit practices and procedures, and complete credentialing to perform traditionally physician, nursing, and respiratory therapist functions. This period consisted of the following: 1. Department-wide learning opportunities: attendance at daily morning report, pediatric core resident lecture series, weekly case management seminars, morbidity and mortality conferences, and pathophysiology seminars 2. PICU-specific teaching: observation on PICU rounds, PICU core topics (www.picucourse.org), ventilator management lectures, transport team orientation, pretest, Basic Life Support, Pediatric Advanced Life Support 3. Skill competencies: in-service and credentialing by PICU clinical nurse specialist, respiratory therapists (RTs), resident, or attending MDs as appropriate; peripheral intravenous placement, phlebotomy, arterial blood sampling, placement of percutaneous arterial catheter, placement of peripherally inserted central catheters, naso-gastric tube placement, Foley placement, bag-valve-mask ventilation, point of care testing, lumbar puncture, peripherally inserted central catheter and central catheter care, changing tracheostomy tube, tracheostomy care, assisting with invasive procedures, bedside set-up for procedural sedation 4. Precepting: clinical bedside precepting with one of the existing and experienced PAs on day shifts only initially, expanded to nights toward the conclusion of the orientation period. Physician assistants were then assigned to an independent but supervised patient care role similar to that of a resident physician. One postgraduate year two or postgraduate year three resident is posted to the PICU for a one-month block and provides daytime coverage during weekdays. Night call is provided by a resident on a subspecialty rotation. At any given time there would be one PA and one resident covering the PICU, usually each responsible for the management of one to three patients. Both PAs and residents present their assigned patients on attending rounds and carry out the plans for the day on those patients. The orders that the PAs write on their patients are cosigned by a physician within 24 hrs. The impact of the physician assistant program was assessed by the attending physicians, and resident opinions were surveyed. Conclusions: Physician assistants play a complementary role as physician extenders in the pediatric intensive care unit, enabling compliance with New York state and Accreditation Council for Graduate Medical Education resident work hour regulations. Physician assistants perform similar tasks and activities as the pediatric intensive care unit residents and integrate well with them in enhancing bedside patient care. Over time, physician assistants provide additional direction to the residents by virtue of their familiarity with unit-specific policies and procedures and repetitive pediatric intensive care unit practice patterns. As multifunctional members of the health care team, they support nursing and respiratory therapy functions and improve the day-to-day functioning of the unit. The physician assistant serves as a key member of the pediatric intensive care unit transport team. The PAs collaborate directly with other subspecialty and consulting attendings and develop direct working relationships with them. In addition, by virtue of regular interaction with hospital staff in other departments—magnetic resonance imaging/ electroencephalogram/interventional radiology/radiography—in many cases they are able to facilitate timely performance of procedures on PICU patients. Limitations observed include high job turnover rates among the physician assistants and confusion between their role as shift workers or professional employees.</p>	<p>Mathur, M., Rampersad, A., Howard, K., & Goldman, G. M. (2005). Physician assistants as physician extenders in the pediatric intensive care unit setting – A 5-year experience. <i>Pediatric Critical Care Medicine</i>, 6(1), 14-19.</p>

No.	Description	Reference
42	<p>Background: Physician assistants (PAs) have been present in occupational and environmental medicine (OEM) in the USA since 1971, yet remarkably little is known about their activity. Methods: An administrative study of PA activities was undertaken and compared with the activities of physicians in the same occupational medicine setting. Patients were not triaged to either provider and all resources of care were recorded for the visit. An episode of care approach was used for the analysis. Results: The characteristics of patients seen by each provider were similar in age, gender ratio and severity of injury. Physicians saw a mean of 2.9 patients/h and PAs 2.5, but PAs worked more hours and saw more patients per year than physicians. The average charge per patient visit and total charge for an episode of care were similar. Differences between PAs and physicians were seen in the areas of 'limited duty' duration given to patients and on average PAs prescribed 15 days and physicians 17 days. PAs referred a patient 19.7% of the time, while physicians referred 17.4%. Most of the referrals were to physical therapy. The salary of a physician, based on an hourly rate, was approximately twice as much as a PA. Conclusion: The use of PAs in OEM may represent a cost-effective advantage from an administrative standpoint. Clearly, more research is necessary in determining the role and utilization of PAs in OEM and how they may improve the delivery of physician services.</p>	<p>Hooker, R. S. (2004). Physician assistants in occupational medicine: How do they compare to occupational physicians? <i>Occupational Medicine</i>, 54(3), 153-158.</p>
43	<p>A hopeful note in the contemporary abortion environment in the United States is the expanding role of advanced practice clinicians – nurse practitioners, physician assistants and nurse-midwives – in first trimester abortion provision. A large percentage of primary health care in the US is currently provided by these non-physicians but their involvement in abortion care is promising, especially in light of the shortage of physician providers. Two national symposia in 1990 and 1996 approved the expansion of early abortion care to non-physicians. As of January 2004, trained advanced practice clinicians were providing medical, and in some cases, early surgical abortion in 14 states. In most states, nurse-midwives, physician assistants and nurse practitioners practice under statutes that authorise them to administer medications and provide gynaecological services, including surgery that is comparable to surgical abortion, as long as they have been properly trained and are supervised. Under these professional standards, therefore, it would be logical for trained advanced practice clinicians to offer both medical and first trimester surgical abortion. This has required not only medical training but also political organising to achieve the necessary legal and regulatory changes, state by state, by groups such as Clinicians for Choice and the Abortion Access Project, described here in examples in two states and the reflections of three advanced practice clinicians. Recent surveys in three states show a substantial interest among advanced practice clinicians in abortion training, leading to cautious optimism about the possibility of increased abortion access for women. Most encouraging, advanced practice clinicians, like their physician counterparts, show a level of passionate commitment to the work that is rare elsewhere in health care in the US today. The authors note that Vermont is the state with the most extensive experience of advanced practice clinicians providing abortion care, being one of a handful of states that does not have a “physician-only” law. Physician assistants have been performing surgical abortion in Vermont since 1973 at the Planned Parenthood clinic in Burlington (formerly the Vermont Women’s Center). Indeed, the physician assistants at that clinic routinely train obstetrics and gynaecology residents from nearby medical schools in first trimester abortion techniques. A comprehensive analysis of complication rates in 2,456 first trimester abortions done between 1981 and 1982 at the Center found that the complication rates were no different than with abortions provided by physicians. A more recent, as yet unpublished, study by researchers at Planned Parenthood Northern New England compared complication rates for 2,027 procedures by physicians and physician assistants and nurse practitioners at five sites from November 2000 through December 2002. Complication rates for all providers were very low (2.5 per 1,000), and patients reported slightly more satisfaction with nonphysician providers.</p>	<p>Joffe, C., & Yarrow, S. (2004). Advanced practice clinicians as abortion providers: Current developments in the United States. <i>Reproductive Health Matters</i>, 12(24 Supplement), 198-206.</p>

No.	Description	Reference
44	<p>Interventional radiology (IR) is a clinical subspecialty; as such, there is a large amount of direct patient care. However, until recently, this topic has not been a major focus in radiology training programs. Additionally, as interventional radiologists develop busier and busier practices, there is less time to spend with individual patients. Physician extenders such as physician assistants (PAs) represent an excellent way to improve clinical patient care. This article describes what PAs are and how they work together with physicians. It illustrates differences between PAs and other physician extenders and describes the duties that may be delegated to PAs in the IR setting. The article describes one university hospital's experience with PAs, who participate in inpatient and outpatient care. They are involved in daily morning inpatient rounds with the fellows and residents rotating on the hospital's service. In this capacity, they evaluate abscess, urinary, and biliary drainage catheters and monitor patient progress. They also perform and monitor compliant chart documentation for all inpatients being followed by the IR service. In conjunction with the house staff, the PAs will communicate with referring services as needed and help triage queries and consultation requests that may be brought to their attention during these rounds. The PAs have made an invaluable contribution to the implementation of IR outpatient services and establishment of an outpatient office, which operates two half-days per week. Outpatient service duties include scheduling initial patient consultations, obtaining histories and performing physical examinations, discussing the case with the IR physician, developing a treatment plan for the patient in conjunction with the IR, implementing the plan, and providing appropriate documentation for billing. The PA also ensures that any appropriate preprocedural testing and evaluation has been obtained. This process has been extremely helpful in ensuring a smooth transition for the patient from initial consultation through postprocedural discharge and follow-up. The PAs had also recently become involved in the management of dialysis fistulas and grafts, and had become the primary providers for temporary central venous access, including sonographically guided peripherally inserted central catheters and internal jugular central venous lines. They are involved in all aspects of these procedures, from assessment of appropriateness of the initial request, to patient evaluation, obtaining informed consent, placing the device, and troubleshooting subsequent malfunctions. Privileging for these procedures is granted at the institutional level. Before requesting privileges for a particular procedure, we have established that the PA must perform a requisite number of supervised procedures. Because the PAs did not have experience with venous access, they began learning to place peripherally inserted central catheters because it poses less risk than internal jugular catheter placement. After performing 30 directly supervised cases, they apply for institutional privileges. When permission is granted, the PAs may perform the procedures unsupervised. With that experience it was determined that 10 directly supervised internal jugular central venous catheter placement procedures should be required before those privileges are requested.</p>	<p>Stecker, M. S., Armenoff, D., & Johnson, M. S. (2004). Physician assistants in interventional radiology practice. <i>Journal of Vascular and Interventional Radiology</i>, 15, 221-227.</p>
45	<p>In view of the new residency guidelines, which restrict resident work hours, the use of physician assistants (PAs) for patient care continuity during off-hours of residents may become a common practice. The purpose of this study was to assess the quality of patient care during transition from resident- to PA-assisted trauma program (without residents) and comparative simultaneous support. A retrospective analysis of patient care during two six-month segments was carried out: during resident-assisted program at a level II trauma center in 1998 and a PA-dedicated trauma program in 1999. With reinvolvement of senior surgical residents, a focused analysis for the last quarter of 2002 was done. Regression analysis indicated the only statistically significant outcome was decreased length of stay (LOS) when patients were transferred directly from emergency center (EC) to floor in 1999. The mean LOS was 2.54 ± 4.65 compared to 3.4 ± 5.81, and no statistical difference in other assessments was noted. Focused analysis in 2002 showed 100% participation of PAs during the trauma alert compared to 51% by residents. Substitution of residents with PAs had no impact on patient mortality; however, LOS (from EC to floor), was statistically reduced by one day. Trauma programs can benefit with collaboration of residents and PAs in patient care.</p>	<p>Oswanski, M., F., Sharma, O., P. & Raj, S. S. (2004). Comparative review of use of physician assistants in a level I trauma centre. <i>The American Surgeon</i>, 70(3), 272-279.</p>

No.	Description	Reference
46	<p>Objectives: The authors compared complication rates after surgical abortions performed by physician assistants with rates after abortions performed by physicians. Methods: A two-year prospective cohort study of women undergoing surgically induced abortion was conducted. All women who underwent an outpatient surgical abortion performed by a physician at the Feminist Health Center of Portsmouth, New Hampshire, or by a physician assistant at the Vermont Women's Health Center in Burlington, Vermont, between July 1996 and October 1997 were eligible to participate (n=1505). Ninety-one percent of eligible women (1,363) were enrolled; 546 received an abortion from a physician assistant, 817 received an abortion from a physician. Complications were defined according to National Abortion Federation guidelines as follows: a) incomplete abortion; b) failed abortion (continued pregnancy); c) ectopic/extrauterine pregnancy; d) perforation; e) cervical laceration; f) infection; g) hemorrhage; h) other complications, including shock, coma, amniotic fluid embolism, anesthesia-related difficulties, and death. Complications were further classified as either immediate or delayed. Immediate complications were defined as those that occurred during the procedure or before discharge from the clinic. Delayed complications were those that occurred up to two weeks after discharge. Complication categories are not mutually exclusive. Results: Total complication rates were 22.0 per 1,000 procedures (95% confidence interval [CI]=11.9, 39.2) performed by physician assistants and 23.3 per 1,000 procedures (95% CI=14.5, 36.8) performed by physicians, a difference that was not statistically significant ($P=.88$). A total of 37 complications were reported from 31 procedures (12 by Vermont physician assistants and 19 by New Hampshire physicians). Five Vermont women and one New Hampshire woman experienced more than one complication. The most common complication that occurred during physician assistant-performed procedures was incomplete abortion; during physician-performed procedures the most common complication was infection not requiring hospitalization. A history of pelvic inflammatory disease was associated with an increased risk of total complications (odds ratio=2.1; 95% CI=1.1, 4.1). Conclusions: Surgical abortion services provided by experienced physician assistants were comparable in safety and efficacy to those provided by physicians. The authors conclude that these results support the idea that a potential solution to the shortage of providers would be to expand the training of physician assistants to include surgical abortion, thereby enhancing the ability of the medical community to provide needed reproductive health services to women.</p>	<p>Goldman, M. B., Occhiuto, J. S., Peterson, L. E., Zapka, J. G. & Palmer, R. H. (2004). Physician assistants as providers of surgically induced abortion services. <i>American Journal of Public Health</i>, 94, 1352-1357.</p>

No.	Description	Reference
47	<p>Non-physician clinicians have become prominent providers of patient services within the practice of medicine. They include nurse practitioners and clinical nurse specialists, physician assistants, the alternative and complementary disciplines (chiropractic, naturopathy and acupuncture), mental health providers (psychologists, clinical social workers, counsellors and therapists) and specialty disciplines (optometrists, podiatrists, nurse anaesthetists and nurse-midwives). Although these various disciplines have differing histories and philosophic frameworks, which create distinctive approaches to patient care, they have shared a struggle to obtain recognition and autonomy through state licensure, to expand their state-granted practice prerogatives and to achieve broader reimbursement from third-party payers and managed care. Most entered into a growth spurt beginning in the early 1990s. All now provide care that not only overlaps that of physicians but that complements and supplements that care. Although PAs must always work under the delegated authority of a physician, most states allow them to practise within a radius of 50 miles or a one-hour drive from the supervising physician, as long as the opportunity for telephone contact is maintained. Moreover, the required frequency of direct contact with a physician varies from daily in most states to weekly in 12 states and 30-day intervals in seven. In three states, physicians are required to review only 10–15% of the PA's charts. The central question is, how does their care contribute to quality? The evidence thus far shows that non-physician clinicians throughout the range of disciplines can produce high-quality outcomes under particular circumstances. However, the strongest body of evidence is derived from care that is at the least complex end of the clinical spectrum or that is provided under the umbrella of physicians. Unfortunately, few studies have critically examined the outcomes of non-physician clinicians at the leading edge of their practice prerogatives and under conditions that are free of physician oversight. Thus, while the principle that they can deliver high quality care within the practice of medicine is unequivocally true, more research is needed to test this principle under conditions of greater clinical complexity and autonomy, and, pending the results of such research, caution must be exercised in applying this principle too broadly.</p>	<p>Cooper, R., & Stoflet, S. (2004). Diversity and consistency: The challenge of maintaining quality in a multidisciplinary workforce. <i>Journal of Health Services Research and Policy</i>, 9(Suppl. 1), 39-47.</p>

No.	Description	Reference
48	<p>Hypothesis: The authors hypothesized that physician assistants (PAs) will decrease surgery resident work hours and improve resident work outlook. The Accreditation Council for Graduate Medical Education released resident training guidelines that modified training programs; including an 80-hour workweek and, a maximum work shift of 24 hours. If residency programs are to adhere to the guidelines, then someone must make up the workload that would have been completed by the residents to ensure quality surgical care. Physician assistants (PAs) have been suggested as ideal candidates for the position. The authors' department had spent several years working to acquire funding for PA positions on each surgical service at their urban county hospital; the positions were approved. Design: Surgical resident survey. Setting: A county hospital in a university-based surgical residency program. Participants: Surgery residents who switched (or "rotated") to the county hospital were polled monthly for six months after using PAs as team members on the surgical services. A general surgery resident survey was conducted from January 1, 2002, through June 30, 2002, at the county hospital in a university-based surgical residency program. There are typically 10 to 12 general surgery residents assigned to the four surgical services each month. During the period of the survey, chief residents took night call from home on alternating nights, junior house staff took in-house call every third to fourth night, and trauma team members took in-house call every other day. In the first week of January, one PA was assigned to each surgical service. The PAs were fully incorporated into the surgical team and functioned at the level of a postgraduate year one or postgraduate year two resident. The PAs are under the direct supervision of the chief resident or attending staff. Each PA worked four ten-hour shifts per week, usually 7 AM to 5 PM on Mondays, Tuesdays, Wednesdays, and Fridays. Thursdays are set aside for teaching conferences. The PAs switch (or "rotate") between services every three months. Rotating the PAs provides a varied work experience and prevents the PAs from taking over a service. This rotation occurs on the 15th of each month to provide continuity of care because residents switch services on the first of the month. Main Outcome Measures: Resident work hours and work outlook. Results: Surgery resident hours were significantly decreased by the fourth, fifth, and sixth months after PAs joined the surgical services. Despite what these data on resident hours suggest, six (60%) of 10 residents believed that the PAs had no influence on the amount of time the residents spend in the hospital. Six (60%) of 10 residents thought the PAs decreased stress levels and six (60%) of 10 residents thought the PAs helped to improve morale. Conclusions: Physician assistants can have a positive influence on graduate surgical education programs. Physician assistants can help decrease surgery resident work hours and improve resident work outlook.</p>	<p>Victorino, G. P. & Organ, Jr., C. H. (2003). Physician assistant influence on surgery residents. <i>Archives of Surgery</i>, 138, 971-976.</p>
49	<p>Using a prospectively collected database of patients undergoing cardiac catheterization, the authors sought to compare the outcomes of procedures performed by supervised physician assistants (PAs) with those performed by supervised cardiology fellows-in-training. Outcome measures included procedural length, fluoroscopy use, volume of contrast media, and complications including myocardial infarction, stroke, arrhythmia requiring defibrillation or pacemaker placement, pulmonary edema requiring intubation, and vascular complications. Class three and four congestive heart failure was more common in patients who underwent procedures by fellows compared with those undergoing procedures by PAs ($P = 0.001$). PA cases tended to be slightly faster ($P = 0.05$) with less fluoroscopic time ($P < 0.001$). The incidence of major complications within 24 hr of the procedure was similar between the two groups (0.54% in PA cases and 0.58% in fellow cases). Under the supervision of experienced attending cardiologists, trained PAs can perform diagnostic cardiac catheterization, including coronary angiography, with complication rates similar to those of cardiology fellows-in-training.</p>	<p>Krasuski, R. A., Wang, A., Ross, C., Bolles, J. F., Moloney, E. L., Kelly, L. P., et al. (2003). Trained and supervised physician assistants can safely perform diagnostic cardiac catheterization with coronary angiography. <i>Catheterization and Cardiovascular Interventions</i>, 59, 157-160.</p>

No.	Description	Reference
50	<p>Crowding in the emergency department (ED) has multiple causes, including space and staffing in both inpatient areas and the ED. Waiting for inpatient beds is the primary issue in our ED. Waiting inpatients require continuing care and attention from emergency-medicine (EM) physicians. As a managerial response, we developed a unique role for midlevel practitioners (MLPs) in which they could provide "back-end" work for patients awaiting inpatient beds. After initial EM physician evaluation, patients without ready inpatient beds were grouped in the ED and their care was transferred to the transition team (TT). The TT consisted of an MLP (nurse practitioner or physician assistant) and a registered nurse or licensed practical nurse, all reporting to ED supervisors. The TT was present 24 hours per day and accepted patients from the acute-care areas of the ED. A patient was eligible for management by the TT only if the attending physician in the ED had seen the patient and determined the patient's ED disposition. Two types of patients were transferred to the TT: (1) admitted patients awaiting an inpatient bed; and (2) patients scheduled for a test or consultation that would determine disposition. The TT MLP was expected to see each patient, confirm a care plan and disposition for the patient, monitor the patient's clinical care, document these items, and note the time of transfer of medical responsibility for the patient from the ED to the inpatient services (as applicable). Following evaluation by the inpatient service, a patient's care could be continued by the on-site TT MLP. The registered nurse (RN) or licensed practical nurse (LPN) on the TT was expected to initiate inpatient nursing procedures and protocols to the maximum possible extent. Exclusion criteria for assignment of patients to the TT were lack of readiness of an inpatient bed; hemodynamic instability or use of vasoactive medications for the patient; or intubation or candidacy of the patient for the intensive care unit (ICU). Medical responsibility for patients managed by the TT continued to be that of the attending ED physician until the hospital's inpatient services assumed care of the patient. MLPs were readily available from the local medical professional market. The TT provided all patient care until a patient was seen by the admitting inpatient service or until the patient left for an inpatient unit. The major TT objectives were a reduction of EM physician work in caring for inpatients, and improved patient care. We demonstrated that the TT assumed a significant patient load, an indirect measure of reduced EM physician work, but this did not improve patient satisfaction. The TT clinical role is less desirable to MLPs than are other traditional clinical roles. The TT is a potentially available, incremental staffing resource for a crowded ED.</p>	<p>Ganapathy, S., & Zwerner, F. L. (2003). Coping with a crowded ED: An expanded unique role for midlevel providers. <i>American Journal of Emergency Medicine</i>, 21, 125-128.</p>
51	<p>Purpose To explore the licensing, certification, governance and education requirements of nurse practitioners (NPs) and physician assistants (PAs) in the state of Montana. Services provided and privileges retained in employment were also analyzed. Data Sources This was a descriptive study using a survey of rural hospital administrators (N=34). Conclusions Hospital administrators reported that 92.5% of PAs and their sponsoring physicians met the supervision requirements through site inspection and telephone communication, while 7.5% were required to have direct physician supervision. In contrast, 54.2% of NPs, who are autonomous by legal definition, have a telephone supervision requirement imposed on them by their employers. Implications for Practice These findings have implications for the current and prospective professionals and the businesses for which they work. Nurse practitioners and their professional organizations need to consider the implications these findings have on the professional image and marketability of all NPs. The authors note that both NPs and PAs are eligible to prescribe schedule II-V drugs. This excludes only schedule I drugs which have a high abuse potential and are not generally considered for medical use (e.g. heroin). The PA applies to the Board of Medical Examiners for prescriptive authority as part of the utilization plan. Physician assistants who are delegated prescribers of controlled medications are required to register with the federal Drug Enforcement Agency. The rules for the PAs emphasize the supervisory role of the physician. In the most autonomous scenario, the PA operating in a remote site will require the supervising physician to inspect the remote site and review patient records and office procedures at least once every 30 days or another interval at the discretion of the Board of Medical Examiners. The Board of Medical Examiners may grant the PA authority to maintain an office separate from the supervising physician.</p>	<p>Larsson, L. S., & Zulkowski, K. (2002). Utilization and scope of practice of nurse practitioners and physician assistants in Montana. <i>Journal of the American Academy of Nurse Practitioners</i>, 14(4), 185-190.</p>

No.	Description	Reference
52	<p>Background. Nonphysician health care providers are in an optimal position to provide cancer prevention and screening services.</p> <p>Methods. We conducted a survey of primary care physicians to determine physician use and amenability to use of nonphysician health care providers to perform skin cancer screening in comparison with other cancer screening examinations. Results. A total of 1,363 eligible physicians completed the survey. Of these, 382 (28%) reported having a PA in their practice, and 671 (49.2%) reported having either a NP or a PA in their practice. 631 physicians (46%) reported a nurse practitioner or physician assistant performing at least one type of cancer screening examination on their patients. Twenty-nine and 22% of all physicians reported nurse practitioners or physician assistants performing skin cancer screening, respectively. Family physicians were more likely to use nurse practitioners and physician assistants to perform these cancer screening examinations than internists (X^2 test, $P = 0.001$ for each examination). Skin examinations were performed less frequently by nurse practitioners and physician assistants than all other cancer screening examinations. Overall, PAs performed digital rectal exams in 24.4% of practices, clinical breast exams in 23.8% of practices, and Papanicolaou testing in 23.2% of practices. Within the 382 practices that employed PAs, PAs performed complete body skin exams in 78.3% of practices, digital rectal exams in 86.9% of practices, clinical breast exams in 84.8% of practices, and Papanicolaou testing in 82.7% of practices. A total of 73–79% of family physicians and 60–70% of internists were amenable to having a nonphysician health care provider perform one or more of these examinations. Conclusions. Primary care physicians are currently utilizing nonphysician health care providers to perform cancer screening examinations and the majority of those surveyed are amenable to the use of these providers for such examinations. This suggests that one possible strategy for increasing skin cancer screening is through an expanded role of nonphysician health care providers.</p>	<p>Oliveria, S. A., Altman, J. F., Christos, P. J., & Halpern, A. C. (2002). Use of nonphysician health care providers for skin cancer screening in the primary care setting. <i>Preventive Medicine</i>, 34, 374-379.</p>
53	<p>Objective: To compare resource use in physician assistant (PA) services versus teaching services for five medical diagnostic groups in a large community teaching hospital, while controlling for attending physician. Methods: The sample was drawn from an administrative database of patients admitted to an internal medicine service in which attending physicians' cases rotated between the PA and teaching services on a preassigned schedule. Diagnoses included in the study were stroke (diagnosis-related group [DRG] 014), pneumonia (DRG 089), acute myocardial infarction (DRG 122), congestive heart failure (DRG 127), and gastrointestinal hemorrhage (DRG 174). Cases discharged between January 1, 1994, and June 30, 1995, were evaluated. Inclusion of cases was based on the Integrated Inpatient Management Model (IIMM). Resource use was measured using direct costs expressed as relative value units (RVUs) for radiology, laboratory, and total resource use, as well as for length of stay (LOS). Results: After adjustment for admitting physician effects and other covariates, the mixed model analyses indicated that PAs used fewer total ancillary resources for patients with pneumonia and fewer laboratory resources for patients with stroke, pneumonia, and congestive heart failure than did residents, on average. No significant differences were noted in average LOS or use of radiology resources between PA and teaching services. In no cases did PAs use significantly more resources than residents. However, significantly higher mortality among pneumonia cases was detected for PAs. Conclusions: In the same practice setting, PAs used resources as effectively as, or more effectively than, residents.</p>	<p>Van Rhee, J., Ritchie, J. & Eward, A. M. (2002). Resource use by physician assistant services versus teaching services. <i>Journal of the American Academy of Physician Assistants</i>, 15(1), 33-42.</p>

No.	Description	Reference
54	<p>Physician assistants are clinicians who are licensed throughout the United States to practise medicine in association with physicians. They perform many of the tasks previously done solely by their physician partners, including examination, diagnosis, and carrying out investigations, as well as treatment and prescribing. All physician assistants must be associated with a physician and must practise in an interdependent role, described as "negotiated performance autonomy." Physician assistants are not independent practitioners but practice-focused autonomous professionals delivering care in partnership with physicians, in a role described as "negotiated performance autonomy." This relationship allows them to staff satellite clinic offices, provide on-call services in the practice, and deliver care in rural areas, as in most states the physician partner need not be physically present for the physician assistant to practise. They may work as house staff in large academic teaching centres, replacing physicians whose posts are no longer funded, and they also serve as commissioned officers in all branches of the American armed forces. Numerous studies have shown that the quality of care given by physician assistants is at the level of that given by physicians in comparable situations, with high levels of patient satisfaction. Actuarial data do not show any increased liability as a result of using physician assistants. A growing body of research and extensive clinical experience shows that they are accepted by both patients and doctors and that their performance in terms of quality of care, expanded access, and cost effectiveness is satisfactory. The licensing boards in 50 states and the District of Columbia recognise physician assistants as healthcare practitioners authorised to perform diagnostic and therapeutic tasks delegated to them by physicians. From a legal perspective, enabling legislation empowers physician assistants to perform any clinical task within the scope of practice of, and sanctioned by, their supervising physicians. This wide latitude acknowledges the broad basis of physician assistants' abilities and recognizes their physician partner as the best judges of individual physician assistants' knowledge and skills. This conceptual framework has led to physician assistants providing virtually every clinical service, excluding primary responsibility for major surgery. This does not mean that every physician assistant is qualified to provide every service, even though they may be able to do so "legally." Physician assistants treat most primary care illnesses on their own without direct supervision by their physician partner. Physician assistants in community practice typically have a regular schedule of patients according to the needs of the particular practice - interviewing, examining, evaluating, diagnosing, and treating the vast majority of presenting patients - without the physician's presence in the room. In hospitals, physician assistants provide continuity of care for patients. This may take the form of attending private patients, or filling the role of house officer. PAs can be found in almost every medical and surgical specialty- both in broad specialties such as family medicine and general surgery and in subspecialties like cardiothoracic surgery, interventional neuroradiology, forensic medicine, occupational health, and dermatology. Specialised procedures performed by physician assistants tend to be specific to a particular clinical field or setting, not unlike those undertaken by physicians and commensurate with adequate formal or informal postgraduate training. Examples include insertion of central access lines and chest tubes, invasive diagnostic procedures, ambulatory surgery, harvesting of saphenous veins for bypass procedures, and many others.</p>	<p>Mittman, D. E., Cawley, J. F., Fenn, W. H. (2002). Physician assistants in the United States. <i>BMJ</i>, 325, 485-487.</p>

No.	Description	Reference
55	<p>Purpose: To describe the colorectal cancer-screening program at Harvard Vanguard Medical Associates, a large multispecialty medical group, in which nurse practitioners (NPs) and physician assistants (PAs) perform screening flexible sigmoidoscopies. Harvard Vanguard Medical Associates established endoscopy training guidelines based on information found in the literature and shared by other screening programs utilizing NP and PA endoscopists. The gastroenterology department did not offer a formally accredited course, but rather a hands-on learning experience under the direction of the group's gastroenterologists. Endoscopic skills are acquired gradually through the repeated performance of procedures under appropriate supervision. Trainees develop skills at variable rates due to differences in manual dexterity, interpretative skills, clinical judgment, and quality of instruction. Supervision requirements vary from clinician to clinician during the course of training. Training progresses through several stages along a continuum of graded responsibility and reduced supervision. A minimum of 100 supervised examinations performed over a two to four month training period are required before assuming competency in flexible sigmoidoscopy techniques. Once trainees have completed the required number of supervised cases and demonstrated the ability to perform the flexible sigmoidoscopy procedures within a reasonable period of time and with minimal discomfort to the patients, they are permitted to perform the procedures independently. Since the acquisition of endoscopy skills is a lifelong process, the NP or PA endoscopist continues to benefit from the immediate availability of staff gastroenterologists to assist with more difficult procedures and to consult on positive findings. On-site availability of a gastroenterologist at all times is a requirement of the program regardless of the skill level of the NP or PA. Within the screening program, the NPs and PAs are also responsible for discussing with patients the results of colonic biopsies and assisting the gastroenterologists with scheduling patients for further procedures. Data Sources: Scientific literature, consensus statements and guidelines, and the protocol utilized to train NPs and PAs to perform flexible sigmoidoscopy. Data from 9,500 screening procedures are presented. Conclusions: In comparison with gastroenterologists, trained NP and PA endoscopists perform screening flexible sigmoidoscopy with similar accuracy and safety but at lower cost. After an initial 100 examinations, three advanced practice clinicians (one NP and two PAs) achieved a mean depth of examination of 52 ± 10 centimeters. The depth of insertion did not change with the performance of additional procedures. The length of the colon examined when a physician performed the sigmoidoscopy was 55 ± 9 centimeters. This difference in the depth of insertion was not felt to be clinically significant. In fact, there were no differences in the rates of detection of polyps by physicians and those of the NPs and PAs. Polyps were detected in 321 (23%) of the examinations by physicians and in 619 (27%) of the examinations by NPs and PAs ($p=0.34$). Neoplastic polyps were detected in 80 (6%) of the examinations by physicians and in 180 (8%) of the examinations by NPs and PAs ($p=0.35$). No major complications were observed in examinations performed by the NPs and PAs. The overall costs for performing flexible sigmoidoscopy by NPs and PAs were 33% less than those of the staff gastroenterologists. The conclusions were that in comparison with gastroenterologists, trained NP and PA endoscopists perform screening flexible sigmoidoscopy with similar accuracy and safety, but at lower cost. Implications for Practice: Screening flexible sigmoidoscopy performed by NPs and PAs may increase the availability and lower the cost of flexible sigmoidoscopy for colorectal cancer screening.</p>	<p>Horton, K., Reffel, A., Rosen, K. & Farraye, F. A. (2001). Training of nurse practitioners to perform screening flexible sigmoidoscopy. <i>Journal of the American Academy of Nurse Practitioners</i>, 13(10), 455-459.</p>

No.	Description	Reference
56	<p>This article examines the question of whether the US physician assistant (PA) model is the right solution for the NHS staff shortage. It describes the US PA model, including training, conflicts and difficulties, the practicalities of introducing US-style PAs into the UK, and the potential impact of introducing US-style PAs. The authors provide four real examples of the roles of PAs; two in primary care, and two in secondary care. These are: Primary care <i>The Howard City Medic One Clinic</i> is a family medicine clinic in an underserved rural region of Michigan. An advanced practice nurse and a physician assistant routinely staff the clinic. A general practice doctor is on site for a day and a half each week and otherwise available for consultation via email and telephone. The practitioners on site provide medical care for the entire range of outpatient conditions from "well child" check ups to emergency treatment of myocardial infarctions and surgical conditions before transport to hospital. <i>The Kentwood Family Medicine Center</i> in suburban Grand Rapids, Michigan, is staffed by a team of five physicians in private practice, one physician assistant, one advanced nurse practitioner, and junior doctors at various levels of training. All patients are private patients who select the centre as the site for their medical care; reimbursement for services follows the traditional US model. The physician assistant and advanced nurse practitioner provide health maintenance and preventive care, diagnose and treat minor illness, provide prenatal care, and perform routine follow up care for illness and surgery. In addition, the centre provides instruction to medical students, physician assistant students, and advanced practice nursing students during the clinical experience part of their training. Secondary care <i>The urology service at Spectrum Health Medical Center</i> in Grand Rapids is staffed by 12 trained urologists (consultants and surgeons) and two physician assistants. In addition, the medical centre provides nursing services, and medical students, postgraduate physician assistants pursuing additional training in the surgical services, and junior doctors training in surgery provide medical care. The physician assistants on the unit provide preoperative care (including presurgical histories and physical examinations), assist in surgery, and provide postoperative care. <i>The emergency department at St Mary's Mercy Medical Center</i> is staffed at all times by three to five board specialty trained physicians in emergency medicine, an advanced practice nurse, and a physician assistant. As a training health facility, the department also has medical, nursing, and physician assistant students. In this setting the mid-level practitioners provide care such as first response at trauma cases, diagnosis and treatment of illnesses commonly seen in community clinics, repair of uncomplicated lacerations, and treatment of minor fractures and sprains.</p>	<p>Hutchinson, L., Marks, T., & Pittilo, M. (2001). The physician assistant: Would the US model meet the needs of the NHS? <i>BMJ</i>, 323, 1244-1247.</p>

No.	Description	Reference
57	<p>Nonphysician providers are being increasingly used to care for trauma patients. As these complex patients recover, they require meticulous medical management and time-consuming psychosocial care. A retrospective evaluation of a unique patient care service staffed by nonphysician providers is presented. The Intermediate Care Service is designed to facilitate the management and long-term placement of trauma patients who no longer require intensive care while recovering from their injuries. In July 1998, the trauma physicians at a level one trauma center proposed using nonphysician providers to care for trauma patients who were likely to require long-term hospitalization. Under the supervision of a trauma surgeon/ surgical intensivist, two nonphysician providers—an ACNP (acute care nurse practitioner) and a PA—manage trauma patients whose injuries have been stabilized. The term Intermediate Care Service (ICS) is used to describe the ongoing trauma patient care services coordinated by these providers. The admitting trauma team transfers patients to the ICS. Patients who are transferred to the team are those admitted to the trauma service who no longer require treatment in the ICU, do not have active surgical problems (e.g., an open abdomen or fistula), and are likely to need extensive rehabilitation and long-term hospitalization for their injuries. Patients are transferred to the ICS directly from the ICU, or when acute surgical issues have been resolved after a brief stay on a medical/surgical unit. Once a patient is transferred to ICS, either the ACNP or PA assumes responsibility for patient care management, depending on who is on call and each person's patient caseload. On average, they each manage four to six patients. The trauma surgeon/surgical intensivist makes weekly rounds on the patients and is available on a daily basis as needed when questions arise. The model is an example of collaborative practice in which nonphysician providers and the trauma surgeon provide care for patients and share equal authority for care within their scopes of practice. When a new patient is accepted to the ICS, the nonphysician provider conducts an in-depth evaluation of the patient to assess existing and new problems, re-evaluate injuries, determine the level of care needed, and modify treatments as appropriate for the reduced acuity of the patient. The evaluation includes a detailed chart review to gain a thorough picture of the patient's hospital course. The provider reviews progress reports, diagnostic test results, and notes written by members of the multidisciplinary team (nursing, physical therapy, occupational therapy, speech therapy, social work, dietary) to learn as much about the patient as possible. Data are reviewed to identify physical, cognitive, social, financial, and other issues that may affect recovery and discharge to rehabilitation.</p> <p>After the record review, the nonphysician provider conducts an in-depth history and complete physical examination of the patient. Orders are written based on the initial evaluation of the patient, with a focus on rehabilitation and discharge planning. The new diagnoses, physician order changes, and disposition of 93 patients cared for during a six-month period are described. Most patients were admitted with neurologic injury. The most common new diagnosis was constipation; the most frequent new orders related to medications, including bowel management, and rehabilitation consultations. All patients were discharged from the hospital. One fourth of the patients were discharged home. The remaining patients were transferred to skilled nursing facilities, rehabilitation centers, or other hospitals. Because the ICS service is part of a regional level one trauma system, stable patients are sometimes transferred back to original outlying hospitals. All of the 93 patients managed by the ICS team survived, and no one required a higher level of care (e.g., transfer back to the ICU for treatment). The authors suggest that the ICS represents a unique and valuable model for the collaborative management of complex trauma patients. With regard to implications for practice and research, the authors state that the study was designed to describe the practice of an ACNP and PA who manage trauma patients. The study is not a comprehensive evaluation of outcomes of nonphysician providers, and it is limited to one institution. They note that many readers may want additional information on outcomes according to type of nonphysician provider (i.e., ACNP and PA). However, in the model of care provided by the ICS team, both providers assume equal responsibilities for patient care and work as a collaborative practice team. The authors conclude that this descriptive study shows that nonphysician providers can manage trauma patients once their injuries have been stabilized.</p>	<p>Sole, M. L., Hunkar-Huie, A. M., Schiller, J. S. & Cheatham, M. J. (2001). Comprehensive trauma patient care by nonphysician providers. <i>AACN Clinical Issues</i>, 12(3), 438-446.</p>

No.	Description	Reference
58	<p>The practice autonomy of primary care physician assistants (PAs) is of interest to those organizing, financing, and delivering health services. This study examined the predictive abilities of practice attributes with respect to multidimensional aspects of practice autonomy (clinical decision making and prescriptive authority) in primary care PAs. A sample of 225 practicing PAs was used to construct the 16-item Physician Assistant Autonomy of Practice Instrument (PAAPI), which includes three subscales, routine prescriptive authority, advanced prescriptive authority, and clinical decision making. All were used as dependent variables in multiple regression analyses. The most significant correlates of practice autonomy included years in practice as a PA, years in practice with supervising physician, annual income from practice, recognition as the exclusive primary care provider for patients, primary practice in a rural county, and primary employment setting (single-specialty group practice). More primary care PAs continue to be used in underserved rural areas and in managed care. Organizational structure of the work setting may influence these PAs' practice autonomy.</p>	<p>Chumbler, N. R., Weier, A. W., & Geller, J. M. (2001). Practice autonomy among primary care physician assistants: The predictive abilities of selected practice attributes. <i>Journal of Allied Health, 30</i>(1), 2-10.</p>
59	<p>Objective: To compare patient care delivery by neonatal nurse practitioners (NNPs) and physician assistants with that of pediatric residents in the intensive care setting. Design: Retrospective chart review after developing specific performance criteria, namely, patient management, outcome, and charges. Methods/Materials: Charts for 244 consecutive admissions to a neonatal intensive care unit in Jacksonville, Florida, were reviewed. Patients were cared for by one of two teams, one staffed by residents and the other by neonatal nurse practitioners and physician assistants. Team 1 was composed of a neonatologist, a third-year pediatric resident, and three second-year pediatric residents. Pediatric residents were assigned to the NICU for two one-month rotations during the second year (PL-2) and again to two one-month rotations during the third year (PL-3). The PL-2 residents provided direct patient care and were responsible for writing daily notes, orders, and procedures. The PL-3 residents assisted in these functions when needed but performed a more supervisory role for the junior residents. Residents were on call every fourth night for their team and worked an average of 70 to 80 hours per week in the NICU. Team 2 was staffed by NNPs and PAs, with another neonatologist providing supervision. The UMC employed seven NNPs and two PAs during this period to work in the Division of Neonatology. All NNPs had been trained in the certificate nurse practitioner program at UFHSC-J (University of Florida Health Science Center, Jacksonville). Requirements for entry into this program include a registered nurse degree and previous experience as a staff nurse in an NICU, which varied from two to 12 years for the NNPs employed during the study period. The nurse practitioner training program included four months of classroom work and five months of supervised clinical training. The two PAs who had no previous NICU experience were also required to attend this course. Neonatal nurse practitioners and PAs held the same patient care responsibilities as did the residents, including writing daily progress notes and orders on all patients assigned to their team. Neonatal nurse practitioners and PAs also performed all procedures on their patients, including but not limited to endotracheal intubation and placement of umbilical catheters, peripheral arterial lines, and chest tubes. Similar patients were cared for by the two teams, as determined by patient background characteristics and diagnostic variables. Performance of the two teams was assessed by comparison of patient management, outcome, and charges. Management variables included data on length of critical care and hospital stay, ventilator and oxygen use, total parenteral nutritional use, number of transfusions, and the performance of various procedures. Outcome variables included the incidence of air leaks, bronchopulmonary dysplasia, intraventricular hemorrhage, patent ductus arteriosus, necrotizing enterocolitis, retinopathy of prematurity, and number of infants who died. Charge variables included hospital and physician charges. Main Results: Results demonstrated no significant differences in management, outcome, or charge variables between patients cared for by the two teams. Conclusion: Neonatal nurse practitioners and physician assistants are an effective alternative to residents for patient care in the neonatal intensive care unit.</p>	<p>Carzoli, R. P., Martinez-Cruz, M., Cuevas, L. L., Murphy, S. & Chiu, T. (1994). Comparison of neonatal nurse practitioners, physician assistants, and residents in the neonatal intensive care unit. <i>Archives of Pediatrics and Adolescent Medicine, 148</i>, 1271-1276.</p>
Grey Literature		
60	<p>Background: This is a summary of a two-year study of the Scottish Physician Assistants (PAs) pilot that ran from November 2006 to October 2008. Fifteen USA educated PAs worked in Scotland at some period during those 24 months in the following settings: primary care; out of hours clinic; emergency</p>	<p>Farmer, J., Currie, M., West, C., Hyman, J. & Arnott, N. (2009).</p>

No.	Description	Reference
	<p>medicine; intermediate care; orthopaedics; acute receiving unit. The study aimed to evaluate the impact and contribution made by the appointed PAs to delivering effective healthcare in NHS Scotland.</p> <p>Methods: The evaluation used mixed data collection methods (e.g., individual and group interviews; monthly feedback forms; recording of scope of practice, etc.). Data were collected longitudinally to assess changes. A case study approach was taken in selected settings to attain richness. For qualitative data management, nVivo was used. SPSS and Excel were used for quantitative data analysis. Findings: <i>Response</i>: Six group interviews were held with PAs; 63 interviews with team members; 20 interviews with patients; four with NHS senior managers and three with Partnership Forum representatives. Work activity data were collected for settings; 48% (92/190) of monthly PA/medical supervisor feedback forms were received. <i>Safety</i>: Over 24 months, two minor patient safety issues were noted by supervising doctors: a mix-up with patient notes and a PA advising a patient to change drug regimen without consulting their supervising GP. From this study, PAs appeared safe when working under medical supervision. All patients interviewed were satisfied with PAs, several noting that they appreciated PAs' communication skills. <i>Effectiveness</i>: PAs' scope of practice tended to expand over time, but most thought they had not been able to work to the scope and level they would do in the US. Inability to prescribe was a hindrance. PAs usually spent longer time with patients as patient education was reported to be a feature of PA training. PAs were reported to provide continuity in busy settings and to be an educational resource for other staff. Most interviewees reported PAs were working in a range from similar to a nurse practitioner to similar to a mid-level/generalist doctor. The valued distinctive features of PAs were: generalists with a background of medical training, confident and autonomous within their scope of practice, can do differential diagnosis, communication skills, confident in dealing with uncertainty. Medical supervision arrangements varied from close to formal/ distant relationships. PAs reported working most effectively, and were most satisfied, where there was a distinct gap in a team that they could fill. NHS senior managers were mostly satisfied that PAs might be one of several new roles developed for the future NHS. Partnership Forum representatives suggested that team members became less anxious about PAs once they were informed and had worked with them. <i>Cost-effectiveness</i>: Teams noted that PAs brought a level of skills and attitudes that overlapped with other roles. Thus PAs were described as complementing team skill-mix, rather than as a potential direct replacement for other staff members. When specifically asked to choose, interviewees suggested the types of existing job designations that PAs could be placed in. These included both nursing and medical roles and the costs of deploying a PA instead of these existing posts were calculated, based on gross salaries at the time of the study. Towards the end of the study, the newly qualified PA post was evaluated under Agenda for Change at Band 7 (£29,091 - £38,353). It was found that PAs would cost approximately £15,000 more if they worked in the role of a practice nurse (as one PA was actually deployed in primary care) to saving £43,000 upwards if they worked 'like' a generalist doctor (specialist trainee, staff grade or GP in training). Costs to the NHS would arise from setting up PA education courses, professional development and related structures. The time spent by supervising doctors, with PAs, was also noted as a cost. Conclusions: a) During the study PA's practice was found to be safe; b) Patients who were interviewed were found to be satisfied with PAs; c) PAs were reported to be most valued, and expressed most satisfaction themselves, where they were working in a new role or where they could find a distinct space to fulfill their potential scope of practice. Findings suggest they were less able to do this in primary care, compared with other settings. This may be related to the settings and work arrangements in the pilot project; d) Findings suggest a 'mid-level' practitioner space, that there are currently challenges filling, in some settings in NHS Scotland. There may be a range of types of practitioner that could fill this generalist space, with appropriate education, training and experience. The skills and attitudes required are: critical thinking, diagnostic skills (capacity for differential diagnosis), generalist/holistic medical approach, communication skills and confidence in dealing with uncertainty. Practitioners with these skills and attitudes can provide continuity and a training resource in settings; e) The opinions of team members interviewed in this study concur with evidence from the USA suggesting that PAs add complementary skills and attitudes to teams and should not be regarded as a potential direct 'substitute' for a nurse or a doctor. Findings suggest team members think PAs would be one of a range of roles that might be present in an ideal team. If PAs were to undertake some of the work that might 'replace' existing roles, then cost savings might result. There would be costs in developing education, accreditation and support structures; f) A strong and trusting relationship is required between PAs and their supervising doctor. Although the NHS tends to be hierarchical, instances of these types of relationships emerged in the pilot showing that this is possible in NHS Scotland. With such a relationship in place, PAs were described as working like 'physician extenders'; conducting a range of routine tasks in the manner that their supervising doctor required and freeing the doctor to concentrate on more complex work; g) PAs could not prescribe in the pilot. This was more of a hindrance in primary care and the out of hours clinic than in emergency medicine and other hospital settings. Piloting of PAs in other settings may be dependent on achieving prescribing rights; h) Findings</p>	<p><i>Evaluation of Physician Assistants to NHS Scotland: Final Report.</i> UHI Millennium Institute.</p> <p>Available at: http://www.nes.scot.nhs.uk/media/3933/uhi_final_report_january09.pdf</p> <p>Last accessed: July, 2011</p>

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	<p>of this study should be viewed in the light of caveats. PAs were piloted in a small number of settings. There were a small number of PAs, some departed and some arrived during the study, making evaluation complex. PAs could not prescribe and did not think they were given the scope to expand to their full potential. PAs in the Project were often highly experienced and were from the USA. The skills and attitudes of UK or Scottish trained PAs might be different. Sometimes personalities did not fit and this impacted on team members' and NHS Boards' experiences with PAs; (i) The PA profession is spreading internationally in response to workforce gaps. This study suggests PAs may offer some promise in meeting Scottish policy goals. Scotland's choice is to become part of the world-wide development of the PA profession and/or to develop existing professional groups into the mid-level, generalist 'space' identified.</p>	
61	<p>In California, as in other states, consumers are having difficulty getting access to physicians in some specialties, including gastroenterology, orthopedics, and dermatology. The challenges may be particularly acute for patients of community clinics and public hospitals. Many specialty medical practices have incorporated physician assistants (PAs) and nurse practitioners (NPs) into their outpatient settings to improve access to care, reduce wait times, and improve quality of care. A study by the Center for the Health Professions at the University of California, San Francisco, examined these emerging models to evaluate their success and identify strategies that could be replicated. The study focused on outpatient care in three specialties with particularly high demand rates: orthopedics, gastroenterology (GI), and dermatology. The research found that utilization of physician assistants and nurse practitioners varied across these specialties. For example: Orthopedics. Orthopedic practices commonly rely on physician assistants to do many orthopedic assessments and procedures. The prevalence and long track record of this model throughout the United States suggests it will become even more widely adopted. Gastroenterology. A growing number of GI practices employ NPs and PAs to increase follow-up patient volume, freeing physicians to do high-level procedures. The business model is strong, suggesting that this approach will become more widespread. Dermatology. Some practices employ PAs as clinical providers for routine cases, allowing supervising physicians to focus on complex cases and surgeries. The study found that these models generally improved access, reduced wait times, and proved financially sustainable. Although quantitative evidence is scarce, qualitative information points to maintenance or improvement in quality of care. The successful models have implications for practitioners and delivery site managers, including those at community clinics and public hospitals where some patients experience significant delays in getting specialty care. Some sites might want to develop a system relying on teams of physicians, NPs, and PAs to provide specialty care. Others could benefit from fully understanding how such systems work to facilitate efficient and effective referrals. There are challenges to implementing these models. Most PAs and NPs must be trained on the job because of the small number of postgraduate medical specialty programs. In addition, all practitioners—physicians, PAs, and NPs—must be aware of everyone's strengths and limitations, must be able to work collaboratively, and must keep lines of communication open. Sustainable financing can be accomplished with attention to the details of the practice model, including incorporating time for supervision and mentoring into the daily routine. Although state laws and regulations regarding legal scopes of practice for NPs and PAs should be considered, the legal environment was not found to be a significant barrier to implementing these models. The document presents case studies of six practices that have integrated PAs and NPs into their clinical settings. 1) Kaiser Permanente Fontana Medical Center, Orthopedic department – Fontana, California. The Kaiser Fontana Medical Center Orthopedic Department relies on 13 physician assistants and one nurse practitioner to provide a broad range of out- and inpatient services, including “first call” for all orthopedic consult requests from urgent care, primary care, emergency, or inpatient services. PAs conduct all initial evaluations and fully handle an estimated 80 percent to 90 percent of patient cases, with the remainder—such as fractures that are not reducible and may require surgery—referred to physicians. PAs order and read imaging studies and other tests, apply casts, set bones such as wrists, prescribe medications (except schedule II drugs at discharge), and provide most other orthopedic treatment. Fourteen physicians supervise the PAs. A team of four rotating PAs works essentially as PA hospitalists to support inpatient care and work closely with three internist physicians. The nurse practitioner works in podiatric surgery. 2) St. John's Clinic-Orthopedic Specialists – Springfield Missouri. This clinic provides a full range of orthopedic services within an integrated health care system owned and operated by the Sisters of Mercy. Approximately 13 physician assistants work with 16 orthopedic physicians providing both in- and outpatient clinical care. Outpatient services provided by the PAs include seeing and evaluating patients, applying and removing casts, prescribing medications (except narcotics), ordering and interpreting tests, and delivering joint injections. Physicians and PAs usually work together in teams of two, though some physicians in the group do not work with any PAs. With the one-on-one team approach, PAs always have access to a physician and receive both direct and general supervision. The practice experimented with allowing experienced PAs to see some new patients but modified its policy due to concerns from some</p>	<p>Dower, C., & Christian, S. (2009). Physician Assistants and Nurse Practitioners in Specialty Care: Six Practices Make It Work. Report prepared for the California HealthCare Foundation.</p>

No.	Description	Reference
	<p>community primary care physicians. Now, all new patients see a physician in addition to a PA. Patients are seen exclusively by PAs for many follow-up visits, although physicians emphasize to PAs during their orientation and training that they must continuously sharpen their skills regarding patient satisfaction and assess whether a patient may want to see a physician instead of, or in addition to, the PA. 3) Division of gastroenterology, hepatology, and nutrition, University of Florida - Gainesville The Gastroenterology, Hepatology & Nutrition Division within the University of Florida's (UF) Department of Medicine is a top-ranked unit in the United States. A team of 14 medical doctors, four PAs, and three NPs work to meet extremely high-volume demands for GI services ranging from basic assessments to liver transplants. Physician assistants and nurse practitioners focus on outpatient needs and function similarly to medical fellows or junior attending physicians. Working collaboratively with the physicians, the PAs and NPs have broad scopes of responsibility and competence. The unit stresses communication among all clinicians and works to ensure that PAs and NPs have access to physicians whenever needed. Specific responsibilities vary. 4) Digestive Health Specialists – Federal Way, Washington. Digestive Health Specialists (DHS) is a specialty group of medical doctors and non-physician clinical staff working at nine gastroenterology outpatient clinics and four endoscopy centers in and around Tacoma, Washington. Collectively, eight physician assistants and five nurse practitioners complement a team of about 20 gastroenterologist physicians to provide care in outpatient settings and at several affiliated local hospitals for inpatient services. Although specific duties and responsibilities may vary, the PAs and NPs work fairly independently and provide a full range of medical care except high-level diagnoses and procedures such as endoscopy and colonoscopy. 5) Dermatology Clinic, P. C. – Salem, Oregon The Dermatology Clinic is a private group practice composed of four dermatology physicians and three physician assistants. Each PA has his or her own patient caseload, which is generally equal to the physician caseloads. Compared with physicians, PAs for the most part provide a similar scope of clinical services. Exceptions include some complicated surgeries and diagnostically complex patients, whom the physicians handle. PAs see patients, write treatment plans, prescribe medication, perform biopsies for skin cancer, make incisions, and provide some laser treatments. PAs work collaboratively with physicians on-site, requiring minimal supervision but under a rigorous monitoring policy. PAs do not see patients without a physician on-site. All new patients are seen by a physician and a PA at their first visit. PAs may see the patients on their own for follow-up visits when there is no change in treatment plans; if any questions arise, the PA consults with the physician to resolve the question, re-evaluate the patient, and/or re-establish a treatment plan. If any new problems arise, the patient sees the physician. All PAs work with all physicians and interact regularly throughout the day. 6) Central Carolina Dermatology Clinic Inc. – High Point, North Carolina This six-physician dermatology group employs one physician assistant who sees 25 to 40 patients per day. He does evaluations, orders laboratory tests, orders ultraviolet light treatment, and performs biopsies and excisional surgeries (though not flaps, grafts, or Mohs surgeries). He has prescriptive authority but no Drug Enforcement Agency number, by choice, so he does not prescribe narcotics. He has worked with this practice for five years and previously was at another dermatology practice for seven years. With this experience, he works fairly independently and occasionally consults with the physicians for second opinions or complex cases</p>	

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62	<p>As the physician assistant (PA) profession has matured, it has become a significant factor in the nation's health care delivery system. Quality of care stakeholders are increasingly concerned about the medical care being delivered by non-physician providers. Stakeholders include local and national government, health care delivery organizations, health care provider education programs, the health insurance industry, and the general public. Each is affected by the liability of physician assistant medical practice. While PAs are being trained and hired at a rate that assumes adequate competence, quality and safety, current research is absent of a comprehensive analysis of PA malpractice over time. This study examined 17 years of data related to unsafe medical practice (i.e., practice that harms patients or the public). The study analyzed and compared a variety of markers (e.g., civil lawsuits and Medicare program exclusions filed with the National Practitioner Data Bank) of safety between physicians, PAs, and advanced practice nurses (APNs). Results of the study suggested that: a) the overall incidence and ratio of malpractice claims per provider was no greater for PAs and APNs than for physicians over a 17 year period; b) the average and median malpractice payments of PAs were less than that of physicians while that of APNs were greater; c) the trend in median payment increases was less for PAs than physicians and APNs, and higher for APNs than physicians; d) PAs did not negate their cost effectiveness through the costs of malpractice; e) the rate of malpractice incidence increased for PAs and APNs over the study period but remained steady for physicians; and f) the reasons for disciplinary actions against PAs were similar to that of physicians and APNs. Other study findings included gender differences in both malpractice payment incidence and malpractice payment amount and disparities between states regarding the frequency of disciplinary actions as compared to malpractice incidence.</p>	<p>Nicholson, J. G. (2008). Physician Assistant Medical Practice in the Health Care Workforce: A Retrospective Study of Medical Malpractice and Safety Comparing Physician Assistants to Physicians and Advance Practice Nurses. Doctoral dissertation, University of Wisconsin – Madison.</p> <p>Available at: http://www.paexperts.com/Dissertation.pdf</p> <p>Last accessed: July, 2011</p>

No.	Description	Reference
63	<p>The Canadian population is severely under-served by orthopaedic services while experiencing the longest waiting times of any specialty for elective consultation and surgery. Resource restrictions further exacerbate this problem. The University of Manitoba Joint Replacement Group (UMJRG) at Concordia Hospital in Winnipeg, Manitoba has met these challenges by adopting the physician assistant model. Known as clinical assistants (CA) in Manitoba, CAs have been practicing since 2003. Working under a supervisory physician, orthopaedic physician assistants perform the following: take medical histories; examine and treat patients under supervision; order and interpret investigations to make diagnoses; chart operative and progress notes; write orders; assist in the operating room; and write prescriptions. Some empirical evidence from the literature indicates that physician assistants enhance physician productivity and economic efficiency. They also enhance access and patient satisfaction. The literature on PAs in orthopaedics, while limited, indicates strongly positive outcomes for PA-orthopaedic surgeon practice. There are four components to this study: The first examines surgeon time savings; the second is an opinion survey of stakeholders including surgeons, nurses, residents and patients on the role of physician assistants in care delivery; the third is a costing analysis; and the fourth examines reduced waiting times attributed to running two operating rooms employing clinical assistants. In this study, physician assistants were found to free up for their supervising orthopaedic surgeon the equivalent of four 50 hour work weeks per year. Surgeons can in turn use this time for other activities such as administrative work, research, and other clinical activities. The use of physician assistants as first assistants in the operating room instead of general practitioners freed up the equivalent of 1.5 general practitioners working 40 hours per week for 44 weeks per year based on a surgical volume of 1,400 joint replacements per year. Operating room and ward nurses feel that physician assistants are important team members that improve care delivery. Nursing staff do not feel that physician assistants fill an expanded healthcare provider role that should be in the domain of nursing. Orthopaedic surgeons feel strongly that physician assistants improve the quality of care of their patients both in the operating room and on the ward, and that physician assistants greatly reduce the amount of "scut work" that they have to perform. Patients report very positively that physician assistants improve the care that they receive on the ward, and that they are important members of the care team. Physician assistants can greatly improve surgical throughput and greatly improve surgeon capacity. In this study, the double room model facilitated an increase in primary joint volumes of 42%. The increased throughput associated with the double room model has reduced median wait times in this particular surgical group by 14 weeks down to 30 weeks, which is quite close to the national benchmark. This is a reduction in median waiting times of 32% over the previous year. Improved efficiencies would also be anticipated under other operating room arrangements where PAs are employed. Evidence supports that employing PAs reduces health system expenditures. While the forgone general practitioner surgical assist fees in 2006 (\$270,000CDN) correspond to the total salary costs for the three physician assistants (\$270,000 to \$327,000 CDN), these numbers underestimate the real cost savings of PAs. (The value added benefits of PAs noted above and the flexibility of PAs to work in both the OR and on the ward are not reflected in these salary only numbers.)</p>	<p>National Standards Committee, Canadian Orthopaedic Association (2007). <i>Report on Orthopaedic Clinical Assistants in Manitoba</i>. June.</p> <p>Available at: http://www.coa-aco.org/images/stories/articles/nsc_physician_assistant_report_2007_final.pdf</p> <p>Last accessed: July, 2011.</p>

No.	Description	Reference
64	<p>This document contains the Ontario PA scope of practice statement and the Ontario PA competency profile. The clinical expert competencies require that the PA demonstrate competency in the following clinical and procedural skills: The PA will be able to: i. Obtain health history as appropriate, including patient demographics, chief complaint, history of the present illness or injury, past medical, surgical, family and psychosocial history, medications, allergies and systems review. ii. Conduct comprehensive and focused physical assessments and interpret findings. This includes assessment of vital signs and examination of all major body systems. In addition, the PA will be able to perform psychological, ob-gyn, neonatal, pediatric and geriatric assessments. iii. Utilize primary and secondary assessment results to formulate a differential diagnosis and determine if further clinical investigation is required. iv. Order and complete preliminary interpretation of necessary diagnostic tests, which may include, but are not limited to, hematology, microbiology, chemistry, serology, urinalysis, blood gas, ECG, peak flow and plain film x-ray. v. Perform the following diagnostic procedures: ECG, Peak expiratory flow tests, Slit lamp examination (including fluorescein dye and intraocular pressure measurement), Visual acuity, Pap smear; and will demonstrate at least an academic understanding of the performance of the following diagnostic procedures: Routine and micro-urinalysis, Basic hematology, Clinical chemistry, Microbiology, Point of care kits, Audiometry. vi. Collect blood samples (arterial and venous), minor surgical samples, body secretions and body fluids (semen, sputum, wound drainage, and urine). vii. Formulate a treatment and management plan based on assessment and investigation results, availability of services and special needs of patient. viii. Implement the following interventions: Basic Life Support (BLS), Advanced Cardiac Life Support (ACLS), Basic and advanced airway management, IV cannulation, Immobilize fractures or suspected fractures with splints and/or casts, Basic and advanced wound management including suturing, Surgical first assist, if needed, and, will demonstrate at least an academic understanding, and may have demonstrated skills in a simulated setting, of the following interventions: Airway management including initiating treatment with portable transport ventilatory devices, Advanced trauma life support protocols, Minor surgery: biopsies, incision and drainage of abscesses, Other procedures: ear syringing, gastric lavage, enema administration, ix. Provide pharmacological therapy. The PA will be able to administer medication by the following routes: Topical, Oral, Sublingual, Inhalation, Subcutaneous, Intramuscular, Intravenous. And, the PA will demonstrate at least an academic understanding, and may have demonstrated skills in a simulated setting, in the administration of medications via the following routes: Intraosseous, Endotracheal, Rectal, Intranasal, Other. x. Monitor patient progress and response to treatment.</p>	<p>Mikhael, N., Ozon, P., & Rhule, C. (2007). Defining the Physician Assistant Role in Ontario: Ontario Physician Assistant Scope of Practice Statement and Ontario Physician Assistant Competency Profile. HealthForceOntario.</p> <p>Available at: http://www.healthforceontario.ca/upload/en/work/defining%20the%20role%20of%20physician%20assistant%20scope%20of%20practice%20and%20competencies%20document_%20may%202009%202007.pdf</p> <p>Last accessed: August, 2011.</p>

No.	Description	Reference
65	<p>Introduction: Looming demographic challenges are opening the door to the rise of a parallel private care system which will forever change the nature of a Canadian institution. Current shortages in surgical manpower cannot be addressed expediently due to 14-year university training requirements for new surgeons. A potential solution is to increase the efficiency of surgeons currently in practice. Physician assistants (PAs) may play a role in this regard by allowing surgeons to concentrate on their core competency, namely operating. The purposes of this investigation are to explore the inefficiencies in a current Canadian surgeon's practice, examine the feasibility of PA employment and evaluate the financial impacts. A PA is a health professional who practices certain aspects of medicine under the direct supervision of a licensed physician. Physician Assistants work in close association with physicians. They participate in a team approach to managing patients with an emphasis on performing tasks and duties that are routine in nature. Physician Assistants can work in primary care or subspecialty areas including orthopedic and plastic surgery, diagnostic imaging and internal medicine. They can be certified to perform duties such as history and physical taking, surgical assisting, writing prescriptions and managing routine medical problems. In the US, the scope of a PA's practice is limited by the guidelines set out by policy H- 160.947 of the American Medical Association (AMA), which include: (1) The physician is responsible for managing the health care of patients in all settings. (2) Health care services delivered by physicians and physician assistants must be within the scope of each practitioner's authorized practice, as defined by state law. (3) The physician is ultimately responsible for coordinating and managing the care of patients and, with the appropriate input of the physician assistant, ensuring the quality of health care provided to patients. (4) The physician is responsible for the supervision of the physician assistant in all settings. (5) The role of the physician assistant in the delivery of care should be defined through mutually agreed upon guidelines that are developed by the physician and the physician assistant and based on the physician's delegatory style. (6) The physician must be available for consultation with the physician assistant at all times, either in person or through telecommunication systems or other means. (7) The extent of the involvement by the physician assistant in the assessment and implementation of treatment will depend on the complexity and acuity of the patient's condition and the training, experience, and preparation of the physician assistant, as adjudged by the physician. (8) Patients should be made clearly aware at all times whether they are being cared for by a physician or a physician assistant. (9) The physician and physician assistant together should review all delegated patient services on a regular basis, as well as the mutually agreed upon guidelines for practice. (10) The physician is responsible for clarifying and familiarizing the physician assistant with his/her supervising methods and style of delegating patient care. No such national guidelines are yet established in Canada.</p> <p>Methods: The study was performed in three parts. In the first part, operating room (OR) plastic surgery data for the ten years ending in 2005 was analyzed to determine the allotted daily operating time used in performing operative procedures. In the second part, four months of detailed time series data was captured prospectively for every patient care event. The data was analyzed to determine the percentage and composition of events that could be delegated to a PA. In the third part, these delegation percentages were used to model different PA hiring scenarios using formal business case analyses. Results: Over the course of 3,635 days the mean operating time used in a ten hour surgical day was 5.93 hours. Of the 806 patients seen in 13 clinics, 53.5% could have safely been cared for by a PA. In the minor procedure area, 48.8 % of surgical time was spent performing non-essential, PA compatible work. In the main OR, 25.9% of surgical time was PA compatible. Considering the weekly mix of activities, a PA could increase surgical productivity by 36.7%. The business case analyses indicate that hiring a PA was neutrally cost effective at the 37% productivity increase level. However, much greater discounted incremental cash flows, internal rates of return (IRR) and return on investments (ROI) were achieved when PA hiring allowed one surgeon to run two OR's simultaneously. Conclusions: Hiring and proper implementation of PA's, in conjunction with increases in operating room capacity, have the potential to markedly increase the capability of surgeons to deal with lengthy surgical wait lists in a cost effective manner.</p>	<p>Sigurdson, L. (2006). Meeting challenges in the delivery of surgical care: A financial analysis of the role of physician assistants. MBA thesis, Saint Mary's University, Halifax, Nova Scotia. April.</p> <p>Available at: http://web.mac.com/lisigurdson/Leif_Sigurdson/Profile_files/Surgical%20Care%20Challenges.pdf</p> <p>Last accessed: July, 2011.</p>

No.	Description	Reference
66	<p>In response to local recruitment difficulties for General Practitioners (GPs), and in the Accident and Emergency (A&E) Departments at Sandwell Hospital and City Hospital Birmingham in the UK, 15 PAs were recruited to work in the Sandwell and West Birmingham areas. This report presents the findings of an evaluation commissioned from the Health Services Management Centre (HSMC) by the Department of Health (NHS Modernisation Agency) Changing Workforce Programme (CWP). In primary care, the PAs were found to undertake a wide range of clinical work covering a similar spread of presenting problems to their supervising GPs. With one exception, the PAs were dealing with an undifferentiated, acutely presenting, caseload. The PAs have expanded medical capacity in primary care, complementing GP expertise and increasing the available clinical skill-mix. However, as with other professionals, the impact of the introduction of PAs has varied, depending on a range of factors, including: a) The duration of PA consultations and the number of clinical sessions undertaken; b) The existing clinical skill-mix; c) The practices' clinic arrangements; d) GPs' and PAs' preferences, experience and the supervisory relationship. In A&E, the variation in the pattern of activity across the PAs is more marked. In one department with four PAs, the PA caseload ranged from dealing with mostly minor cases (like a clinical assistant or nurse practitioner) to concentrating on more complex or "major" cases (like a specialist registrar). However, the A&E experience has shown that the supervisory relationship embodied in the PA profession can prove challenging to operate in this setting in the NHS. The PAs working in primary care have commonly generated a highly positive response by clinical and non-clinical colleagues. The PAs working in A&E departments have in the main also been positively received, particularly by medical staff. Patients reported very positive views on their experience of PAs in primary care, and staff have reported positive feedback from patients in the A&E departments. Patients reported that PAs were able to meet their perceived needs, dealing with needs other than the presenting issue there and then without the need for another appointment. Patients also appreciated the good communication skills and pro-active giving of information as practiced by the PAs. PAs have made a positive impact on service quality in primary care. They are reported to have helped practices to improve access, are regarded by patients as giving high quality care, and are beginning to facilitate service development. PAs need to be included in clinical governance arrangements. There is no evidence to date that the introduction of PAs has resulted in any redefinition of professional boundaries or re-profiling of work between professions. This study, informed by patients' views, suggests that the PAs' working practices successfully facilitate patient-centred care, which is a key goal of NHS policy. In particular, the supervisory relationship is such that a PA can seek advice about a patient, when desired, without necessarily referring the patient on to a GP. The GP might be asked to join a consultation or discuss a patient after he or she has left the practice, with the PA subsequently contacting the patient if necessary. In this way, the supervisory relationship explicitly facilitates clinical collaboration, without adding to the "procession of healthcare faces" patients must endure to obtain treatment or advice. The extent of the contact initiated by PAs with doctors relating to patient care varies. However, the data show that the extent of the contact is often small, and appears to diminish over time, at least for those relating to the two PAs who have been in working in the NHS for longest. This study suggests that once PAs and GPs have established mutual trust and understanding, the burden on supervising GPs relating to PAs will not be unduly onerous. The two caveats here are that the PAs' ability to prescribe must be resolved, and that the PAs included in the study have at least four years' experience, and some are very experienced: newly qualified PAs are unlikely to practice in the same way. The cost-effectiveness of PAs compared to GPs varies; in some cases the lower cost of the PA is offset by longer consultation times and a lower volume of activity; in other cases the cost-effectiveness of the PA is compelling. More important, is the fact that the PAs have increased medical capacity in the face of an inability to recruit GPs to these deprived localities. Fulfillment of an individual PA's potential requires that their skills are well matched to a specific local need and work setting. The effectiveness of an overall programme to introduce PAs will have similar requirements.</p>	<p>Woodin, J., McLeod, H., McManus, R. & Jephth, K. (2005). <i>The introduction of US-trained physician assistants to Primary care and Accident and Emergency departments in Sandwell and Birmingham: Final Report</i>. Health Services Management Centre, University of Birmingham.</p> <p>Available at: http://www.hsmc.bham.ac.uk/publications/pdfs/Physician_Assistant_final_report.pdf</p> <p>Last accessed: July, 2011.</p>

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