Ontario Physician Assistant Implementation - Report of the Evaluation Subcommittee

December, 2011

Contents

1.0 Executive Summary

Background

In May 2006, the Ontario Ministry of Health and Long-Term Care (MOHLTC) announced Ontario's provincial health human resources strategy, "HealthForceOntario". One component of the strategy was the creation of four new health care provider roles, one of which was the physician assistant (PA). In partnership with the Ontario Medical Association (OMA), the MOHLTC established a project to demonstrate the potential value of the PA role in the Ontario health system in a variety of clinical settings. Parallel projects were established to demonstrate the PA role in hospital inpatient and emergency department (ED) settings, Community Health Centres (CHCs), and direct physician employment (PEPA) models.

Physician Assistant Role

Physician assistants are skilled health professionals that have been trained to support physicians in a broad range of health care settings. In general, PAs provide medical services under the direction and supervision of a registered (licensed) physician.

Source of PAs

There were two recruitment streams in the Ontario demonstration projects. PAs who trained in the Canadian Forces and PAs who trained in the United States are subsequently referred to as "formally trained PAs". Selected International Medical Graduates (IMG) who were assessed as possessing the competencies necessary to work as PAs in Ontario are subsequently referred to as "IMG stream PAs".

OHA Led Hospital Demonstration

The Ontario Hospital Association (OHA) led the organization and oversight of the PA demonstration in hospital inpatient and ED settings. Twenty one hospitals in Ontario employed PA practitioners in general internal medicine, hospitalist, surgery, emergency and orthopaedics, complex continuing care and ED roles.

AOHC Led CHC Demonstration

The Association of Ontario Health Centres (AOHC) led the organization and oversight of the PA demonstrations in primary care settings. Five Community Health Centres across Ontario employed PA practitioners.

OMA Led PEPA Demonstration

The Ontario Medical Association (OMA) led the organization and oversight of two demonstration projects, where PAs were directly employed by physicians (PEPA). One demonstration was in community-based endocrinology diabetes group practices, where the PA worked under the authority of a supervising endocrinologist, with other providers. The other project was in long-term care facilities, where the PA provided direct resident care under the supervision of a primary care physician.

Evaluation Subcommittee

The role of the physician assistant Evaluation Subcommittee (ES) was to oversee and advise the development and implementation of a

framework and design for evaluating physician assistants working in Ontario clinical settings. The ES developed a Project Logic Model that was used to define a set of dimensions of evaluation:

- Access
- Efficiency
- Patient/ Client Satisfaction
- Provider Satisfaction
- Integration/ Continuity

- Effectiveness
- Quality/ Safety
- Sustainability
- Critical Success Factors/ Lessons Learned

The evaluation focussed on identifying the impact of introducing PAs to the health care system of Ontario. It did not assess whether expansion of the supply of other providers (e.g. nurse practitioners) or introduction of other new health care providers might have generated similar impacts. It also did not specifically assess PAs in relation to other providers.

Sources of Evaluation Data

Qualitative data from focus groups, interviews and surveys were used to evaluate the impact of the PA role from the point of view of patient/client/families as well as the care providers (the supervising physician, the health care team and the clinical setting administration) and the PAs themselves. Reports from physicians and physician assistants were used to determine supervision time in the project. Other data analyzed were pre-existing, routinely collected administrative data (e.g. Canadian Institute for Health Information [CIHI] Discharge Analysis Database [DAD] or National Ambulatory Care Reporting System [NACRS] data, Ontario Health Insurance Plan [OHIP], Purkinje data) to measure impacts of the PA role (e.g. reduction in inpatient length of stay, services provided, and ED wait times). Administrative data were only used where it was available with no significant additional data collection burden.

Participants Generally Believed the Impact of the PAs was Positive

The introduction of the PAs in the demonstration sites was generally perceived by the care providers to have had a positive impact on the evaluation dimensions and on the potential impacts of PA introduction identified in the evaluation framework.

Limited Quantitative Data Available

Much of the evaluation data in this report is qualitative, derived from interviews, surveys, and focus groups. As such, this data reflects the perceptions of the respondents. There were limited sources of concrete, quantitative measures of the impacts of the PAs in the demonstration sites for some of the evaluation dimensions.

Quantitative Results

Available quantitative data associated with the introduction of PAs showed:

- Improvements in patient satisfaction

- Reduced wait times for ED patients

- Increased monthly caseloads for the CHC and PEPA demonstration sites

- Increased referral of hospital inpatients to home care

- Reduced alternate level of care days for hospitalized LTC residents

- Increased average daily patients, services, and fee-for-service billings for hospital-based supervising physicians

- Increased acute care hospital length of stay, and

- Increased referral to acute care for LTC residents

With respect to access to care, perceptions were consistent with quantitative results. However, for two areas where the presence of PAs might be expected to be associated with reduced cost (e.g. reduced acute care hospital length of stay, and reduced referral to acute care for LTC residents) the quantitative results failed to show the expected results.

Cannot Assume Introduction of PAs Caused the Changes

The quantitative analysis results only show associations between impacts and the PA presence. The Ontario health care system is dynamic, and there have been many changes (e.g. funding, policies, standards) between 2007/08 and 2009/10 which could have affected activity levels and productivity in the health care organizations. It is not possible to conclude that the introduction of a PA caused the observed changes in activity and outcomes.

Most Positive Impacts Reported by Supervising Physicians

The most positive response from the care providers to the introduction of the PAs in their teams was from the SPs, who widely reported a positive impact on their own efficiency and the quality of their worklife. In addition, analysis of data from the PEPA project suggests that the PA employment costs could be funded from fee-for-service earnings if the physician was able to bill OHIP for a percentage of the fee for the service rendered by the PA.

93% of SPs Hoped to Keep Working with PA

Most (90%) of SPs reported that they would recommend working with a PA to their physician colleagues and 93% reported the desire to keep working with a PA after the conclusion of the demonstration project.

Recruitment Stream only a Factor in Desire to Keep Working as a PA

In looking at sustainability and quality of care, it is important to note that there were no statistically significant differences in SP perception of PA impacts by PA recruitment stream. The only statistically significant difference between the two PA groups was their desire to keep working as a PA in the future. Only 41% of IMG stream PAs indicated that they hoped to keep working as a PA, compared to 95% of PAs formally educated as PAs.

Evaluation Results Have Been Used to Support Development Policy Framework for the Future Role of PAs in Ontario

The evaluation results in this report and the detailed analysis results presented in the Technical Appendices have been presented to the project steering committee throughout the project as they became available, and have been used to inform the development of the policy framework and plans for the future of the PA role in Ontario.

2.0 Background

2.1 HealthForceOntario and Physician Assistant Demonstration Projects

HealthForceOntario and Introduction of Physician Assistant Role

In May of 2006, the Ministry of Health and Long Term Care announced the province's health human resources strategy, "HealthForceOntario", which included the creation of four new health care provider roles: surgical first assist, nurse endoscopist, clinical specialist-radiation therapy and physician assistant (PA).

MOHLTC and OMA Partnership for PA Demonstration Projects

The Ministry, in partnership with the Ontario Medical Association, established a series of projects to demonstrate the potential value of the physician assistant role within the Ontario health system. The demonstration projects were designed to implement and evaluate the role of physician assistant in a variety of clinical settings. Parallel projects were established to demonstrate the PA role in hospital inpatient settings and Emergency Departments, primary care in CHCs, long-term care facilities and endocrinology diabetes care clinics.

OHA Led Hospital PA Demonstrations

The Ontario Hospital Association (OHA) led the organization and oversight of the PA demonstration in hospital inpatient and ED settings. Twenty one hospitals in Ontario employed PA practitioners in general internal medicine, hospitalist, surgery, emergency and orthopaedics, complex continuing care and ED roles.

AOHC Led Primary Care Demonstrations in CHCs

The Association of Ontario Health Centres (AOHC) led the organization and oversight of the PA demonstrations in primary care settings. Five Community Health Centres across Ontario employed PA practitioners.

OMA Led Physician-Employed PA Demonstrations

The Ontario Medical Association (OMA) led the organization and oversight of two demonstration projects, where PAs were directly employed by physicians. One demonstration was in community-based endocrinology diabetes group practices, where the PA worked under the authority of a supervising endocrinologist, with other providers. The other project was in long-term care facilities, where the PA provided direct patient care under the supervision of a primary care physician.

2.2 Physician Assistant – Role and Scope of Responsibilities

Potential PA Duties

Physician Assistants are skilled health professionals that have been trained to support physicians in a broad range of health care settings. In general, PAs provide medical services under the direction and supervision of a registered (licensed) physician. Duties may include:

- Taking Histories
- Conducting physical examinations
- Counselling on preventative health care
- Performing selected diagnostic and therapeutic interventions delegated by a physician

PAs Successfully Introduced in Other Jurisdictions

Although PAs are new to the Ontario health care system, it is a role that has been very successful in other jurisdictions. For a number of years PAs have been key members of the Canadian Forces health care team. In Manitoba, the PA (or "Clinical Assistant" as it is called) has been part of that health care system and is a regulated health profession. PAs have been extensively employed in the United States health care system for decades, and are currently working in many other international jurisdictions. Research indicates that adding PAs to the health care team in primary, secondary or tertiary care settings is a safe and effective way to reduce wait times and improve patient/client satisfaction.

PA Recruitment Streams for Demonstration Projects

There were two recruitment streams in the Ontario demonstration projects. This included "formally educated PAs" who completed formal PA training in the Canadian Forces or in the United States in one stream, and selected International Medical Graduates (IMGs) in another. IMG stream PA candidates were assessed by CEHPEA (The Centre for Evaluation of Health Professionals Educated Abroad) as possessing the competencies necessary to work as PAs. IMG stream PAs that were selected by a demonstration site were oriented to Ontario's health care system through sessions in classroom and clinical settings and were assessed regarding their ability to work as PAs.

PAs under Supervision of Registered Physician

The services performed by PAs in the demonstration projects were under the supervision of a registered physician. All tasks were assigned by the physician to the PA through direct delegation or medical directives, as per the College of Physicians and Surgeons of Ontario's (CPSO) policy on the delegation of controlled acts.

2.3 Physician Assistant Implementation Steering Committee

Implementation Steering Committee (PAISC)

The physician assistant implementation was led by the Ontario Ministry of Health and Long-Term Care in partnership with the Ontario Medical Association. An Implementation Steering Committee (PAISC), composed of multiple stakeholders and experts in this field, has been established to guide the initiative. Exhibit 1 shows the organization and reporting streams for the various committees.

Exhibit 1:   Project Organization
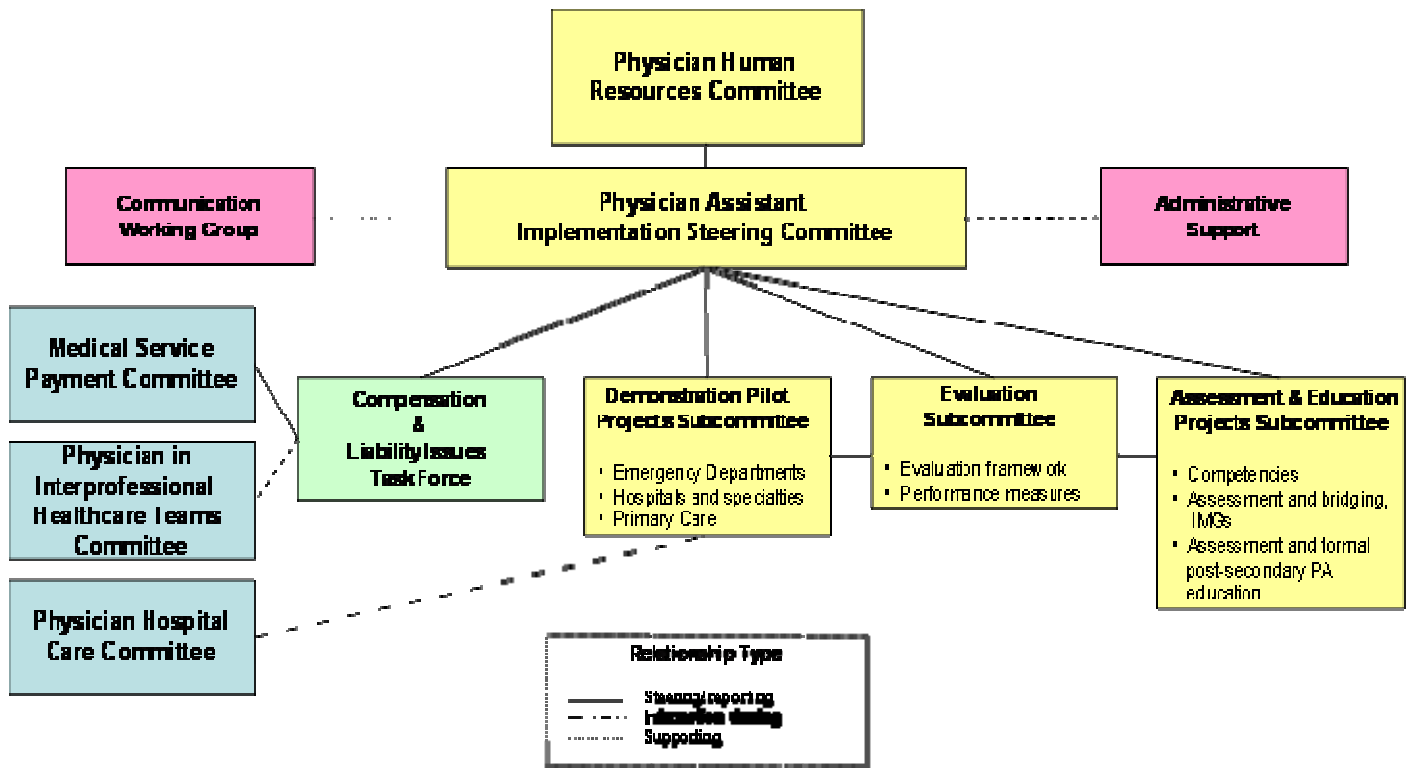
PAISC Role   The role of the PAISC was to assure a balanced approach to the introduction and evaluation of this new profession in Ontario. Issues related to competency requirements, liability, compensation and evaluation methodologies and the oversight of the various demonstration projects and sites were addressed by the work of this committee, its subcommittees and working groups. Hay Group Health Care Consulting provided project management and secretariat services in support of the Implementation Steering Committee and its subcommittees.

2.4   Evaluation Subcommittee (ES)

ES Mandate   The role of the physician assistant Evaluation Subcommittee (ES) was to oversee and advise the development and implementation of a framework and design for evaluating the use of Physician Assistants in clinical settings in Ontario.

ES Responsibilities   The ES provided advice to, and oversight of, the evaluation contractor's work related to:

- Development of an Evaluation Framework for use in demonstration projects
- Identification of metrics and related data sources to support the evaluation framework

- Data collection within the demonstration projects

- Data analysis

- Interpretation of analysis related evaluating the use of PAs in clinical settings in Ontario

- Report on the findings of the evaluations of the use of PAs in clinical settings in Ontario

The Ministry engaged Hay Group Health Care Consulting to develop the methodology and conduct the evaluation of the demonstration projects.

Membership   The members of the ES included representatives from the Ontario MOHLTC, the OMA, the OHA, the AOHC, the CPSO, Hay Group Health Care Consulting, Med Emerg International, and academics with expertise in health care evaluation design.

2.5   Project Objectives

PAISC Objective   The PAISC confirmed that the primary objective of the PA demonstration projects is to demonstrate the PA role in a variety of clinical settings within the Ontario health care system.

Additional objectives of the initiative as agreed upon by the Physician Assistant Implementation Steering Committee (PAISC) are to:

- increase the number of health professionals working in the province to deliver quality patient care

- maximize physician capacity to increase patient/client access to care

- improve physician quality of worklife

- increase physician productivity

- decrease wait times

- ensure that the people of Ontario have better access to health care services

- ensure patient/client safety and satisfaction with care.

Provincial policy regarding the future use of PAs within Ontario will be informed by the findings of the evaluation   An important element of the demonstration of the PA role is an evaluation of the impact of the role on the clinical settings where it is introduced. Provincial policy regarding the breadth and depth of the future use of PAs within the health system in Ontario will be informed by the findings of the evaluation of the demonstration of the PA role in different clinical settings.

3.0 Evaluation Design

Evaluation focus is on Outcomes/Impacts

The PA demonstration projects employed individuals in the PA role for a 24 month period. While the evaluation focus was primarily on outcomes/impacts of implementation of PAs in Ontario health care settings (i.e. summative evaluation), there was also a process-based evaluation, whereby interim results and feedback were used to guide the implementation process.

Pre-Test, Post-Test Quasi-Experimental Model

Because demonstration sites were not randomly selected, a pre-test, post-test, quasi-experimental model was used. For some impacts, valid comparable data from similar health care sites not participating in the demonstration projects, or for patients/clients of the demonstration sites who did not have contact with a PA, was available. For other impacts, (particularly those that would require primary qualitative data collection), only time series data were available from the demonstration sites. The time series data from the demonstration sites supported the process-based evaluation.

The evaluation questions were developed with input from the PAISC, based on the potential impacts and outcomes of the project, described below in the project logic model.

3.1 Project Logic Model

A program logic model is defined as a picture of how an organization or program does its work

A program logic model is defined as a picture of how an organization or program does its work – the theory and assumptions underlying the program. A program logic model links outcomes (both short- and long-term) with program activities/processes and the theoretical assumptions/principles of the program. A logic model (and its development) can facilitate thinking, planning, and communications about program objectives and actual accomplishments.[1]

A logic model is a systematic and visual way to present and share an understanding of the relationships among the resources available to operate a program, the activities that are planned, and the changes or results hoped to be achieved.

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[1] W.K. Kellogg Foundation, "Logic Model Development Guide", Updated January 2004, W.K. Kellogg Foundation, One East Michigan Avenue East, Battle Creek, Michigan 49017-4058, accessed online at http://www.wkkf.org/Pubs/ Tools/ Evaluation/Pub3669.pdf

The Project Logic Model supports determination and articulation of the objectives of the project, and the associated project evaluation requirements

While normally a logic model would be developed for a program as a basic tool to support program planning and establishment of a common understanding by all stakeholders of the key elements of the program, the ES developed a logic model for the PA implementation to support determination and articulation of the objectives of the project, and the associated project evaluation requirements.

The Project Logic Model for the PA implementation, as reviewed and approved by the PAISC, is shown in Exhibit 2.

Exhibit 2: Project Logic Model

Inputs	Activities	Outputs	Outcomes	Impacts
Requirement for new health care provider roles	Develop required PA competencies	PA competencies developed	PA education program established and provided by a qualified education facility	Ontario trained PAs available to work in health system
Public/Patient/Client perception of role and need for PAs	Develop curriculum	Curriculum developed		Availability of PAs in Ontario
Stakeholders (MOH, OHA, OMA, ONA, NPAO, CPSO, CAPA, COFM, CAHO, Academic Health Science Centres, etc.)	Select and fund educational providers	Education program capacity developed		Opportunities for IMGs in Ontario
	Recruitment of PAs certified in other jurisdictions			Impact of PAs on learners
Physicians	Recruitment of IMGs and integration into PA role			Throughput
Health care team members	Recruit and select health facilities for PA implementation	PAs in Emergency Department	PAs functioning in Ontario health system	Efficiency
HealthForceOntario	Develop scope of practice and define PA role	PAs in inpatient hospital settings		Patient/Client satisfaction
Canadian Forces PAs, IMGs, PAs from USA, etc.	Ensure liability protection	PAs in CHCs		Patient/Client safety
Steering committee to oversee the implementation project	Establish compensation and funding models	PAs directly employed by physicians		Appropriate standard of care
Sufficient funding to support the implementation project	Develop process to integrate PAs into health care settings (orientation, medical directives, staff education)		Acceptance of the PA role within Ontario health system	Physician satisfaction and acceptance
				Team satisfaction
Regulatory context	Develop communication and marketing strategies	Public and provider awareness of PA role		Sustainability

Note: PA refers to practitioners functioning in the PA role in the Ontario demonstration projects

3.2 Evaluation Dimensions and Questions

The impacts in the Project Logic Model were used to define dimensions of evaluation

The impacts described in the Project Logic Model were used to define a set of dimensions of evaluation. A definition for each dimension was developed and a set of questions were identified by Hay Group Health Care Consulting.

The definitions for each dimension were informed by a review of the CIHI definitions of health indicators (as of Feb 2006) and of the Ontario Health Quality Council's definitions of characteristics of a high-performing health system (from the 2007 yearly report).

The Evaluation Questions intended to be Applicable to all Clinical Settings

The evaluation questions associated with each dimension are high-level questions, applicable in all clinical settings. The evaluation dimensions, definitions and questions are shown in Exhibit 3. For each proposed dimension, the over-arching evaluation question(s) is shown bolded and in italics, with subsidiary evaluation questions listed below.

It should be noted that the evaluation focussed on identifying the impact of introducing PAs to the health care system of Ontario. It did not assess whether expansion of the supply of other providers (e.g. nurse practitioners) or introduction of other new health care providers might have generated similar impacts. It also did not specifically assess PAs in relation to other providers.

Exhibit 3:   Exhibit Evaluation Dimensions, Definitions and Questions

Evaluation Dimensions	Definition	Evaluation Questions
OVERALL		***Is the implementation of the PA role in the best interest of Ontarians?***
Access	Ability for patients/clients to get the right care at the right time in the right setting by the right health care provider.	***What is the impact of the PA role on access to appropriate care?***
		What is the impact of the PA role on throughput?
		What is the impact of the PA role on wait times?
		Are patients/clients receiving care from the right provider?
		Has the PA facilitated expansion of availability of service to a greater range of patients/clients?
Efficiency	Achieving desired results with the most cost-effective use of resources.	***What is the impact of the PA role on efficiency?***
		What is the impact of PAs on productivity? (resources per unit output)
		What is the impact of PAs on service time?
		What is the impact of PAs on physician efficiency?
Patient/ Client Satisfaction	Satisfaction of patients/clients with quality of care, services offered, and timeliness of services.	***Are patients/clients satisfied with PAs?***
		Are patients/clients satisfied with quality of care?
		Are patients/clients satisfied with the individual provider?
		Are patients/clients satisfied with the timeliness of care?
Provider Satisfaction	Satisfaction of health care providers with workload, team	***How satisfied is the health care team with the PA role?***
		How satisfied is the supervising physician with the PA role?

Evaluation Dimensions	Definition	Evaluation Questions
	performance, health care delivery model, and level of support from the health system.	What is the impact of the PAs on the supervising physician's ability to supervise learners?
		How satisfied is the PA?
Integration/ Continuity	Establishment of a health care delivery model that is organized and connected to provide uninterrupted, coordinated and high-quality care/service across providers over time.	*What is the impact of the PA role on integration/continuity in the health care system?*
		What is the impact of the PA role on the movement of patients/clients along the continuum of health care services?
		What is the impact of the PA role on communication across the continuum of health care services?
		What is the impact of the PA role on access to diagnostic & therapeutic services?
Effectiveness	Ability to provide care/service, intervention or action that achieves desired results.	*What is the impact of the PA role on the effectiveness of the health care system?*
		What is the impact of the PA role on patient/client outcomes?
		Does the PA follow accepted standards of care?
		Has the PA been utilized to their maximum potential, in terms of breadth of practice?
		What is the impact of the PA role on team effectiveness?
Quality/ Safety	Ability for clients/patients/staff to not be harmed by an accident or mistakes when receiving or providing care.	*What is the impact of the PA role on safety?*
		What is the impact of the PA role on patient/client safety?
		What is the impact of the PA role on health care provider safety?
Sustainability	Ability to maintain a health system that has enough human and capital resources to look after people's health needs.	*Does the PA role contribute to the sustainability of the Ontario health care system?*
		What is the impact of PAs on physician recruitment and retention?
		What is the impact of PAs on recruitment and retention of other health care team members?
		What is the impact of PAs on revenue to the health care provider?
		Is the supply of PAs sufficient to meet demand in Ontario?
		What is the impact of PAs on appropriate employment of IMGs?
		What is the impact of PAs on the education of learners?
Critical Success Factors/ Lessons Learned	Considerations to enhance the implementation of PAs in the Ontario health care system going forward.	*What are the critical success factors?*
		What are the lessons learned?

3.3 Evaluation Approach and Data Collection

The Evaluation Subcommittee focused on qualitative data

The Evaluation Subcommittee focused on the analysis of qualitative data collected from focus groups, interviews and surveys. The qualitative data has been used to evaluate the impact of the PA role from the point of view of the supervising physician, the health care team, the clinical setting administration and the patient/client.

Some Reliance on Administrative Data

Other data analyzed was pre-existing, routinely collected administrative data (e.g. CIHI DAD or NACRS data, OHIP, Purkinje data) to measure impacts of the PA role (e.g. reduction in inpatient length of stay, services provided, and ED wait times). Administrative data were only used where it was available with no significant additional data collection burden.

Data Collection Details Are Provided In Appendices

Descriptions of the data collection instruments and sources that were used for evaluation in each of the clinical settings are provided in **Technical Appendix A**.

4.0 Demonstration Projects

4.1 Hospital Demonstration

Twenty nine hospitals were approved as part of the demonstration project, PAs were hired at 24 hospitals, and 21 hospitals completed their original 2 year term in the PA demonstration project. Forty seven of the 58 PAs originally hired completed their original 2 year contract.

The following 21 hospitals completed the 2-year PA Demonstration Project:

- Bridgepoint Hospital
- Brockville General Hospital
- Cambridge Memorial Hospital
- Credit Valley Hospital
- Guelph General Hospital
- Hawkesbury General Hospital
- Hotel Dieu Grace Hospital (Windsor)
- Kirkland and District Hospital
- London Health Sciences Centre
- Markham Stoufville Hospital
- Pembrooke Regional Hospital
- Quinte Health Care
- Royal Victoria Hospital
- Sault Area Hospital
- St. Francis Memorial Hospital
- Strathroy Middlesex General
- The Ottawa Hospital
- Thunder Bay Regional Hospital
- Timmins and District Hospital
- Toronto East General Hospital
- University Health Network

4.2 Community Health Centre (CHC) Demonstration

Seven CHCs were approved as part of the demonstration project with all 7 CHCs successfully recruiting PAs. 4 CHCs completed their original 2 year term in the PA demonstration project. 4 of the 8 PAs hired completed their original 2 year contract. For most of the project there were 5 Community Health Centres participating in the implementation with a total of 5 physician assistants.

The 5 CHCs were:

- Hamilton Urban Core

- North Hamilton CHC
- Somerset West CHC (Ottawa)
- Anishnawbe Health Toronto
- Centre de santé du Temiskaming

4.3 Physician-Employed PA (PEPA) Demonstration

Two Diabetes centres and 3 Long-Term Care (LTC) homes were approved as part of the Demonstration project with all 5 PEPA sites completing their original 2 year contract. All 6 of the PAs hired completed their original 2 year contract.

The 5 PEPA sites were:

- Diabetes Care Windsor
- LMC Endocrinology (Diabetes Care Markham)
- Macassa Lodge LTC Home (Hamilton)
- Grace Villa LTC Home (Hamilton)
- Trillium Centre (Specialty Care) LTC home (Kingston)

5.0 Report Organization

Analyses Results Structured Around the Nine Evaluation Dimensions

The discussion of evaluation results presented in this report is structured to assess the PA Demonstration project within the 9 evaluation dimensions presented earlier, by chapter:

7. Access

8. Efficiency

9. Patient/Client Satisfaction

10. Provider Satisfaction

11. Integration/Continuity

12. Effectiveness

13. Quality/Safety

14. Sustainability

15. Critical Success Factors/Lessons Learned

Evaluation Dimensions not Mutually Exclusive

While the evaluation results are presented separately for each of the dimensions above, they are not necessarily mutually exclusive. As such, some of the specific analysis results are presented as evidence of the impact of PAs on more than one dimension.

Technical Appendices Provide Detailed Results of Analyses of Individual Evaluation Data Collection Streams

The main body of the report briefly summarizes the evaluation findings relevant to each of the 9 evaluation dimensions, but the Technical Appendices provide more detailed results of the analyses of the data from the individual data collection streams. **Technical Appendix A** lists all of the data collection approaches used for each demonstration sector. The remaining Technical Appendices are organized by data collection stream:

- **Technical Appendix B** – Detailed Findings From Physician Assistant Interviews

- **Technical Appendix C** – Detailed Findings From Supervising Physician Interviews

- **Technical Appendix D** – Findings From Administrative Interviews

- **Technical Appendix E** – Themes From SP And PA Open-Ended Questions

- **Technical Appendix F** – Team Survey And Focus Group Feedback

- **Technical Appendix G** – Findings From Patient/Client Satisfaction Surveys
- **Technical Appendix H** - Hospital CIHI Administrative Data
- **Technical Appendix I** - CHC Purkinje Administrative Data
- **Technical Appendix J** – PEPA PA Encounter Reports
- **Technical Appendix K** - Physician Supervision Time Analysis

Chapter 6 Highlights Limitations of Evaluation Data and Analyses

Chapter 6, "Evaluation Limitations" highlights some of the overarching considerations and limitations of the evaluation data collection and cautions against use of the evaluation results as definitive evidence of the impacts of PAs on the health system in Ontario.

Analysis Results Used Throughout Project to Inform Implementation and Development of Policy Framework

The detailed analysis results presented in the Technical Appendices have been presented to the project steering committee throughout the project as they became available, and have been used to inform the development of the policy framework and plans for the future of the PA role in Ontario.

6.0 Evaluation Limitations

The project evaluation framework encompasses a broad range of potential impacts of the introduction of PAs to the Ontario health system.   There are limitations to the scope and rigour of the evaluation process, imposed by resource, timing, and measurement constraints.   These limitations prevent drawing definitive conclusions about the impact of PAs, but the Evaluation Subcommittee believes that the evaluation results can be used with confidence to inform the development of the policy framework for further implementation of the PA role in Ontario.

6.1 Evaluation Limitations

The primary limitations of this evaluation were:

Implementation Design Predated Development of the Evaluation Framework and Data Collection Approaches

Important decisions about the design of the PA implementation were made prior to the development of the evaluation framework. As a result, it was not possible for the Evaluation Subcommittee to influence decisions such as numbers of PAs, distribution of delivery sites by sector and/or geography, or in some cases to establish baseline measures prior to the PA employment. The small numbers of PAs in some sectors or clinical programs hindered the ability of the evaluation to find statistically significant differences in impact across geographies, sectors, and programs.   In this report where differences in impacts are reported, unless explicitly stated otherwise, the differences are not statistically significant due to the small numbers of PAs and sites.

> *Throughout this report, where differences in reported impacts between subgroups are shown, the differences are not statistically significant unless specifically stated as such.*

Participants Were Not Fully Aware of Evaluation Data Collection Expectations When They Agreed to Participate

Participating organizations and supervising physicians were recruited prior to finalization of data collection and evaluation protocols.   While supervising physicians agreed to support evaluation requirements, this could not be informed consent, since their responsibilities to provide evaluation data had not yet been defined when they signed their participation agreements. When the proposed evaluation data collection responsibilities were later outlined, some SPs declined to participate fully because they felt these responsibilities were too onerous and beyond what they had expected.

Reliance on Existing Administrative Data Systems to Reduce Data Collection Burden Sometime Limited Specificity and Sensitivity of Measurement of Impacts

A general principle of the evaluation approach was to, whenever possible, use existing, routine, administrative data systems rather than introduce new, project-specific data collection tools. The intent of this approach was to reduce the new data collection burden on the participants, but this sometimes meant relying on data that was less specific to PA activity and less sensitive to the impacts of the introduction of the PAs. Examples of where the use of existing administrative data simplified data collection but hindered the specificity of analysis included:

- Use of CIHI DAD data to assess impacts on acute care length of stay,
- Use of NRC/Picker patient satisfaction data to measure overall patient satisfaction rather than specific satisfaction with care provided by PAs
- Reliance on CHC Purkinje data to measure PA activities

Analyses Can Only Show Associations (i.e. Not Causality) Between PA Introduction and Observed Impacts

The quantitative analysis results only show associations between impacts and the PA presence. The Ontario health care system is dynamic, and there have been many changes (e.g. funding, policies, standards) between 2007/08 and 2009/10 which could have affected activity levels and productivity in the health care organizations. It is not possible to conclude that the introduction of a PA caused the observed changes in activity and outcomes.

Delays in Medical Directives Implementation Hindered Effectiveness of PAs

It was anticipated that it would take time for the full impact of the PA to be felt and would take time for the PA to become integrated in the patient care processes at their work site. Delays in development and implementation of medical directives were encountered in many sites. Frustration with the medical directive development and implementation process was the most frequently reported concern by both administrative interviewees and care team focus group participants. Even by the end of the demonstration project timeframe there were some sites that had not fully implemented medical directives, and so the measured impacts may not reflect what is ultimately possible.

Qualitative Data Reflects Respondent Perceptions of Impacts of PAs

The results presented from administrative, Supervising Physician, Physician Assistant, and health care team interviews, surveys, and focus groups are based on the perceptions of the respondents. A result showing, for example, that the presence of a PA is perceived to have been associated with a positive impact on patient safety, does not necessarily mean that there was a measurable positive impact on patient safety. The qualitative data reflects the actual responses of the participants in the interviews and focus groups. These results may or may not be consistent with findings from quantitative measures for the same evaluation dimension.

Distribution of PAs by Type of Site Limits Ability to Isolate Factors that May Influence Impacts

PAs in the demonstration projects were not equally distributed across the types of demonstration sites. For example, none of the PAs working in emergency departments or in the physician-employed sites were from the IMG stream; conversely, all but one PA (out of 13) working in a hospital surgical program were from the IMG stream. This makes it impossible to determine whether the impacts reported in a particular demonstration environment reflect the characteristics of the PA (i.e. their stream) or are inherent to that environment.

Evaluation Focused on Assessment of Impact of Introduction of PA Role, Not the PA Demonstration Project Itself

The evaluation focused on the assessment of the impact of the introduction of the PA role. It did not include evaluation of the demonstration project itself or an assessment of whether any benefits associated with introduction of PAs could be achieved in an alternate, more cost effective manner.

In spite of these limitations, we believe that the evaluation results have made an important contribution to the development of the Ontario policy framework for physician assistants.

7.0 Access

This dimension addresses the ability for patients/clients to get the right care at the right time in the right setting by the right health care provider.

A key challenge in today's health care environment and a particular focus of the Ontario government has been timely access to care. It was anticipated that the addition of PAs to each of the demonstration sites would reduce wait times for patients.

Supervising Physicians Reported Positive Impacts of PAs on Access

The feedback from supervising physicians through individual interviews demonstrated that they believed that the addition of a PA to the health care team usually had a positive impact on access:

- All of the SPs reported that having a PA had a positive impact on the time that a patient/client had for face to face time with a health care practitioner

- 71% of SPs reported that the PA had a positive impact on patient throughput, with higher results in the non-hospital settings than in the hospital settings

- All of the non-hospital SPs reported that the PA had a positive impact on wait times, and 72% of hospital SPs reported a positive impact (80% positive for SPs in the ED)

- 93% of SPs reported that the PA allowed the SP to spend more time with the more complex patients

Hospital and CHC Care Team Members Also Believed That There Were Positive Impacts on Access

Care team members also reported positive impacts:

- 78% of hospital team members reported that they believed the addition of a PA had increased the face to face time that patients had with a care provider

- CHC team members reported that the PAs had facilitated improved access and reduced wait times for patients

Patient Waits in the ED Were Shorter When a PA was Involved in Patient Care

The quantitative analysis of hospital ED visit data showed that the length of stay in the ED for patients was shorter when a PA was involved in care than when a PA was not present. This reduction in wait time was greatest for the time from the initial triage until the medical assessment of the patient.

Hospital Inpatient Lengths of Stay Were <u>Longer</u> When a PA was Involved in Care, But This May Reflect Bias Due to Assignment of Long-Stay Patients to PAs

While respondents believed that hospital inpatient lengths of stay for patients where PAs were involved in the care were shorter, the administrative data showed that the lengths of stay for PA patients were longer (for both the acute and the alternate level of care components of their stay). Some supervising physicians attributed this finding to the process of assignment of PAs to units and

patients, whereby the patients most likely to face discharge delays were assigned to PAs.

Increased Monthly Caseload and Appointments in CHCs When PA was Added

For CHCs, the analysis of the administrative (Purkinje) data showed increases in the monthly client caseload, appointments, medications, referrals, and procedures associated with the introduction of the PAs.

Increased Access to Medical Care Reported for LTC Residents

Administrators, residents, and families reported that they believe that there had been increased access to medical care with the introduction of the PAs to the LTC facilities.

Overall, feedback received from the interviews in all three demonstration project sectors was that the respondents believed there had been a positive impact of the introduction of the PA on access to care.

The results of the analysis of the ED administrative data showed decreased ED lengths of stay when a PA was involved in a patient's care. For the CHCs, the analysis of the administrative data showed increased caseload, appointments, referrals and procedures associated with the introduction of the PA.

There was no evidence, however, to show that hospital inpatient lengths of stay were reduced for patients where PAs were involved in the care.

8.0 Efficiency

This dimension addresses the ability of the system to achieve the desired results with the most cost-effective use of resources.

Supervising Physicians Reported Positive Impacts of PAs on Their Own Efficiency and Health System Efficiency

The perception of the supervising physicians in all sectors was that the introduction of the PAs had a positive impact on SP efficiency and health system efficiency:

- 71% of SPs reported a positive impact on throughput (two thirds of non-hospital SPs, and one quarter of hospital SPs said that the impact was <u>very</u> positive)

- 100% of SPs in the non-hospital sites, and 72% of the SPs in hospital sites, reported a positive impact on wait times

- 95% of SPs (and all SPs in non-hospital sites) said that the PA had increased their own efficiency in providing care

Administrative Respondents Also Reported Improved Efficiency, But Emphasized Benefits Most Often for Supervising Physicians

Most administrative interviewees said that they believed that the addition of PAs helped physicians better manage their workload, improved patient flow, and reduced wait times. However, the hospital administrative interviewees reported that there had been no reduction in other staff associated with the introduction of the PAs (i.e. the PAs were an "add-on" that mostly impacted physician efficiency, and were not a substitute for existing employees).

Majority of Hospital Team Reported Positive Impacts on Waits & Throughput

The majority of hospital team members reported that they believed that the introduction of the PAs had a positive impact on wait times (54%) and on throughput (55%).

No Evidence of Reduced LOS for Hospital Inpatients, But Reduced LOS for ED Patients

As reported previously, hospital lengths of stay, for both medical and surgical patients were longer for patients with PAs involved in their care, but wait times in the ED were shorter for patients treated by PAs.

While the qualitative data shows that most respondents believe that there was a positive impact of PAs on efficiency, and particularly the efficiency of SPs, there is limited corroborating quantitative evidence of improved efficiency in hospital care.

9.0 Patient/Client Satisfaction

This dimension explores satisfaction of patients/clients with quality of care, services offered and timeliness of services.

Reliance on Existing Patient Satisfaction Measurement Tools Not Necessarily Specific to PA Care

To minimize the burden that evaluation activities would place on organizations participating in the demonstration project, it was suggested that, to the greatest extent possible, the evaluation team base its analysis on existing data sources. As such, patient satisfaction results were based on results obtained through client/patient satisfaction surveys that were already in existence at hospitals and CHCs.

No Significant Changes in Satisfaction in ED, But Some Improvement in Satisfaction for Inpatient Units

In the hospital sector, there were no significant changes in patient satisfaction in the EDs where PAs were introduced. For the hospital inpatient units, there was a small but statistically significant improvement in the patient ratings of availability of doctors and the care received from doctors. Since hospitals participating in the demonstration project did not have the opportunity to modify the survey to include PA specific questions, overall improvements in patient satisfaction scores cannot be directly attributed to the introduction of the PA role.

Over 80% of CHC clients seen by a PA stated that they were either satisfied or very satisfied with the services

Overall, 82% of clients seen by a PA stated that they were either satisfied or very satisfied with the services that the PA provided; the percent of clients stating that they were either satisfied or very satisfied ranged from 70% to 88% across CHC sites.

Administrative Respondents Believe That PAs Had Positive Impact on Patient Satisfaction

The majority of administrative personnel interviewed stated that they believed that the PA had a positive impact on communication with families. This was highest in the hospital (76%) and LTC (75%) setting.

Very Positive Response from LTC Residents and Families

Patient satisfaction with PAs in the LTC homes was obtained during patient/family focus groups. Overwhelmingly positive responses were received from patients and families. Key areas of satisfaction included:

- PA accessibility

- Quality of care

- Continuity of care

- PA knowledge of resident (name, issues etc.)

- PA skills

- PA personality

Client satisfaction data were not available for the diabetes centres.

Overall, in the hospital sector, while interview respondents and survey findings in both the emergency department and inpatient units suggested an increase in patient satisfaction associated with the introduction of the PA, statistically significant improvement in patient satisfaction (as measured through the NRC Picker survey tool) was found only in the inpatient setting. For both the CHC and PEPA demonstration projects, provider perceptions of increases in client/resident satisfaction were validated through client satisfaction surveys and resident/family focus group feedback.

10.0 Provider Satisfaction

This dimension addresses the satisfaction of health care providers with workload, team performance, health care delivery model, and level of support from the health system.

All PAs Were Satisfied with their SP and 88% Would Recommend PA Role to Others

By the conclusion of the demonstration project, 100% of PAs reported that they were satisfied with their supervising physicians, and almost two thirds were very satisfied. The majority of PAs were also satisfied with their health care team, and 88% of PAs would recommend the PA role to others.

While PAs from IMG Stream Expressed Support for PA Role, Majority Seek to Pursue Career as Physician

In spite of the overall PA support for the PA role in Ontario, there was a statistically significant difference by recruitment stream regarding their interest in continuing to work as a PA in Ontario. While 95% of the PAs with formal education as a PA said they wanted to continue to work as PAs, only 41% of the IMG stream PAs shared this goal. Eighty-eight (88%) of the PAs who indicated they did not want to continue working as a PA said that they wanted to pursue a career as a physician.

No SPs were Dissatisfied with Their PAs

Most (88%) of SPs were satisfied with their PAs (59% very satisfied) and 93% of SPs indicated that they hoped to keep working with a PA in the future. None of the SPs reported dissatisfaction with their PAs.

SP Satisfaction Highest in Non Hospital Sectors

All of the SPs in the PEPA and CHC sites reported that they were very satisfied with their PA. SPs in small community hospitals and Surgery all reported satisfaction. Supervisors of formally trained PAs were more likely to report satisfaction with their PA (94%) than supervisors of IMGs stream PAs (83%), but this difference was not statistically significant.

Almost 90% of SPs Reported Positive Impact on the Quality of Their Worklife

Acting in the capacity of "physician extenders" PAs were anticipated to positively impact physician worklife. Almost 90% of all SPs reported that there was a positive impact of the introduction of the PA on the quality of their work life. All (100%) of SPs in the non-hospital demonstration sites reported a positive impact of the PA on the quality of their worklife.

High Level of Support from Administrative Respondents

Senior administrative representatives interviewed as part of the project evaluation expressed high levels of support for the ongoing use of the PA role in organizations. Eighty-five (85%) of hospital administrators and 100% of CHCs and LTC administrators stated that they would recommend that their organization continue to employ PAs at the conclusion of the demonstration project.

61% of Team Members Want To Keep Working with a PA

Results from team surveys show that 57% of team members were satisfied with their PA and 61% expressed a desire to continue to work with PAs.

Participants in 60% of Hospital Focus Groups Expressed Support for PA Role

Similar results were obtained during focus group sessions, with over 60% of hospital teams stating that the PA role was valuable and a definite advantage.

Both the PAs and most of the health care providers who worked with the PAs during the demonstration project reported high levels of satisfaction with the PA role.

11.0 Integration/Continuity

This dimension addresses the establishment of a health care delivery model that is organized and connected to provide uninterrupted, coordinated and high-quality care/services across providers over time.

Integration of PAs into Health Care Teams Increased over Course of the Project

One aspect of integration is the extent to which the PAs in the demonstration project were integrated into the health care teams with whom they worked. While the initial understanding of the PA role was low, the PAs reported that both their SP's and their team's understanding of the role increased as the project progressed. The PA perception of their team's understanding of the PA role was highest for PEPA sites and lowest for CHCs. By the time of the final interviews, 79% of PAs reported that they felt completely integrated with their health care team, and this complete integration was highest in the hospital settings.

Expectation that PAs Could Assist with Management of Transitions of Patients across Sectors

The second aspect of integration is coordination of care across sectors and smoothing transitions of patients. It was anticipated that the PAs would be able to invest more time than physicians in supporting transitions of patients across sectors (e.g. working with CCACs to facilitate access to post-discharge services for hospital inpatients).

Administrative Respondents Reported Improved Continuity of Care

Most administrative interviewees indicated that they believed that the addition of the PA had facilitated improved continuity of care in their facility.

Some Hospital Team Members Reported Positive Impacts on Communication & Patient Movement across Continuum

Many (41%) of hospital team members who completed the team survey said that they believed that the PA had improved communication across the continuum of care (3% reported a negative impact) and 37% of hospital team members said the PA had improved patient movement across the care continuum (5% said there was a negative impact).

Hospital Inpatients Treated by PA Had Higher Rates of Referral to Home Care

In the acute care setting, both medical and surgical inpatients that were treated by a PA were significantly more likely to be referred to home care upon discharge than patients with whom PAs were not involved. However, this did not have the expected impact of reducing hospital lengths of stay.

LTC Residents Had More ED Visits but Reduced ALC Days in Hospital

Long-Term Care home residents in the facilities where PAs worked had an increased rate of referral to the hospital ED, but no statistically significant change in hospital admission rates. There was a statistically significant decrease in hospital ALC days for LTC residents associated with the introduction of the PA in their LTC

facilities, and it may be that the presence of a PA facilitated transfer of patients from acute care back to their LTC homes.

Overall, the qualitative feedback showed that there was a perception among respondents in all three sectors that the presence of a PA could contribute to improved continuity of care. Hospital inpatients treated by a PA were more likely to be referred to home care upon discharge, but this did not result in shorter lengths of stay in hospital. Rates of referral of CHC patients to other services increased with the introduction of the PAs.

12.0 Effectiveness

This dimension addresses the ability to provide care/service, intervention or action that achieves desired results.

Positive Impact on Quality and Outcomes

Most (85%) of SPs reported that they believed that the introduction of the PA role had a positive impact on quality of care and patient outcomes.

SPs and Administrative Interviewees Reported Positive Impact on Medical and Other Trainees

The majority of SPs reported that they believed that the addition of a PA increased the time they had available to supervise learners such as medical students. The administrative interviewees in hospitals and CHCs also reported a positive impact on medical and other health professional trainees.

Concern that PA Focus on Less Complex Patients Would Limit Access of Other Learners to These Patients; No Evidence of Negative Impact

There was concern that if PAs assumed more responsibility for less complex patients (as was previously reported) it might reduce the exposure of other learners (particularly medical students) to these less complex patients. No interviewees reported that they believed that the introduction of a PA had reduced the exposure of other trainees to an appropriate range of patients. A majority of interviewees reported a positive impact on opportunity for collaboration and shared learning.

Medical Residents in Teaching Hospitals Supported Finding of Positive Impacts on Trainees

These findings were confirmed by feedback obtained directly from chief residents of teaching hospitals. The residents interviewed stated that PAs have been a valuable addition to the team and have allowed them to focus on more complex cases, while PAs focused on more routine cases or patient related administrative tasks such as order entry, discharge summaries etc. There was no concern that the focus on PAs on non-complex cases would prevent the residents from gaining exposure to these cases. Residents did not express any concerns regarding decrease in supervision availability.

More than 70% of SPs Reported that PAs Always Follow Accepted Standards of Care

SPs were asked whether they believed that their PAs follow accepted standards of care. Over 70% of SPs reported that their PAs always follow accepted standard of care. There was no difference in the results by PA stream. In follow up questioning of SPs, they noted that the PA role was an evolving role with new medical directives and best practice approaches being introduced on an ongoing basis. Learning therefore was an ongoing process, and as such, SPs stated it was not reasonable to expect that a PA could follow accepted standards of care 100% of the time.

Clinical Team Respondents Reported High Rate of PA Adherence with Practice Guidelines and Delegation Processes

From a team perspective, 93% of team participants in the focus groups stated that they believed that the PA followed clinical practice guidelines and appropriate processes for delegation at their hospital; a quarter of hospital focus groups also stated that their PA was aware of their own strengths and limitations. Most also commented that it took a long time to develop the medical directives, and that these delays negatively impacted the PA role.

Lack of Medical Directives Reported by PAs as Being Barrier to Full Effectiveness of Role

PAs working in the hospital (and particularly in teaching hospitals) and CHCs were most likely to report that there were tasks that they felt they were capable of performing, but that they had not been given the opportunity to do so. This frustration was most often attributed to the lack of medical directives.

13.0 Quality/Safety

This dimension addresses the ability for clients/patients/staff to not be harmed by an accident or mistakes when receiving or providing care.

The primary source of information about the impact of the PAs on patient care was the Supervising Physician interviews. PAs were not asked to provide their own perception of their impact on patient care. Many of the impacts reported elsewhere in this report can also be considered to be components of, and contributors to, quality of care.

Large Majority of SPs Reported Positive Impacts on Patient Safety and Quality of Patient Outcomes

Most (85%) of the SPs reported that they believed that the PA had a positive impact on patient safety (100% of SPs in the PEPA settings reported a positive impact). Eighty five percent of SPs reported a positive impact on the quality of patient outcomes (100% in PEPA sites, and the least positive impact on non-acute hospital patients). No SPs reported a negative impact on either patient safety or quality of patient outcomes.

Majority of Hospital Team Members Also Reported Positive Impacts on Safety and Quality

Overall, the findings from the survey of hospital clinical teams indicated a positive impact of the PA on patient safety and quality of patient outcomes. Fifty seven percent of the respondents to the hospital team survey reported a positive impact on patient safety (and only 1% reported a negative impact). Sixty four percent of the hospital team respondents reported a positive impact on the quality of patient outcomes (and only 1% negative).

It is important to note that there were no direct measurements of any changes in patient safety during the demonstration project. Most health care providers are developing patient safety measurement tools, but there was either no baseline (i.e. prior to PA arrival) measurement available, or no standardized patient safety data collection and reporting process that could be used.

14.0 Sustainability

This dimension explores the ability to maintain a health system that has enough human and capital resources to look after people's health needs.

High Level of Support of PAs for the Role, But IMG stream PAs Prefer to Seek Career as Physician

Most (88%) of the PAs said that they would advise others to seek a role as a PA in Ontario, but only 61% said that they themselves hoped to keep working as a PA. Formally trained PAs were most likely (95%) to agree that they hoped to keep working as a PA in Ontario, compared to only 41% of IMG stream PAs. Most (88%) of the PAs who said that they did not want to continue in the PA role said that they wanted to continue to pursue a career as a physician.

High Level of Support of SPs for the PA Role and Positive Impact on Their Practice

Ninety five percent of SPs said that they believed that the introduction of a PA had increased their efficiency and 90% reported that the PA had a positive impact on the quality of their (i.e. the SP) worklife. Ninety three percent of SPs said that they hoped to keep working with a PA in the future.

Perception that PAs will Support Physician Recruitment and Retention

The majority of SPs believed that having a PA had a positive impact on physician recruitment and retention (none thought there was a negative impact). In the hospital setting, the most positive impacts were reported for surgery and the ED. The majority of administrative interviewees in all sectors reported the potential for a positive impact on recruitment and retention of physicians.

Supervisory Stipend Appreciated by SPs, but could be Reduced

Forty three percent of SPs reported that without the annual $24,000 supervisory stipend, taking on the supervisory role would have resulted in reduced net income. All of the SPs (excluding those salaried physicians in the CHCs) reported that with the stipend their income had either been preserved or increased. SPs in the ED were most likely to report that the stipend could be reduced.

Forty six percent of supervising physicians that were interviewed stated that they did not require a stipend to continue working with a PA or required less than what they were currently receiving. Only 16% of physicians stated that they needed *more* than what was currently being provided

Widespread Administrative Support for PA Role, But Additional Ongoing Funding Required

All administrative respondents in the CHC and LTC sites, and 85% of hospital administrative respondents said that they would recommend that their organization continue to employ PAs. However, 94% of respondents (and all non-hospital respondents) indicated that ongoing funding of the PA role would be required.

Potential to Use OHIP Revenue to Fund Physician Employed PAs	Analysis of data from the PEPA project suggests that the PA employment costs could be funded from fee for service earnings if the physician was able to bill OHIP for a percentage of the fee for the service rendered by the PA.
SP Time Spent on Supervisory Role Decreased over Time, and SP FFS Activity and Income was Higher after PA was Introduced	SP time spent on both administrative activities related to the PA and indirect supervision decreased over the course of the project, while direct supervision time remained relatively constant. The OMA analysis of the impact of assuming the supervision role on fee-for-service income showed an increase in services, patients, and SP professional fees associated with the presence of a PA in the hospital settings. These increases were seen for both the ED and inpatient SPs.

No Evidence of Reduced Overall Health System Costs Due to Introduction of PAs

There was no evidence of reduced health care costs in hospitals due to the presence of the PAs:

- Hospital inpatients had a significantly longer length of stay when treated by a PA (which, based on information from SPs likely reflects differences in assignment of patients to PAs)

- LTC residents in facilities where PAs worked had significantly higher rates of transfer to a hospital ED than prior to the arrival of the PA, but had a non-significant reduction in hospital inpatient days)

Widespread Support for PA Role

Among administrators, health care team members, SPs, and PAs, there was widespread support for continued implementation of the PA role in Ontario.

In the PEPA settings, there was some evidence of the potential to fund the costs of employing a PA through increased fee-for-service billings if the activity of the PA could be billed via OHIP.

Could Not Prove Business Case based on Anticipated Reduced Health System Costs

However, the hypothesis that the added costs of employing PAs would be balanced by reduced overall health system costs (e.g. reduced hospital utilization) could not be proven from the findings of the evaluation.

New Funding Approaches May Allow Providers with PAs to Increase Funding Due to Increased Throughput and Reduced Wait Times

As Ontario considers changes in health care funding approaches, the potential broader application of the Health Based Allocation Methodology (HBAM) and the implementation of Patient-Based Payment (PbP) may introduce opportunities for health care organizations to increase their funding because of increased patient throughput and reduced wait times associated with their use of PAs.

15.0 Critical Success Factors/Lessons Learned

This dimension explores considerations to enhance the implementation of PAs in the Ontario health care system going forward.

15.1 Challenges

15.1.1 The PA Role and Medical Directives

Medical Directives are an Integral Tool for the PA to use all available skills in a Clinical Setting.

Under the Regulated Health Professions Act, 1991 (RHPA), delegation is a means of permitting those, including PAs, who do not have authority under a health profession Act to perform controlled acts. Without delegation, PAs are not able to perform controlled acts. Delegation may be given by a physician as an order – either as a direct order or as a medical directive - once a practitioner's competence to carry out the delegated procedure has been assured and the necessary approvals have been obtained. Medical directives permit PAs to implement care without direct supervision (observation) by the supervising physician. They identify a physician's advance order and pertain to any of the physician's patients who meet the criteria set out in the medical directive. The medical directive contains the delegation and provides the authority to carry out the treatments, interventions or procedures that are specified in the directive, providing that certain conditions and circumstances exist.

All Respondents Identified Challenges with Timely Development and Implementation of Medical Directives

The challenges associated with the timely development and implementation of medical directives emerged as a key theme across all demonstration sites and was a concern that was expressed by administrators, supervising physicians, physician assistants and team members.

From an administrative perspective, over 50% of respondents across all sites (80% in CHCs) stated that they were unaware of the work involved in developing medical directives and over 65% (80% in CHCs) stated that a framework for medical directives was a key change that they would like to see vis-à-vis the introduction of the PA role in Ontario. The negative impact of the delayed implementation of medical directives also emerged as a theme in team focus groups.

From a supervising physician perspective, some of the key challenges in developing medical directives were:

- Time involved to develop/approve medical directives (38%)

- Lack of standard templates (35%)

From a physician assistant perspective, some of the key challenges in developing medical directives were:

- Approval process including sign-off from various groups (49%)

- Time/process to develop medical directives (38%)

- Lack of template/samples from other hospitals (22%)

The feedback from the demonstration projects was used to inform the subsequent expansion of the PA role to other emergency departments and to Family Health Teams (FHTs). The participants in the ED expansion and FHT projects were able to use templates developed during the initial demonstration projects and early provider feedback has indicated that this has worked well.

Detailed information of the most frequently reported types of tasks that PAs were authorized to do through medical directives is reported in **Technical Appendix E.**

15.1.2   PA's Ability to Practice at Full Scope of Capabilities

PAs in IMG Stream Significantly More Likely to Report Limitations in Opportunity to Function at Full Capacity

PAs were asked whether there are tasks that they feel they are qualified to perform in the practice setting where they are employed, but that they have not been given an opportunity to do. Fifty eight percent of PAs reported that there were tasks that they had not been given the opportunity to perform; IMGs stream PAs were more likely to report this limitation (69%) compared to formally trained PAs (40%) and this difference was statistically significant. Lack of medical directives was the most frequently reported constraint on the PA's ability to perform a full range of tasks.

PAs working in teaching hospitals were the most likely (75%) to report limitations on the tasks they had been given an opportunity to perform and two thirds of the PAs in Surgery, CCC/Palliative, and CHCs reported that there were tasks they had not had an opportunity to perform. The inability to perform specific procedures (32%) and prescribe medications (29%) were cited as the most common tasks for PAs who stated that there were tasks that they were qualified to perform in their setting but had not been given the opportunity to do so. The top two reasons provided by PAs for being unable to perform these tasks were a lack of medical directives (50%) and the task being outside the supervising physician's scope of practice (18%).

Tasks most commonly performed by PAs as reported by both SPs and PAs are described in the thematic analysis in **Technical Appendix E.**

15.1.3 Unanticipated Workload of Implementation of Role

Participants in the administrative interviews were asked to describe some of the challenges encountered by their organization as a result of participating in the demonstration project. The most frequently reported challenge (100% of CHCs, 79% of hospital respondents and 75% of LTC respondents) was the amount of work involved in developing and implementing medical directives. All of the CHCs and 67% of hospital respondents also identified the time and effort required for the project as a major challenge.

LTC and Hospital respondents were more likely than CHC respondents to identify the effort to integrate the PA role and the lack of role clarity as major challenges.

15.2 Lessons Learned

15.2.1 Administrative Perspective

To support the ongoing development and rollout of the PA role in Ontario, Administrators were asked what they wish they had known prior to the arrival of their PA and to comment on any changes that they would like to see.

In response to the question "What do you know now that you wish you had known prior to the arrival of your PA?" administrators were most likely to report wanting a better understanding of the role, scope and skill set of the PA as well as the importance of team integration activities. Administrators in Hospitals and CHCs expressed that they would have most wanted to know about the work involved in developing medical directives.

The responses to the question about what changes administrators would like to see regarding the introduction of the PA role in Ontario varied greatly by sector:

- Hospital administrators reported clarity around PA role, training and competencies as most important,
- CHCs administrators expressed a need for a framework of medical directives, and
- LTC home administrators listed the following 3 items as most important:
  a) Clarity around PA role, training and competencies,
  b) Clarity between NP and PA role, and
  c) Opportunities to share experiences and lessons learned with other sites.

15.2.2 Supervising Physician Perspective

Supervising physicians were also asked to comment on what they wish they had known prior to the arrival of their PA, any changes they would like to see regarding the introduction of the PA role and any lessons learned that they would like to share with others who will be joining the project. The SPs reported that they wished they had had a better understanding of the workload and delays in implementation of medical directives and a better understanding of the PA role/scope.

The changes that SPs would like to see regarding the introduction of the PA role in Ontario:

- Need to have dedicated funding (40%)
- PA role should be regulated (30%)
- Need more PAs (25%)

Lessons learned by SPs that they would like to share with others who will be joining the project:

- Importance of knowing PA skills/matching to organization needs (18%)
- Need to clearly understand/define the PA role (18%)
- Need to have clear process for medical directives (15%)

15.2.3 Physician Assistant Perspective

As with SPs, Physician Assistants were also asked to comment on what they wish they had known prior to their arrival, any changes they would like to see regarding the introduction of the PA role and any lessons learned that they would like to share with others who may wish to work as a PA in Ontario.

The most frequently reported challenges from the PAs were:

- Lack of medical directives or time/process to develop medical directives (26%)
- Lack of job security/ clear vision of future direction of PA role (21%)

Changes that PAs would like to see regarding the introduction of the PA role in Ontario:

- PA role should be regulated (40%)
- Expand PA role to other specialities/increase number of positions (21%)
- Need to share medical directives/have medical directives in place (21%)

Lessons learned by PAs that they would like to share with others who may come to work as PAs:

- Be patient/don't get frustrated (29%)
- Communicate with others; educate staff and promote your role (23%)

15.2.4 Team Perspective

Sixty one percent of team members responding to the online team survey stated that they would like to continue working with a PA after the conclusion of the demonstration project. Similar feedback was obtained during team focus groups where over half of hospital care team focus group participants indicated that they would recommend that their organization, and others, employ a PA. The challenges most frequently reported from hospital care team focus group participants were:

- Difficulty in developing and implementing medical directives delayed effective use of PAs
- Lack of clarity around the PA role, and particularly the difference between the PA and NP role
- Lack of regulation of the PA role has been a barrier to gaining acceptance of the role among team members

This feedback was used to refine the processes to support the subsequent implementation of the PA role in the ED expansion and FHT sites.

16.0 Conclusions

Project Participants Generally Reported Positive Impacts on All Evaluation Dimensions

The introduction of the PAs in the demonstration sites was generally perceived by the supervising physicians, care team members, and administrative representatives to have had a positive impact on the evaluation dimensions and on the potential impacts of PA introduction identified in the evaluation framework.

Most Evaluation Data were Qualitative, Reporting Perceptions of Respondents

Much of the evaluation data were qualitative, derived from interviews, surveys, and focus groups. As such, this data reflects the perceptions of the respondents. There were limited sources of concrete, quantitative measures of the impacts of the PAs in the demonstration sites for some of the evaluation dimensions.

Statistically Significant Quantitative results

Available quantative data associated with the introduction of PAs showed:

- Improvements in patient satisfaction

- Reduced wait times for ED patients

- Increased monthly caseloads for the CHC and PEPA demonstration sites

- Increased referral of hospital inpatients to home care

- Reduced alternate level of care days for hospitalized LTC residents

- Increased average daily patients, services, and fee-for-service billings for hospital-based supervising physicians

- Increased acute care hospital length of stay, and

- Increased referral to acute care for LTC residents

With respect to access to care, perceptions were consistent with quantitative results. However, for two areas where the presence of PAs might be expected to be associated with reduced cost (e.g. reduced acute care hospital length of stay, and reduced referral to acute care for LTC residents) the quantitative results failed to show the expected results.

Observed Changes Associated with PA Introduction, but PA Introduction Cannot Be Said to Have Caused the Changes

The observed changes above can only show associations between impacts and the PA presence. The Ontario health care system is dynamic, and there have been many changes (e.g. funding, policies, standards) between 2007/08 and 2009/10 which could have affected activity levels and productivity in the health care organizations. It is not possible to conclude that the introduction of a PA caused the observed changes in activity and outcomes.

| Supervising Physicians Most Likely to Report Positive Impacts of Introduction of PAs | The most positive response from care providers to the introduction of PAs was from the supervising physicians. Ninety percent of SPs reported that they would recommend working with a PA to their physician colleagues and 93% reported the desire to keep working with a PA after the conclusion of the demonstration project. |

| *Recruitment Stream only a Factor in Desire to Keep Working as a PA* | In looking at sustainability and quality of care, it is important to note that there were no statistically significant differences in SP perception of PA impacts by PA recruitment stream. The only statistically significant difference between the two PA groups was their desire to keep working as a PA in the future. Only 41% of IMG stream PAs indicated that they hoped to keep working as a PA, compared to 95% of PAs formally educated as PAs. |

| *Evaluation Results Have Been Used to Support Development Policy Framework for the Future Role of PAs in Ontario* | The evaluation results in this report and the detailed analysis results presented in the Technical Appendices have been presented to the project steering committee throughout the project as they became available, and have been used to inform the development of the policy framework and plans for the future of the PA role in Ontario. |

List of Acronyms Used in Report

Acronym	Term	Additional Comments
ALC	Alternative Level of Care	When a patient is occupying a bed in a hospital and does not require the intensity of resources/services provided in this care setting (Acute, Complex Continuing Care, Mental Health or Rehabilitation), the patient must be designated Alternate Level of Care (ALC) at that time by the physician or her/his delegate. The ALC wait period starts at the time of designation and ends at the time of discharge/transfer to a discharge destination (or when the patient's needs or condition changes and the designation of ALC no longer applies).
AOHC	Association of Ontario Health Centres	The Association of Ontario's Health Centres (AOHC) represents over 120 community-governed primary health care organizations. Membership includes Ontario's Community Health Centres, Aboriginal Health Access Centres and Community Family Health Teams
CACS	Comprehensive Ambulatory Care Classification System	The Comprehensive Ambulatory Care Classification System (CACS) is a national grouping methodology developed by CIHI for ambulatory care patient data. CACS places client visits into groups that are clinically and resource homogenous. Variables that assign clients to groups are diagnosis or, intervention, emergency visit indicator, visit disposition, mode of visit, ambulatory care type and program area.. Anaesthetic, age and investigative technology are used in the factor overlay methodology to assist in the assignment of resources.
CCC	Complex Continuing Care	In Ontario, the term "complex continuing care" (CCC) is used interchangeably with "chronic care". Complex continuing care provides continuing, medically complex and specialized services to both young and old, sometimes over extended periods of time. CCC is provided in hospitals for people who have long-term illnesses or disabilities typically requiring skilled, technology-based care not available at home or in long-term care facilities
CCM	Comprehensive Care Model	The Comprehensive Care Model (CCM) is available to any family physician licensed to practice in Ontario who signs a CCM Agreement with the Ministry of Health and Long-Term Care, practices on a Fee for Service (FFS) basis and agrees to provide comprehensive care, as defined in the Comprehensive Care Agreement, to his/her enrolled patients.
CDM	Chronic Disease Management	Chronic disease management is a pro-active, population-based approach that addresses chronic diseases early in the disease cycle to prevent disease progression and reduce potential health complications. This approach reduces the subsequent need for acute interventions in the future and allows people to maintain their independence and remain healthy for as long as possible.
CEHPEA	Centre for the Evaluation of Health Professionals Educated Abroad	CEHPEA's goal is to facilitate entry to training or practice for internationally educated health professionals. They assess International Medical Graduates (IMGs) to ensure that they meet Canadian standards and provide programs to orient candidates to training and practice in Canada.
CHC	Community Health Centres	Non-profit, community-governed organizations that provide primary health care, health promotion and community development services, using interdisciplinary teams of health providers. These teams include physicians, nurse practitioners, dieticians, health promoters, counsellors and others who are paid by salary, rather than through a fee-for-service system

Acronym	Term	Additional Comments
CIHI	Canadian Institute of Health Information	Established in 1994, the Canadian Institute for Health Information (CIHI) is an independent, not-for-profit corporation that provides essential information on Canada's health system and the health of Canadians. CIHI is funded by federal, provincial and territorial governments, and guided by a board of directors made up of health leaders from across the country.
CMG	Case Mix Group	The Case Mix Groups methodology, developed by CIHI, aggregates acute care inpatients with similar clinical and resource utilization characteristics. Each inpatient discharge from an acute care hospital is assigned to one of the 559 CMGs. Assignment to a CMG is based primarily on the "most responsible diagnosis", and for surgical patients, the principle procedure.
CPSO	College of Physicians and Surgeons of Ontario	The College of Physicians and Surgeons of Ontario is the body that regulates the practice of medicine to protect and serve the public interest.
CTAS	Canadian Triage and Acuity Scores	CTAS scores are one way of assessing the severity of illness for ED patients is the Canadian Triage and Acuity Scale (CTAS). The CTAS is designed to ensure that the most urgent patients get seen first. The CTAS system groups patients into five categories with CTAS 1 referring to the most urgent cases where patients require resuscitation and includes conditions that are threats to life or imminent risk of deterioration, requiring immediate aggressive interventions (for example, cardiac arrest, major trauma, or shock states) and CTAS V refers to patients who require non-urgent care and includes conditions in which investigations or interventions could be delayed or referred to other areas of the hospital or health care system, such as sore throat, conditions related to chronic problems or psychiatric complaints with no suicidal ideation or attempts.
DAD	Discharge Abstract Database	The CIHI Discharge Abstract Database (DAD) contains data on facility discharges across Canada. The DAD contains demographic, administrative and clinical data for hospital discharges (inpatient acute, chronic and rehabilitation) and day surgery interventions.
DMC	Data Management Coordinators	Individuals employed in CHCs to manage data collection, organization, processing, and reporting, and who were responsible for extracting data from the Purkinje system to support the evaluation of the PA demonstration project.
ED	Emergency Department	Emergency departments (EDs) provide episodic care to patients with injuries or acute and treat exacerbations of chronic diseases. They are often used as an conditions, alternative to primary care when patients cannot see their family physician or cannot find one. For disadvantaged populations, EDs may also serve as a provider of last resort. EDs often serve as the portal of entry for patients admitted to hospital.
ES	Evaluation Subcommittee	The committee formed to oversee and advise the development and implementation of a framework and design for evaluating the use of Physician Assistants in clinical settings in Ontario.

Acronym	Term	Additional Comments
ELOS	Expected Length of Stay	The CIHI expected length of stay (ELOS) is calculated for "typical" patients taking into account the reason for hospitalization, age, comorbidity, and complications. Typical cases exclude deaths, transfers, voluntary sign-outs, and cases where the actual length of stay is greater than the long-stay "trim point" established by CIHI. The calculation uses the Case Mix Group (CMG) methodology and calibration for the given year (i.e., 1998/99 data uses CMG 1999 methodology).
FHG	Family Health Group	A Family Health Group (FHG) is a group of three of more physicians who sign a Family Health Group (FHG) agreement with the Ministry of Health and Long-Term Care, practice on a FFS basis and provide comprehensive care, as defined in the FHG agreement, to their enrolled patients.
FHN	Family Health Network	Groups of physicians work together in FHNs, along with a nurse-staffed, after-hours telephone advisory service, to provide primary care services to their patients 24 hours a day, seven days a week. The networks emphasize illness prevention and comprehensive care for patients while promoting a stronger doctor-patient relationship.
FHO	Family Health Organization	FHOs are groups of physicians who provide comprehensive primary health care services to their patients with a focus on illness prevention. Through Institutional Substitution Program Grants, allied health professionals are part of some of the teams as well. FHOs provide care during regular and extended office hours and patients have access to a nurse staffed Telephone Health Advisory Service.
FFS	Fee for Service	Compensation model for physicians, whereby payment is made for individual services, according to a predefined schedule of benefits.
HBAM	Health Based Allocation Model	HBAM is the model that will be used under population-based payment funding in Ontario to determine the expected costs of delivering high quality, evidence-based care. HBAM is a sophisticated tool that draws on years of clinical and demographic information collected across the province in order to model the expected demand and expenditures for health services. HBAM accounts for differences across communities in age, socioeconomic status and existing health conditions. The model develops a cost profile for every patient based on their clinical diagnosis, type of treatment received and the characteristics of the provider they received their care from.
HFO	HealthForceOntario	A collaborative initiative between the Ministry of Health and Long-Term Care (Ontario) and the Ministry of Training, Colleges and Universities. The goal of the HealthForceOntario strategy is ensure that Ontarians have access to the right number and mix of qualified health care providers by identifying and addressing Ontario's health human resource needs; engaging partners in education and health care to develop skilled, knowledgeable providers and create the health care delivery teams that will make the most of their abilities; introducing new and expanded provider roles to increase the number of providers working in health care and build on the skills of those already in the system
IMG	International Medical Graduates	Individuals who are qualified physicians in their country of origin and have completed the PAIP in order to practice as a PA in Ontario
IP	Inpatient	A patient who stays in a hospital while under treatment.

Acronym	Term	Additional Comments
LOS	Length of Stay	LOS refers to the number of actual days a patient spends in and acute care hospital
LTC	Long Term Care	Long-term care homes are designed for people who require the availability of 24-hour nursing care and supervision within a secure setting. In general, long-term care homes offer higher levels of personal care and support than those typically offered by either retirement homes or supportive housing
LWBS	Left Without Being Seen	Refers to patients who present to the Emergency Department (ED), are triaged, then leave without being seen (LWBS) by a physician.
MACS	Major Ambulatory Cluster	Groupings of ambulatory records, developed by CIHI. Ambulatory care records are first grouped to CACS, and then CACS groups are aggregated to MACS, based primarily on body systems (e.g., diseases of the circulatory system, diseases of the respiratory system).
MD	Medical Doctor	An authorized practitioner of medicine, who has graduated from a college of medicine or osteopathy and is licensed by the appropriate college.
MEI	Med-Emerg International	Prior to 2009, MedEmerg specialized in the coordination and delivery of health care services in Canada. MedEmerg services included health human resource management and consulting. MedEmerg provided consulting support to the initial ED pilot projects. Subsequently, MedEmerg merged with the AIM Health Group.
MOHLTC	Ministry of Health and Long Term Care	The MOHLTC provides overall direction and leadership for Ontario healthcare system, focusing on planning, and on guiding resources to bring value to the health system. The ministry is responsible for: 1) Establishing overall strategic direction and provincial priorities for the health system; 2) Developing legislation, regulations, standards, policies, and directives to support those strategic directions; 3) Monitoring and reporting on the performance of the health system and the health of Ontarians; 4) Planning for and establishing funding models and levels of funding for the health care system; 5) Ensuring that ministry and system strategic directions and expectations are fulfilled
NACRS	National Ambulatory Care Reporting System	NACRS is the National Ambulatory Care Reporting System at the Canadian Institute for Health Information (CIHI). Ambulatory care is one of the largest-volume patient activities in Canada. NACRS provides hospitals and community-based organizations with a standard data collection and reporting tool to capture data for ambulatory care visits, including day surgery, outpatient clinics and emergency departments.
NP	Nurse Practitioner	Nurse Practitioners are registered nurses with additional qualifications that allow them to provide a variety of health care services in primary health care, adult acute care or child acute care. The NP role incorporates advanced practice nursing and, with appropriate authorization, activities that fall within the traditional scope of medical practice.

Acronym	Term	Additional Comments
NRC Picker	National Research Corporation Picker	National Research Corporation (NRC), founded in 1981, is an organization dedicated to improving the quality of care provided in the healthcare industry. In 2001, NRC acquired the Picker Institute and its world-class family of surveys. NRC Picker provides measurement solutions tailored to hospitals, clinics or home health agencies and partners with you to create a patient-centered focus in the care you provide to your patients.
OHA	Ontario Hospital Association	Founded in 1924, the OHA uses advocacy, education and partnerships to build a strong, innovative and sustainable health care system for all Ontarians. Today, OHA represents approximately 151 public hospitals and assumes a leadership role, focused on patients, promoting an efficient and effective health system.
OHIP	Ontario Health Insurance Plans	The provincially funded health coverage plan available to all Ontario residents.
OMA	Ontario Medical Association	Founded in 1880 as a voluntary association of the province's physicians, the association represents the political, clinical and economic interests of the province's medical profession.
PA	Physician Assistant	The project included PAs from two streams: 1) those that had been formally trained as PAs through the Canadian Military or a US PA Degree Program and 2) IMGs who had completed the PA Integration Program. In the exhibits they are referred to as PAs and IMGs respectively
PAIP	Physician Assistant Integration Program	A comprehensive course with both didactic and clinical portions designed to assist in orienting an IMG into the Ontario Health Care System and ensuring that they have both the knowledge and skills to function in the role of a PA
PAISC	Physician Assistant Implementation Steering Committee	Steering Committee with representation from numerous stakeholders to guide the implementation of the demonstration projects
PbP	Patient Based Payment	Introduced by the MOHLTC in 2010, this strategy will shift Ontario health care funding to a system that creates the right financial environment for providers to deliver high quality, evidence-based care
PEM	Patient Enrolment Model	Under a PEM, patients commits to seek treatment from their enrolling physicians or group to which the family physician belongs unless they are traveling or find themselves in an emergency situation. In return, physicians agree to provide comprehensive care to their patients. The FHOs, FHGs, and FHNs in Ontario are examples of PEMs.
PEPA	Physician Employed PA	PAs who were employed directly by Physicians (i.e. those practising in LTC facilities and Diabetes Clinics).
RHPA	Registered Health Professionals Act	The RHPA sets out the general purpose of the regulatory model for health professionals in Ontario, establishes the relevant authority for the Minister of Health to administer the Act and establishes the agencies that the Ministry will use in the Act's administration. Amongst other things the Act sets out the list of which professions will be self governed under the Act and identifies the 14 controlled acts that are potentially harmful if performed by unqualified persons.

Acronym	Term	Additional Comments
RIL	Resource Intensity Level	The Resource Intensity Level (RIL) has been introduced by CIHI as part of the inpatient CMG grouping system, and is used to indicate the overall effect of factors such as comorbidity, specific flagged interventions, and out of hospital procedures, on the resource requirements for a particular case, over and above the impact of the CMG.
RN	Registered Nurse	A nurse who has graduated from a nursing program at a university or college and has passed a national licensing exam.
SP	Supervising Physician	The primary physician responsible for supervising the PA and accountable for their practice.
TES	Team Effectiveness Survey	TES tool was used for the evaluation of CHCs. The tool was introduced in a study published in April 2007 entitled "building Better Teams: A Toolkit for Strengthening Teamwork in the Community."

Technical Appendix A - Demonstration Projects Data Collection Approaches

A detailed description of the data collection instruments and sources, the frequency of their application, and a description of how the instruments were administered is provided in the following sections.

Hospital Demonstration Project

Team Development

MEI Conducted 3 team development sessions

Med-Emerg International (MEI) was contracted by the OHA to provide a team development program to the hospital demonstration sites. The team is defined as all health care practitioners that work with the PA. The program consists of three sessions with the teams over the first twelve months of the project. The purpose of the sessions was to review principles of team building, identify areas for improvement within the team, discuss the PA role and introduce a team charter as a tool to build a team action plan. Over the three sessions, progress of team development was assessed and barriers were identified to determine what is needed in the way of ongoing support to make the team successful.

Team Effectiveness Survey

A team effectiveness survey was administered twice throughout the project

In conjunction with the team development sessions MEI administered a web-based team effectiveness survey to assess the effectiveness of the team members working with the practitioners functioning in the PA role. The purpose of the survey was to assess key elements of teamwork and team development, including team purpose and vision, communication, roles, service delivery, and team support.

The team effectiveness survey was administered twice throughout the project. The survey was first administered at the beginning of the project to obtain baseline results of the team's effectiveness. Then, approximately nine months later the survey was completed again. A report describing the data collection process and results of the application of the team effectiveness survey in the hospital demonstration sites was prepared by MEI, and submitted to the Ontario Hospital Association.

Team Focus Groups and Team Surveys

Since MEI met with the team three times during the first year of the project, a team focus group was being conducted by the Evaluation Team during the same time period so as not to over-burden the team members. Rather, one year into the project, a web-based questionnaire was completed by team members. The questionnaire assessed the team's perspective on topics such as the impact of the PA on patients, the impact of the PA on the health care delivery system, and the PA's capabilities.

Close to the completion of the project, the team questionnaire was administered again and the Evaluation Team conducted team focus groups. Hospital team focus group and team survey results are presented in **Technical Appendix F**.

Patient Satisfaction Survey

In order to limit the burden on the hospitals, patient satisfaction was evaluated using the NRC+Picker survey already instituted in most participating acute care facilities. Patient satisfaction data for the 2 quarters prior to the arrival of the PA was compared with patient satisfaction data for the final 2 quarters of the demonstration project period.

Each hospital authorized NRC Picker to provide the Evaluation Team with direct access to the hospital's patient satisfaction results. Hospital patient satisfaction results are presented in **Technical Appendix G**.

Physician Assistant Interviews

The health care practitioners functioning in the physician assistant role participated in interviews three times throughout the project. A list of the interview questions was sent to the PAs ahead of time for preparation. The interviews were conducted by the Evaluation Team over the telephone.

The interviews assessed the PA's perspective on topics such as the PA role, working with supervising physicians, working with the team, lessons learned and critical success factors. Hospital physician assistant interview results are presented in **Technical Appendix B**.

Supervising Physician Interviews

Interviews were conducted with the supervising physicians three times throughout the project. A list of the interview questions was sent to the physicians ahead of time for preparation. The interviews were be conducted by the Evaluation Team over the telephone.

The interviews assessed the physician's perspective on topics such as the impact of the PA on patients, the impact of the PA on the health care delivery system, the impact of the PA on the supervising physician, the PA's capabilities, lessons learned and critical success factors. Hospital supervising physician interview results are presented in **Technical Appendix C**.

Administration Interviews

Administration representatives participated in telephone interviews

Two telephone interviews were conducted with representatives from the hospital's administration; one half-way through the project and one close to the end of the project. A list of the interview questions were sent to the participants ahead of time for preparation.

The interviews assessed the representative's perspective on topics such as the impact of the PA on patients, the impact of the PA on the health care delivery system, the PA's capabilities, lessons learned and critical success factors. Hospital administration interview results are presented in **Technical Appendix D**.

Administrative Data

The Evaluation Team acquired administrative data (i.e., pre-existing data, already collected for another purpose) that included:

- CIHI DAD: Inpatient records (de-identified) with PA involvement in care flagged.

- CIHI NACRS: Ambulatory procedure and ED records with PA involvement in care flagged.

- OHIP Data for Supervising Physicians: Fee-for-service claims and payment data.

- OHIP Activity Data for PAs: Activity data for PAs – a count of encounters with patients.

- OHA/HealthForceOntario Project Recruitment and Retention Data.

CIHI DAD and NACRS Data

Health Records must indicate on the discharge abstract when a PA is involved in the care of a patient

The Evaluation Team was responsible for the analysis of administrative data. The Health Records department in the hospital was responsible for indicating on the discharge abstracts (DAD and NACRS) when a physician assistant was involved in the care of a patient. The Evaluation Team worked with CIHI and the Ministry to determine how this should be identified on the abstracts

In the absence of a designate provider code for PAs or the 2007/08 fiscal year the process for recording PA involvement in patient care was as follows:

For DAD records, Health Records Used Provider Type 9

For DAD records, Health Records recorded the Provider Type 9 (Optional – Defined by MOHLTC) when a physician assistant was involved in a patient's care.

For NACRS records, Health Records Used Provider Type 3

For NACRS records, Health Records recorded the Provider Type 3 (Other Responsible Service Provider) when a physician assistant was involved in a patient's care.

For both DAD and NACRS, the Ministry required that hospital demonstration sites use a provider number beginning with nine 9's, followed by a 6-digit number (for a total of 15 characters, e.g. 999999999123456) to identify each health care practitioner functioning in a physician assistant role uniquely. The service type of the physician assistant was assigned as the service type of the supervising physician.

Beginning in the fiscal year of 2008-09, CIHI added a new Provider Service for Physician Assistants and a new Provider Type in both the DAD and NACRS databases.

The Evaluation Team worked with the Ministry to acquire the DAD and NACRS data directly from the Ministry. All identifiable patient information was removed from the records.

The results from the analyses of the DAD and NACRS data are presented in **Technical Appendix H**.

Supervising Physician Supervisory/ Administration Time Records

The Supervising Physician Will Be Required To Track His/Her Supervisory/ Administrative Time

Initially, a simple web-based survey was sent to supervising physicians biweekly via email. The purpose of the survey was to validate the adequacy of the compensation for the supervising physicians.   The survey assessed time spent providing direct supervision and indirect supervision and time spent on administration.

However, an initial analysis of data revealed that there were challenges with physician compliance with this data collection activity and the quality of data collected was variable. Specific challenges encountered with the use of this data collection tool included:

- Lack of acceptance of the evaluation team's definition of supervision

- Challenges in compliance of reporting

- Challenges in identifying all the appropriate supervising physicians who should be reporting supervision time

- Interpretation of survey results from physicians/sites that share supervisory responsibility
- Data quality

Revised Collection of Supervision Time Data via PA Online Survey

In light of these challenges, it was agreed that the collection of supervision and administrative time directly from supervising physicians would be discontinued, and replaced instead by an online survey sent to all Hospital PAs in the demonstration project. The survey asked PAs to report on the total number of hours that they worked independently and the total hours they worked with a physician. This survey allowed the evaluation team to obtain information on all physicians supervising the PA, not just the primary supervising physician. However, since the surveys were being completed by PAs, it was no longer possible to capture the administrative time that supervising physicians would have spent during the remaining period of the demonstration project.

The results of the analyses of the supervising physician time reports are presented in **Technical Appendix K**.

Community Health Centre Demonstration Project

The Community Health Centres (CHCs) participating as demonstration sites in the PA Implementation Initiative were asked to identify the potential benefits and risks associated with the implementation of the PA role in CHCs. The following potential benefits were identified:

- More clients served;
- Timely client appointments;
- Capacity to take on new clients;
- Efficient work flow;
- Increase physician satisfaction; and
- PA enriches clinical team with their expertise and perspectives.
- The following risks were identified:
- Lack of clarity of roles, for team members and clients;
- Incompatibility of the PA with team members;
- Client care could be fragmented between multiple caregivers;
- PA role could reduce the amount of time the family physicians have to see clients;
- Client rejection of the PA; and
- Busy office, lack of physical space.

These benefits and risks, identified by the CHCs, reflect many of the evaluation questions identified by the Evaluation Subcommittee.

A detailed description of the data collection instruments and sources, the frequency of their application, and a description of how the instruments were administered is provided in the following sections.

Team Effectiveness Survey

The TES was presented in a study done by the AOHC in April, 2007. Slight modifications were made to the tool.

The team effectiveness survey (TES) tool[2] used for the evaluation of CHCs was one that was presented in a recent research study by the Association of Ontario Health Centres (AOHC). The study was published in April, 2007 and was called *Building Better Teams: A Toolkit for Strengthening Teamwork in Community.* The Evaluation Team selected this tool since it is one that the CHCs has seen before, and it was recommended by the AOHC. Since the survey was developed prior to the initiation of the PA implementation project slight modifications were made to reflect specific questions related to the PA role.

The participants are selected by the individual CHCs

Each CHC selected the team members to participate in the TES. The team members were a mix of clinical and administrative staff. A team membership list was provided to each respondent to ensure that there was a consistent understanding of the team composition across all team members when responding to the survey.

TES was administered three times

The survey was administered three times over the course of the project. First, before the PA began work with the team (i.e. the baseline); the second was administered half-way through the implementation project, and the last one at the end.

The purpose of the survey was to assess key elements of teamwork and team development.

Team Focus Groups

To further evaluate the team and the PA role, focus groups were conducted with team members.

Team focus groups were conducted two times

Team focus groups were conducted two times throughout the course of the two-year demonstration (i.e. after one year, and at the end of the project).

Team focus groups assessed the team's perspective on topics such as the impact of the PA on clients, the impact of the PA on the health

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[2] Bens, I. (2000) Advanced Team Facilitation: Tools to Achieve High Performance Teams. p. 63.

care delivery system and the PA's capabilities. The results of the CHC team focus groups are presented in **Technical Appendix F**.

Client Satisfaction Survey

CHCs used their own client satisfaction surveys and provided results to Evaluation Team

In order to limit the burden on the CHCs, client satisfaction were evaluated using the CHCs' pre-existing client satisfaction surveys. Each CHCs had designed their own client satisfaction surveys. The CHCs appended two questions to the pre-existing surveys:

1. Have you ever seen a physician assistant at this Centre? (Yes / No)

2. If yes, were you satisfied with the services the physician assistant provided?

   Very unsatisfied / Somewhat unsatisfied / Neither satisfied nor unsatisfied / Satisfied / Very satisfied

The client satisfaction surveys were administered throughout the project. Client participation was determined by the CHCs. The results from the CHC client satisfaction surveys are presented in **Technical Appendix G**.

Physician Assistant Interviews

Physician assistants participated in three telephone interviews

The health care practitioners functioning in the physician assistant role participated in interviews three times throughout the project. A list of the interview questions was sent to the PAs ahead of time for preparation. The interviews were conducted by the Evaluation Team over the telephone.

The interviews assessed the PA's perspective on topics such as the PA role, working with supervising physicians, working with the team, lessons learned and critical success factors. The results from the CHC PA interviews are presented in **Technical Appendix B**.

Supervising Physician Interviews

Supervising physicians participated in three telephone interviews

Interviews were conducted with the supervising physicians three times throughout the project. A list of the interview questions was sent to the physicians ahead of time for preparation. The interviews were conducted by the Evaluation Team over the telephone.

The interviews assessed the physician's perspective on topics such as the impact of the PA on clients, the impact of the PA on the health care delivery system, the impact of the PA on the supervising physician, the PA's capabilities, lessons learned and critical success factors. The results from the CHC supervising physician interviews are presented in **Technical Appendix C**.

Administration Interviews

Two rounds of telephone interviews were conducted with the Executive Directors, or whoever was directly responsible for clinical care at each of the CHC demonstration sites. A list of the interview questions was sent to the participants ahead of time for preparation.

The interviews assessed the representative's perspective on topics such as the impact of the PA on clients, the impact of the PA on the health care delivery system, the PA's capabilities, lessons learned and critical success factors. The results from the CHC administrative interviews are presented in **Technical Appendix D**.

Administrative Data

The Evaluation Subcommittee had access to the following administrative data:

- Purkinje: Client records, which include demographic and encounter data, with identification of the provider involved in care

The Evaluation Team was responsible for the analysis of the Purkinje data. The Data Management Coordinators at the CHCs were responsible for extracting the data and sending it to the Evaluation Team. The results of the analysis of CHC Purkinje data are presented in **Technical Appendix I**.

Supervising Physician Supervisory/ Administration Time Records

The Supervising Physician Required To Track His/Her Supervisory/ Administrative Time

A simple web-based survey was sent to supervising physicians biweekly via email. The purpose of the survey was to provide data to help validate the adequacy of the compensation for the supervising physicians (i.e. relative to the time spent on supervision and administrative activities). The survey assessed time spent providing direct supervision and indirect supervision and time spent on administration. The results of the analyses of the supervising physician time reports are presented in **Technical Appendix K**.

Physician Employed PA Demonstration Project

A detailed description of the data collection instruments and sources, the frequency of their application, and a description of how the instruments were administered is provided in the following sections.

Team Focus Groups

To evaluate the team and the PA role, focus groups were conducted with team members.

| Team focus groups were conducted two times | Team focus groups were conducted two times throughout the course of the two-year demonstration (i.e., after one year, and at the end of the project) at LTC sites.

Team focus groups assessed the team's perspective on topics such as the impact of the PA on clients, the impact of the PA on the health care delivery system and the PA's capabilities. The results from the LTC team focus groups are presented in **Technical Appendix F**. |

Physician Assistant Interviews

| *Physician assistants participated in three telephone interviews* | The physician assistants participated in interviews three times throughout the project. A list of the interview questions was sent to the PAs ahead of time for preparation. The interviews were conducted by the Evaluation Team over the telephone.

The interviews assessed the PA's perspective on topics such as the PA role, working with supervising physicians, working with the team, lessons learned and critical success factors. The results of the PEPA PA interviews are presented in **Technical Appendix B**. |

Supervising Physician Interviews

| *Supervising physicians participated in three telephone interviews* | Interviews were conducted with the supervising physicians three times throughout the project. A list of the interview questions was sent to the physicians ahead of time for preparation. The interviews were conducted by the Evaluation Team over the telephone.

The interviews assessed the physician's perspective on topics such as the impact of the PA on patients, the impact of the PA on the health care delivery system, the impact of the PA on the supervising physician, the PA's capabilities, lessons learned and critical success factors. The results of the supervising physician interviews are presented in **Technical Appendix C**. |

Administration Interviews

| *Telephone interviews were conducted with an administration representative at the LTC facilities* | Telephone interviews were conducted with a representative of the administration at the LTC facilities. A list of the interview questions was sent to the participants ahead of time for preparation.

The interviews assessed the representative's perspective on topics such as the impact of the PA on patients, the impact of the PA on the health care delivery system, the PA's capabilities, lessons learned and critical success factors. The results of the LTC administrative interviews are presented in **Technical Appendix D**. |

Administrative Data

Diabetes Care Project Sites

In the diabetes care project sites the Evaluation Team was able to obtain data from the clinical data collection system.

Long-Term Care Project Sites

The LTC facilities did not have a common administrative system that could track PA activity. As a result, the Evaluation Team developed refined a simple tool initially developed by one of the LTC PAs for all LTC PAs to use to track their activity monthly. The PAs tracked the number of times they complete each task. Tasks were grouped into one of the following categories: patient care, treatments or administrative.

The results from the analyses of the PEPA encounter data are presented in **Technical Appendix J**.

Supervising Physician Supervisory/ Administration Time Records

The Supervising Physician Was Required To Track His/Her Supervisory/ Administrative Time

A simple web-based survey was sent to supervising physicians biweekly via email. The purpose of the survey was to provide data to help validate the adequacy of the compensation for the supervising physicians (i.e. relative to the time spent on supervision and administrative activities). The survey assessed time spent providing direct supervision and indirect supervision and time spent on administration. The results of the analyses of the supervising physician time reports are presented in **Technical Appendix K**.

Technical Appendix B – Detailed Findings from Physician Assistant Interviews

Physician assistants were asked to participate in 3 interviews over the course of the original 2 year demonstration contract. Interview guides were sent to interviewees in advance to allow them to prepare for the interviews. Interviews included both open and closed ended questions and each interview built upon the questions and structure of the previous interview to allow the evaluation team to analyze trends and changes over time. Final interviews included several more open ended questions to allow participants to reflect on successes and challenges of the PA program and its implementation, share lessons learned and provide advice on changes that they would like to see as the Ministry moves forward with rolling out the PA role across Ontario.

The first set of tables provides a perspective on the growing impact of PAs over the two year demonstration period by showing the change in SP responses to selected questions over the course of the 3 interviews.

The majority of the analyses presented in this appendix are based on the final interviews for PAs who had completed the full 2 year contract, or for PAs who did not start until after April 1st 2008, sufficient time elapsed since the 2nd interview to warrant a final interview before the end of the evaluation period set for March 31st 2010. These PAs were first interviewed 6 months after they started (interview #1) and then again at the midpoint of the project (interview #2). The focus on final interview (#3) results is to demonstrate the ultimate impact of the PA at the end of the contract period.

Comparisons of Survey Response Trends (from Interview 1 to Interview 3)

How satisfied were you with your primary supervising physician?

The satisfaction of PAs with their primary supervising physician increased over the course of the project.

Exhibit 4: Trend in PA Satisfaction with Their Primary Supervising Physician

Satisfaction of PA with SP	Interview #		
	1	2	3
Very Satisfied	55%	65%	73%
Satisfied	30%	29%	27%
Neither Satisfied or Unsatisfied	9%	3%	0%
Unsatisfied	4%	3%	0%
Very Unsatisfied	0%	0%	0%
Don't Know/NA	1%	0%	0%
Total	100%	100%	100%
Number of Interviews	67	62	52

How well do you think your team understands the PA role?

PAs also reported increased that the team's understanding of the PA role over time.

Exhibit 5: Trend in PA Perception of Understanding of Team of PA Role

How well does Team understand PA role?	Interview #		
	1	2	3
Understands Completely	40%	47%	62%
Understands Somewhat	58%	53%	38%
Does Not Understand at All	1%	0%	0%
Total	100%	100%	100%
Number of Interviews	67	62	52

How strongly do you agree with the following statement: "I hope to continue to work as a PA in Ontario after the conclusion of the demonstration project."

One area where there was no major change over time was the agreement of PAs with the statement that they hope to continue working as a PA in Ontario. At interview #3, 61% of PAs indicated that they hope to keep working as a PA, compared to 60% (with 4% reporting don't know) at interview #1.

Exhibit 6: Trend in PA Hope to Keep Working as PA in Ontario

PA Hopes to Continue Working as PA in Ontario?	Interview #		
	1	2	3
Strongly Agree	45%	39%	38%
Agree	15%	19%	23%
Neither Agree of Disagree	22%	24%	23%
Disagree	3%	5%	6%
Strongly Disagree	10%	10%	10%
Don't Know/NA	4%	3%	0%
Total	100%	100%	100%
Number of Interviews	67	62	52

How strongly do you agree with the following statement: "I would advise others to seek a role as a PA in Ontario."

Across all interviews, more than 85% of PAs would recommend the PA role to others.

Exhibit 7: Trend in PA Willingness to Recommend PA Role to Others

PA Would Recommend PA Role to Others?	Interview #		
	1	2	3
Strongly Agree	54%	52%	50%
Agree	31%	37%	38%
Neither Agree of Disagree	6%	8%	8%
Disagree	1%	2%	0%
Strongly Disagree	6%	2%	4%
Don't Know/NA	1%	0%	0%
Total	100%	100%	100%
Number of Interviews	67	62	52

The rest of the analysis results shown in this appendix are based only on the final interview feedback.

Distribution of Interview Participants

Distribution of PAs by Clinical Area and PA Stream

Results Based on Interviews with 95% of Physician Assistants

As of May 2010, 52 final Physician Assistant interviews were completed or 95% of the expected number (55) of interviews. The following exhibit shows the distribution of these interviews by clinical area and PA stream. All of the PAs working in the ED, and in the PEPA sites (long-term care and diabetes) were formally trained PAs. All but one of the PAs working in surgery were IMGs, and the majority of PAs in other hospital inpatient areas were IMGs. One of three of the CHC PAs completing final interviews was an IMG.

Exhibit 8: Distribution of Physician Assistants Completing Final Interview by Clinical Area and PA Stream

Clinical Area	# of Physician Assistants by Stream			
	IMG Stream	PA Stream	Total	% IMG
Medicine	17	5	22	77%
Surgery	12	1	13	92%
CCC/Palliative	2	1	3	67%
Emergency	-	6	6	0%
Hospital Total	31	13	44	70%
CHC	1	2	3	33%
Diabetes	-	2	2	0%
LTC	-	3	3	0%
PEPA Total	-	5	5	0%
Total	32	20	52	62%

Results from Final PA Survey/Interview

Presented below are the detailed results of the closed ended questions asked in the physician assistant interviews. Analysis of open-ended questions is presented in **Technical Appendix E**. For PA final interview results, results for each question are presented in the following three formats:

- PA Stream (i.e. International Medical Graduate [IMG] or formally trained PA)

- PA Clinical Area (demonstration type and clinical program)

- Organization Teaching Status (demonstration type and teaching status for hospital sites)

Where a difference in findings was statistically significant, it has been highlighted in the report. It should be noted, that due to the small number of PAs participating in the CHC and PEPA demonstrations, findings should be interpreted with some caution.

Where the actual survey question is not presented in the exhibit itself, the specific question that was asked in PA interviews is presented in the heading preceding the exhibit.

How well do you think your primary supervising physician understood the PA role at the end of the project?

PAs were asked whether they believed that their SP understood the PA role. Overall, 88% of PAs reported that their SP understood the role, with greater understanding by SPs reported by IMGs functioning in the PA role. There was no significant difference in results by PA stream.

Exhibit 9: PA Perception of SP Understanding of PA Role by PA Stream

PA Stream	Does Supervising Physician understand PA role?			# of Interviews
	1 - Understands completely	2 - Understands somewhat	3 - Does not understand at all	
IMG	**91%**	9%	0%	32
PA	**85%**	15%	0%	20
Grand Total	88%	12%	0%	52

PAs in CHCs and in CCC/palliative care all reported that their SPs completely understood the PA role. PAs in the ED and Surgery were least likely to report complete understanding by their SPs, but even for these PAs the percent complete understanding was more than 80%.

Exhibit 10: PA Perception of SP Understanding of PA Role by Clinical Area

Clinical Area	Does Supervising Physician understand PA role?			# of Interviews
	1 - Understands completely	2 - Understands somewhat	3 - Does not understand at all	
1 Medicine	91%	9%	0%	22
2 Surgery	85%	15%	0%	13
3 CCC/Palliative	100%	0%	0%	3
4 Emergency	83%	17%	0%	6
Hosp. Subtotal	**89%**	**11%**	**0%**	**44**
5 CHC	**100%**	**0%**	**0%**	**3**
6 Diabetes	50%	50%	0%	2
7 Long Term Care	100%	0%	0%	3
PEPA Subtotal	**80%**	**20%**	**0%**	**5**
Grand Total	**88%**	**12%**	**0%**	**52**

PAs in small community hospitals reported the lowest level of complete understanding of the PA role by their SPs.

Exhibit 11: PA Perception of SP Understanding of PA Role by Teaching Status/Hospital Size

| Teaching Status | Does Supervising Physician understand PA role? | | | # of Interviews |
	1 - Understands completely	2 - Understands somewhat	3 - Does not understand at all	
1 Teaching	92%	8%	0%	12
2 Comm. Large	91%	9%	0%	22
3 Comm. Small	71%	29%	0%	7
4 CCC/Palliative	100%	0%	0%	3
5 Non-Hospital	88%	13%	0%	8
Grand Total	88%	12%	0%	52

How well do you think your team understood the PA role at the end of the project?

PAs in IMG Stream Significantly More Likely to Report Their Health Care Team Fully Understands PA Role

The PAs were asked whether their health care team fully understood the PA role. A lower percent of PAs reported that their health care team completely understands the PA role (62%) compared to the results for SP understanding of the role (88% with complete understanding). PAs in the IMG stream were significantly more likely to report that their health care team completely understood the PA role.

Exhibit 12: PA Perception of Health Care Team Understanding of PA Role by PA Stream

| PA Stream | Does health care team understand PA role? | | | # of Interviews |
	1 - Understands completely	2 - Understands somewhat	3 - Does not understand at all	
IMG	**69%**	31%	0%	32
PA	**50%**	50%	0%	20
Grand Total	62%	38%	0%	52

PAs in the PEPA sites were most likely to report that their health care team completely understood the PA role, while PAs in the CHCs were least likely to report complete understanding of the role by their health care team. In the hospital setting, PAs in Medicine were least likely to report complete understanding of the role by their health care team. However, none of these differences were statistically significant, due to the small sample sizes.

Exhibit 13: PA Perception of Health Care Team Understanding of PA Role by Clinical Area

| Clinical Area | Does health care team understand PA role? | | | # of Interviews |
	1 - Understands completely	2 - Understands somewhat	3 - Does not understand at all	
1 Medicine	55%	45%	0%	22
2 Surgery	69%	31%	0%	13
3 CCC/Palliative	67%	33%	0%	3
4 Emergency	67%	33%	0%	6
Hosp. Subtotal	**61%**	**39%**	**0%**	**44**
5 CHC	**33%**	**67%**	**0%**	**3**
6 Diabetes	50%	50%	0%	2
7 Long Term Care	100%	0%	0%	3
PEPA Subtotal	**80%**	**20%**	**0%**	**5**
Grand Total	**62%**	**38%**	**0%**	**52**

PAs working in small community hospitals reported the highest degree of complete understanding of the PA role by their health care team.

Exhibit 14: PA Perception of Health Care Team Understanding of PA Role by Teaching Status/Hospital Size

| Teaching Status | Does health care team understand PA role? | | | # of Interviews |
	1 - Understands completely	2 - Understands somewhat	3 - Does not understand at all	
1 Teaching	58%	42%	0%	12
2 Comm. Large	59%	41%	0%	22
3 Comm. Small	71%	29%	0%	7
4 CCC/Palliative	67%	33%	0%	3
5 Non-Hospital	63%	38%	0%	8
Grand Total	62%	38%	0%	52

Team Integration – PA Perspective

PAs were asked whether they felt that they had been integrated /accepted into the health care team. 79% of PA reported complete

integration/acceptance, with a slightly higher acceptance reported by IMGs than by formally trained PAs. These differences were not statistically significant. No PAs reported that they had not been integrated/accepted into the team at all.

Exhibit 15: PA Perception of Integration/Acceptance into Health Care Team by PA Stream

| PA Stream | Do you feel like you have been integrated/accepted into the team? | | | # of Interviews |
	1 - Completely	2 - Somewhat	3 - Not at all	
IMG	81%	19%	0%	32
PA	75%	25%	0%	20
Grand Total	79%	21%	0%	52

PAs working in Medicine reported the highest percent of complete integration/acceptance into health care team. PAs working in the CHCs and CCC/palliative reported the lowest percent of complete acceptance.

Exhibit 16: PA Perception of Integration/Acceptance into Health Care Team by Clinical Area

| Clinical Area | Do you feel like you have been integrated/accepted into the team? | | | # of Interviews |
	1 - Completely	2 - Somewhat	3 - Not at all	
1 Medicine	91%	9%	0%	22
2 Surgery	69%	31%	0%	13
3 CCC/Palliative	67%	33%	0%	3
4 Emergency	83%	17%	0%	6
Hosp. Subtotal	**82%**	**18%**	**0%**	**44**
5 CHC	**67%**	**33%**	**0%**	**3**
6 Diabetes	100%	0%	0%	2
7 Long Term Care	33%	67%	0%	3
PEPA Subtotal	**60%**	**40%**	**0%**	**5**
Grand Total	**79%**	**21%**	**0%**	**52**

With the exception of PAs working in CCC/Palliative units, over 80% of PAs in the hospital setting reported that they had been completely accepted into the health care team.

Exhibit 17: PA Perception of Integration/Acceptance into Health Care Team by Teaching Status/Hospital Size

Teaching Status	Do you feel like you have been integrated/accepted into the team?			# of Interviews
	1 - Completely	2 - Somewhat	3 - Not at all	
1 Teaching	83%	17%	0%	12
2 Comm. Large	82%	18%	0%	22
3 Comm. Small	86%	14%	0%	7
4 CCC/Palliative	67%	33%	0%	3
5 Non-Hospital	63%	38%	0%	8
Grand Total	79%	21%	0%	52

Are there tasks that you felt you were qualified to perform in this practice setting but were not given the opportunity to do so?

PAs in IMG Stream Significantly More Likely to Report Limitations in Opportunity to Function at Full Scope of Capabilities

PAs were asked whether there were tasks that they felt they were qualified to perform in the practice setting where they were employed, but that they had not been given an opportunity to do. 58% of PAs reported that there were tasks that they had not been given the opportunity to perform; IMGs were more likely to report this limitation (69%) compared to formally trained PAs (40%) and this difference was statistically significant.   Lack of medical directives was the most frequently reported constraint on the PA's ability to perform a full range of tasks.

Exhibit 18: PA Perception of Lack of Opportunity to Perform all Tasks by PA Stream

Are there tasks that you feel qualified to perform in this practice setting, but have not been given the opportunity to do?			
PA Stream	No	Yes	Interviews
IMG	31%	69%	32
PA	60%	40%	20
Grand Total	42%	58%	52

Two thirds of the PAs in Surgery, CCC/Palliative, and CHCs reported that there were tasks they had not had an opportunity to perform.

Exhibit 19: PA Perception of Lack of Opportunity to Perform all Tasks by Clinical Setting

Are there tasks that you feel qualified to perform in this practice setting, but have not been given the opportunity to do?			
Clinical Program	No	Yes	Interviews
1 Medicine	41%	59%	22
2 Surgery	31%	69%	13
3 CCC/Palliative	33%	67%	3
4 Emergency	50%	50%	6
Hospital Subtotal	**39%**	**61%**	**44**
5 CHC	**33%**	**67%**	**3**
6 Diabetes	100%	0%	2
7 Long Term Care	67%	33%	3
PEPA Subtotal	**80%**	**20%**	**5**
Grand Total	**42%**	**58%**	**52**

PAs working in teaching hospitals were the most likely (75%) to report limitations on the tasks they had been given an opportunity to perform and PAs working in non-hospital setting the least likely.

Exhibit 20: PA Perception of Lack of Opportunity to Perform all Tasks by Teaching Category/Hospital Size

Are there tasks that you feel qualified to perform in this practice setting, but have not been given the opportunity to do?			
Teaching Category	No	Yes	Interviews
1 Teaching	25%	75%	12
2 Comm. Large	45%	55%	22
3 Comm. Small	43%	57%	7
4 CCC/Palliative	33%	67%	3
5 Non-Hospital	63%	38%	8
Grand Total	42%	58%	52

PA Satisfaction with SP and Health Care Team

The PAs were asked to indicate their degree of satisfaction with both their primary supervising physician and the health care team with whom they usually worked.

All of the PAs reported that they were satisfied with their SP, with 73% saying they were "very satisfied". Formally trained PAs were more likely to report being "very satisfied" with their SP than IMGs, but this difference was not statistically significant.

Exhibit 21: PA Satisfaction with Primary Supervising Physician by PA Stream

		How satisfied are you with your primary Supervising Physician?						
PA Stream	Interviews	% Distribution of PAs by Satisfaction						
		Very Sat.	Sat.	Neither Sat. or Dissat.	Dissat.	Very Dissat.	Don't Know /NA	% Sat. or Very Sat
IMG	32	69%	31%	0%	0%	0%	0%	100%
PA	20	80%	20%	0%	0%	0%	0%	100%
Grand Total	52	73%	27%	0%	0%	0%	0%	100%

All of the PAs in CCC/palliative care and the CHCs reported being very satisfied with their primary SP.

Exhibit 22: PA Satisfaction with Primary Supervising Physician by Clinical Program

		How satisfied are you with your primary Supervising Physician?						
Clinical Program	Interviews	% Distribution of PAs by Satisfaction						
		Very Sat.	Sat.	Neither Sat. or Dissat.	Dissat.	Very Dissat.	Don't Know /NA	% Sat. or Very Sat
1 Medicine	22	68%	32%	0%	0%	0%	0%	100%
2 Surgery	13	77%	23%	0%	0%	0%	0%	100%
3 CCC/Palliative	3	100%	0%	0%	0%	0%	0%	100%
4 Emergency	6	67%	33%	0%	0%	0%	0%	100%
Hospital Subtotal	**44**	**73%**	**27%**	**0%**	**0%**	**0%**	**0%**	**100%**
5 CHC	**3**	**100%**	**0%**	**0%**	**0%**	**0%**	**0%**	**100%**
6 Diabetes	2	0%	100%	0%	0%	0%	0%	100%
7 Long Term Care	3	100%	0%	0%	0%	0%	0%	100%
PEPA Subtotal	**5**	**60%**	**40%**	**0%**	**0%**	**0%**	**0%**	**100%**
Grand Total	**52**	**73%**	**27%**	**0%**	**0%**	**0%**	**0%**	**100%**

PAs in teaching hospitals were the least likely to report being highly satisfied with their primary SP.

Exhibit 23: PA Satisfaction with Primary Supervising Physician by Teaching Status/Hospital Size

How satisfied are you with your primary Supervising Physician?								
Teaching Status	Interviews	% Distribution of PAs by Satisfaction						
		Very Sat.	Sat.	Neither Sat. or Dissat.	Dissat.	Very Dissat.	Don't Know /NA	% Sat. or Very Sat
1 Teaching	12	58%	42%	0%	0%	0%	0%	100%
2 Comm. Large	22	77%	23%	0%	0%	0%	0%	100%
3 Comm. Small	7	71%	29%	0%	0%	0%	0%	100%
4 CCC/Palliative	3	100%	0%	0%	0%	0%	0%	100%
5 Non-Hospital	8	75%	25%	0%	0%	0%	0%	100%
Grand Total	52	73%	27%	0%	0%	0%	0%	100%

PA Satisfaction with Health Care Team

All PAs in the IMG stream reported being either satisfied or very satisfied with their health care team. Only one formally trained PA reported being neither satisfied nor dissatisfied with their health care team.

Exhibit 24: PA Satisfaction with Health Care Team by PA Stream

How satisfied are you with the team that you normally work with?								
PA Stream	Interviews	% Distribution of PAs by Satisfaction						
		Very Sat.	Sat.	Neither Sat. or Dissat.	Dissat.	Very Dissat.	Don't Know /NA	% Sat. or Very Sat
IMG	32	50%	50%	0%	0%	0%	0%	100%
PA	20	60%	35%	5%	0%	0%	0%	95%
Grand Total	52	54%	44%	2%	0%	0%	0%	98%

A higher percent of PAs in non-hospital sites reported being very satisfied with their health care team than the PAs in the hospital sites.

Exhibit 25: PA Satisfaction with Health Care Team by Clinical Program

How satisfied are you with the team that you normally work with?								
Clinical Program	Interviews	% Distribution of PAs by Satisfaction						
		Very Sat.	Sat.	Neither Sat. or Dissat.	Dissat.	Very Dissat.	Don't Know /NA	% Sat. or Very Sat
1 Medicine	22	55%	45%	0%	0%	0%	0%	100%
2 Surgery	13	46%	54%	0%	0%	0%	0%	100%
3 CCC/Palliative	3	67%	33%	0%	0%	0%	0%	100%
4 Emergency	6	50%	50%	0%	0%	0%	0%	100%
Hospital Subtotal	**44**	**52%**	**48%**	**0%**	**0%**	**0%**	**0%**	**100%**
5 CHC	**3**	**67%**	**33%**	**0%**	**0%**	**0%**	**0%**	**100%**
6 Diabetes	2	100%	0%	0%	0%	0%	0%	100%
7 Long Term Care	3	33%	33%	33%	0%	0%	0%	67%
PEPA Subtotal	**5**	**60%**	**20%**	**20%**	**0%**	**0%**	**0%**	**80%**
Grand Total	**52**	**54%**	**44%**	**2%**	**0%**	**0%**	**0%**	**98%**

PAs in teaching hospitals and small community hospitals had the lowest percent of respondents saying they were very satisfied with their health care team.

Exhibit 26: PA Satisfaction with Health Care Team by Teaching Status/Hospital Size

How satisfied are you with the team that you normally work with?								
Teaching Status	Interviews	% Distribution of PAs by Satisfaction						
		Very Sat.	Sat.	Neither Sat. or Dissat.	Dissat.	Very Dissat.	Don't Know /NA	% Sat. or Very Sat
1 Teaching	12	42%	58%	0%	0%	0%	0%	100%
2 Comm. Large	22	59%	41%	0%	0%	0%	0%	100%
3 Comm. Small	7	43%	57%	0%	0%	0%	0%	100%
4 CCC/Palliative	3	67%	33%	0%	0%	0%	0%	100%
5 Non-Hospital	8	63%	25%	13%	0%	0%	0%	88%
Grand Total	52	54%	44%	2%	0%	0%	0%	98%

PA Desire to Continue to Work as a PA

Significantly Higher Percent of Formally Trained PAs Reported They Hope to Continue Working as a PA in Ontario

PAs were asked whether they hoped to continue working in the PA role after the conclusion of the demonstration project. 61% of PAs indicated that they strongly agreed or agreed that they hoped to continue. However, only 9% of PAs in the IMG stream indicated that they strongly agreed they wanted to continue in the PA role, compared to 85% of formally trained PAs. This difference was statistically significant.

Exhibit 27: PA Hope to Continue Working as a PA in Ontario by PA Stream

PA Stream	Interviews	% Distribution of PAs by Response						% Strongly Agree or Agree
		Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Don't Know /NA	
IMG	32	9%	31%	34%	9%	16%	0%	**41%**
PA	20	85%	10%	5%	0%	0%	0%	**95%**
Grand Total	52	38%	23%	23%	6%	10%	0%	62%

"I hope to continue working as a PA in Ontario after the conclusion of the demonstration project."

All of the PAs in the ED and PEPA diabetes sites strongly agreed that they hoped to continue working as a PA in Ontario. PAs in Surgery were least likely to agree or strongly agree.

Exhibit 28: PA Hope to Continue Working as a PA in Ontario by Clinical Area

Clinical Area	Interviews	% Distribution of PAs by Response						% Strongly Agree or Agree
		Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Don't Know /NA	
1 Medicine	22	14%	41%	27%	9%	9%	0%	55%
2 Surgery	13	23%	15%	31%	8%	23%	0%	38%
3 CCC/Palliative	3	67%	0%	33%	0%	0%	0%	67%
4 Emergency	6	100%	0%	0%	0%	0%	0%	100%
Hospital Subtotal	**44**	**32%**	**25%**	**25%**	**7%**	**11%**	**0%**	**57%**
5 CHC	**3**	**67%**	**0%**	**33%**	**0%**	**0%**	**0%**	**67%**
6 Diabetes	2	100%	0%	0%	0%	0%	0%	100%
7 Long Term Care	3	67%	33%	0%	0%	0%	0%	100%
PEPA Subtotal	**5**	**80%**	**20%**	**0%**	**0%**	**0%**	**0%**	**100%**
Grand Total	**52**	**38%**	**23%**	**23%**	**6%**	**10%**	**0%**	**62%**

"I hope to continue working as a PA in Ontario after the conclusion of the demonstration project."

All but one of the PA working in the small community hospitals strongly agreed that they hoped to continue to work as a PA. PAs in the teaching hospital and the large community hospitals were least likely to report either strongly agreeing or agreeing that they hoped to continue to work as a PA in Ontario.

Exhibit 29: PA Hope to Continue Working as a PA in Ontario by Teaching Status/Hospital Size

"I hope to continue working as a PA in Ontario after the conclusion of the demonstration project."								
Teaching Status	Interviews	% Distribution of PAs by Response						
		Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Don't Know /NA	% Strongly Agree or Agree
1 Teaching	12	17%	25%	42%	0%	17%	0%	42%
2 Comm. Large	22	18%	36%	18%	14%	14%	0%	55%
3 Comm. Small	7	86%	0%	14%	0%	0%	0%	86%
4 CCC/Palliative	3	67%	0%	33%	0%	0%	0%	67%
5 Non-Hospital	8	75%	13%	13%	0%	0%	0%	88%
Grand Total	52	38%	23%	23%	6%	10%	0%	62%

88% of PAs Who Don't Want To Continue as PA Want to Pursue Career as Physician

PAs who stated that they did not want to continue in the PA role or who responded "neither agree or disagree" were asked to provide reasons for their decision. 88% of those that responded stated that they wanted to pursue a career as a physician.

PAs Not Wanting to Continue Did Not Identify Incentives to Keep Working as PA

PAs who stated that they did not want to continue in the PA role or who responded "neither agree or disagree" were also asked if there was anything that would convince them to keep working as a PA. 56% of PAs did not provide a response to the question and 38% of PAs stated that there was nothing that could convince them to keep working as a PA.

PA Support for PA Role in Ontario

88% of PAs indicated that they strongly agreed or agreed with the statement "I would advise others to seek a role as a PA in Ontario". Although IMGs were much less likely to indicate their desire to continue to work as a PA, they were just as supportive of the PA role for others as the formally trained PAs.

Exhibit 30: PA Support for PA Role in Ontario by PA Stream

PA Stream	Interviews	"I would advise others to seek a role as a PA in Ontario."						
		% Distribution of PAs by Response						
		Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Don't Know /NA	% Strongly Agree or Agree
IMG	32	41%	47%	9%	0%	3%	0%	**88%**
PA	20	65%	25%	5%	0%	5%	0%	**90%**
Grand Total	52	50%	38%	8%	0%	4%	0%	88%

100% of PAs working in CCC/palliative care, ED, CHC, and the PEPA LTC sites strongly agreed or agreed that they would advise others to seek a role as a PA in Ontario.

Exhibit 31: PA Support for PA Role in Ontario by Clinical Area

Clinical Area	Interviews	"I would advise others to seek a role as a PA in Ontario."						
		% Distribution of PAs by Response						
		Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Don't Know /NA	% Strongly Agree or Agree
1 Medicine	22	36%	45%	9%	0%	9%	0%	82%
2 Surgery	13	38%	46%	15%	0%	0%	0%	85%
3 CCC/Palliative	3	67%	33%	0%	0%	0%	0%	100%
4 Emergency	6	83%	17%	0%	0%	0%	0%	100%
Hospital Subtotal	**44**	**45%**	**41%**	**9%**	**0%**	**5%**	**0%**	**86%**
5 CHC	**3**	**100%**	**0%**	**0%**	**0%**	**0%**	**0%**	**100%**
6 Diabetes	2	0%	100%	0%	0%	0%	0%	100%
7 Long Term Care	3	100%	0%	0%	0%	0%	0%	100%
PEPA Subtotal	**5**	**60%**	**40%**	**0%**	**0%**	**0%**	**0%**	**100%**
Grand Total	**52**	**50%**	**38%**	**8%**	**0%**	**4%**	**0%**	**88%**

PAs working in teaching hospitals were least likely to indicate their support for the PA role in Ontario for others. All of the PAs in small

hospitals, CCC/palliative care, and the non-hospital sites reported agreement that others should seek a role as a PA in Ontario.

Exhibit 32: PA Support for PA Role in Ontario by Teaching Status/Hospital Size

Teaching Status	Interviews	% Distribution of PAs by Response						
		Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Don't Know /NA	% Strongly Agree or Agree
1 Teaching	12	42%	25%	17%	0%	17%	0%	67%
2 Comm. Large	22	36%	55%	9%	0%	0%	0%	91%
3 Comm. Small	7	71%	29%	0%	0%	0%	0%	100%
4 CCC/Palliative	3	67%	33%	0%	0%	0%	0%	100%
5 Non-Hospital	8	75%	25%	0%	0%	0%	0%	100%
Grand Total	52	50%	38%	8%	0%	4%	0%	88%

Summary of PA Feedback

All PAs stated that they were satisfied with their SP and the majority also indicated that were satisfied with their team (98%). The majority of PAs (88%) felt that there SP 'completely' understood the PA role, while this percentage was lower for the team's understanding of the PA role (62%). Although the teams did not always understand their role, most of them (79%) felt that they had been completely accepted and integrated into the team.

Majority of formally trained PAs want to continue working as PAs.

Almost all of the formally trained PAs (95%) stated that they wanted to continue working as PAs after the conclusion of the demonstration project. IMG PAs (those PAs who have completed the PA Integration Program offered to IMGs in Ontario) were less likely to want to continue working as a PA after the conclusion of the demonstration project, with 88% stating that they wanted to pursue a career as a physician.

Statistically Significant Differences

The only areas where there were statistically significant differences in results between groups were for PA streams:

▪ 69% of PAs in the IMG stream report that their health care team completely understand the PA role, versus 50% for formally trained PAs

▪ 61% of PAs in the IMG stream report that there were tasks they were capable of performing, but had not been given the opportunity to do so, versus 40% for formally trained PAs

- 41% of PAs in the IMG stream report that they wish to continue to work in the PA role in Ontario, versus 95% for formally trained PAs

Technical Appendix C – Detailed Findings from Supervising Physician Interviews

Supervising physicians were asked to participate in 3 interviews over the course of the original 2 year demonstration contract. Interview guides were sent to interviewees in advance to allow them to prepare for the interviews. Interviews included both open and closed ended questions and each interview built upon the questions and structure of the previous interview to allow the evaluation team to analyze trends and changes over time. Final interviews included several more open ended questions to allow participants to reflect on successes and challenges of the PA program and its implementation, share lessons learned and provide advice on changes that they would like to see as the Ministry moves forward with rolling out the PA role across Ontario.

Distribution of Interview Participants

Results Based on Interviews with 82% of Supervising Physicians

As of May 2010, 41 final Supervising Physician interviews were completed or 82% of the expected number (50) of interviews. The following exhibit shows the distribution of these interviews by clinical area and PA stream.

Distribution of SPs by Clinical Area and PA Stream

Exhibit 33: Distribution of Supervising Physicians Completing Final Interview by Clinical Area and PA Stream

Clinical Area	# of Supervising Physicians by PA Stream			
	IMG Stream	PA Stream	Total	% IMG Stream
Medicine	12	4	16	75%
Surgery	7	1	8	88%
CCC/Palliative	2	1	3	67%
Emergency	-	5	5	0%
Hospital Total	21	11	32	66%
CHC	2	2	4	50%
Diabetes	-	2	2	0%
LTC	-	3	3	0%
PEPA Total	-	5	5	0%
Total	23	18	41	56%

Comparisons of Survey Response Trends (from Interview 1 to Interview 3)

The majority of the analyses presented in this report are based on the final interviews for SPs who either completed the full 2 year

contract, or for SPs who did not start until after April 1st 2008, sufficient time elapsed since the 2nd interview to warrant a final interview before the end of the evaluation period set for March 31st 2010[3]. These SPs were first interviewed 6 months after they started (interview #1) and then again at the midpoint of the project (interview #2). The focus on final interview (#3) results was to demonstrate the ultimate impact of the PA at the end of the contract period.

Delays in Medical Directive Implementation Most Impacted PA Effectiveness

It was anticipated that it would take time for the full impact of the PA to be felt and would take time for the PA to become integrated in the patient care processes at their work site. This was particularly true because of the delays in development and implementation of medical directives encountered in many sites. Frustration with the medical directive development and implementation process was the most frequently reported concern by both administrative interviewees and care team focus group participants.

The first set of tables provides a perspective on the growing impact of PAs over the two year demonstration period by showing the change in SP responses to selected questions over the course of the 3 interviews.

At interview #1, fewer than half of the SPs reported that they were very satisfied with their PAs. By interview #3, 59% of SPs were very satisfied.

How satisfied were you with your PA?

Exhibit 34: Trend in Satisfaction of SP with PA

SP Satisfaction with PA	Interview #		
	1	2	3
Very Satisfied	42%	62%	59%
Satisfied	44%	35%	29%
Neither Satisfied or Unsatisfied	9%	4%	12%
Unsatisfied	3%	0%	0%
Very Unsatisfied	2%	0%	0%
Don't Know/NA	0%	0%	0%
Total	100%	100%	100%
Number of Interviews	66	55	41

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[3] Two supervising physicians were interviewed for a third interview even though they did not supervise a PA right to the end of the evaluation period. One transferred the responsibility for supervising the PA to another physician just before the end of the period, but agreed to complete a third interview because she was so familiar with the impact of the PA. A second supervising physician stopped supervising because their PA left the project just before the end. This supervising physician also agreed to participate in a third interview.

Similarly, the percent of SPs who identified a very positive impact of their PA on patient outcomes rose over the course of the project. By interview #3, more than 85% of SPs report a positive impact of the PA on patient outcomes.

Please rate the impact that the PA has had on quality of patient outcomes

Exhibit 35: Trend in SP Perception of PA Impact on Patient Outcome

SP Perception of PA Impact on Patient Outcome	Interview #		
	1	2	3
Very Positive	11%	33%	37%
Positive	70%	49%	49%
Neither Positive or Negative	18%	18%	15%
Negative	0%	0%	0%
Very Negative	0%	0%	0%
Don't Know/NA	2%	0%	0%
Total	100%	100%	100%
Number of Interviews	66	55	41

There was also a positive trend over time with respect to the percent of SPs reporting a very positive impact of the PA on SP efficiency.

Please rate the impact that the PA has had on your efficiency in providing patient care

Exhibit 36: Trend in SP Perception of Impact of PA on SP Efficiency in Providing Care

SP Perception of PA Impact on SP Efficiency in Providing Care	Interview #		
	1	2	3
Very Positive	23%	31%	46%
Positive	52%	62%	49%
Neither Positive or Negative	18%	7%	5%
Negative	6%	0%	0%
Very Negative	0%	0%	0%
Don't Know/NA	2%	0%	0%
Total	100%	100%	100%
Number of Interviews	66	55	41

Please rate the impact that the PA has had on the quality of your worklife

**Exhibit 37: Trend in SP Perception of
PA Impact on Quality of SP Work Life**

SP Perception of PA Impact on Quality of SP Work Life	Interview #		
	1	2	3
Very Positive	20%	45%	44%
Positive	61%	40%	46%
Neither Positive or Negative	17%	13%	10%
Negative	3%	2%	0%
Very Negative	0%	0%	0%
Don't Know/NA	0%	0%	0%
Total	100%	100%	100%
Number of Interviews	66	55	41

How strongly do you agree with the following statement: "I hope to continue to work with a PA after the conclusion of the demonstration project."

By interview #3, more than 90% of the SPs reported that they hoped to keep working with a PA in the future, and would recommend the PA role to other physician colleagues.

**Exhibit 38: Trend in SP Desire to
Keep Working with a PA in the Future**

SP Hopes to Continue Working with PA in Future?	Interview #		
	1	2	3
Strongly Agree	50%	62%	66%
Agree	36%	27%	27%
Neither Agree of Disagree	8%	7%	5%
Disagree	0%	0%	2%
Strongly Disagree	3%	0%	0%
Don't Know/NA	3%	4%	0%
Total	100%	100%	100%
Number of Interviews	66	55	41

How strongly do you agree with the following statement: "I would recommend working with a PA to a physician colleague of mine."

**Exhibit 39: Trend in SP Agreement to
Recommend PA Role to Other Physicians**

SP Would Recommend PA Role to Other Physicians?	Interview #		
	1	2	3
Strongly Agree	41%	56%	66%
Agree	48%	35%	24%
Neither Agree of Disagree	6%	5%	10%
Disagree	3%	0%	0%
Strongly Disagree	2%	0%	0%
Don't Know/NA	0%	4%	0%
Total	100%	100%	100%
Number of Interviews	66	55	41

Results from Final Survey/Interview – Patient Care and Health Care Delivery

Presented below are the detailed results of the closed ended questions asked in the supervising physician interviews. Analysis of open-ended questions is presented in **Technical Appendix E**. As described in the text of this report, although some trending information is provided below, the focus of analysis is results of the final (i.e. third) interview with participants. For SP final interview results, results for each question are presented in the following four formats:

- PA Stream

- PA Clinical Area

- Organization Teaching Status

Also presented in this appendix, where the survey question is not presented in the table itself is the specific question that was asked in SP interviews

SPs of formally trained PAs reported highest positive impact.

From an overall perspective, supervising physicians of formally trained PAs reported the most positive impact on patient care and the healthcare system, but there were no areas where the differences between the IMG and formally trained streams were statistically significant.

Overall impact on Patient Care and Health Care Delivery by PA Stream		
Dimension	% Positive or Very Positive	
	IMG	PA
Patient Care		
Patient safety	83%	89%
Quality of patient outcomes	83%	89%
Face to face time with health care practitioners	100%	100%
Health Care Delivery		
Throughput	70%	72%
Wait Times	74%	83%

All of the hospital-based supervising physicians in teaching hospitals or small community hospitals reported a positive or very positive impact of the PAs on aspects of patient care. While the majority of SPs in all types of hospitals reported positive impacts on throughput and wait times, the teaching hospital SPs had the highest percent reported positive impact. Because of the small sample size, these differences are not statistically significant.

Percent Positive Impacts Reported by SPs on Patient care and Health Care Delivery (Within Hospitals)

Exhibit 41: Percent Positive Impacts Reported by Hospital Supervising Physicians by Hospital Type

Overall impact on Patient Care and Health Care Delivery by Hospital Teaching Status			
Dimension	% Positive or Very Positive		
	Teaching	Large Community	Small Community
Patient Care			
Patient safety	100%	81%	100%
Quality of patient outcomes	100%	81%	100%
Face to face time with health care practitioners	100%	100%	100%
Health Care Delivery			
Throughput	86%	56%	67%
Wait Times	86%	75%	67%

The most positive impact on patient care in hospitals was reported by the SPs in medicine. SPs working in the ED were most likely to report a positive impact on wait times, and SPs in non-acute programs (e.g. CCC and palliative) were least likely to report positive impacts on patient outcomes or wait times. Because of the small sample size, these differences are not statistically significant.

Exhibit 42: Percent Positive Impacts Reported by Hospital Supervising Physicians by Clinical Area

Overall impact on Patient Care and Health Care Delivery by Hospital Clinical Area				
Dimension	% Positive or Very Positive			
	Medicine	Surgery	ED	CCC/ Palliative
Patient Care				
Patient safety	94%	88%	80%	67%
Quality of patient outcomes	94%	88%	80%	33%
Face to face time with health care practitioners	100%	100%	100%	100%
Health Care Delivery				
Throughput	69%	63%	60%	67%
Wait Times	75%	75%	80%	33%

Percent Positive Impacts Reported by SPs on Patient care and Health Care Delivery (Across Demonstrations)

All of the PEPA SPs reported a positive impact of their PA on all aspects of patient care and health care delivery. Because of the small samples sizes, there were no statistically significant differences in results across demonstration site types.

Exhibit 43: Percent Positive Impacts Reported by Supervising Physicians by Demonstration Site Type

Overall impact on Patient Care and Health Care Delivery by Institution Type			
Dimension	% Positive or Very Positive		
	Hospital	CHC	PEPA
Patient Care			
Patient safety	88%	50%	100%
Quality of patient outcomes	84%	75%	100%
Face to face time with health care practitioners	100%	100%	100%
Health Care Delivery			
Throughput	66%	75%	100%
Wait Times	72%	100%	100%

Please rate the impact that the PA has had on patient safety

Each SP was asked to indicate the impact that they believe their PA has had on patient safety. Overall, 83% of SPs reported that the PA has had a positive impact on patient safety. No SPs reported that the PA has had a negative impact on patient safety. There was no statistically significant difference in the results for PAs in the IMG stream versus the formally trained PAs.

Exhibit 44: SP Perception of PA Impact on Patient Safety by PA Stream

		Patient safety						
		% Distribution of SP Perception of Impact of PA						
PA Stream	Responses	Very Positive	Positive	Neither Pos. or Neg.	Negative	Very Negative	Don't Know /NA	% Very Pos. or Pos.
IMG	23	39%	43%	13%	0%	0%	4%	83%
PA	18	44%	44%	11%	0%	0%	0%	89%
Grand Total	41	41%	44%	12%	0%	0%	2%	85%

100% of SPs in PEPA demonstration sites reported that the PA has had a very positive impact on patient safety. In the hospital demonstration sites, the most positive impact on patient safety was reported for Medicine.

Exhibit 45: SP Perception of PA Impact on Patient Safety by Clinical Area

		Patient safety						
		% Distribution of SP Perception of Impact of PA						
Clinical Area	Responses	Very Positive	Positive	Neither Pos. or Neg.	Negative	Very Negative	Don't Know /NA	% Very Pos. or Pos.
1 Medicine	16	31%	63%	0%	0%	0%	6%	94%
2 Surgery	8	50%	38%	13%	0%	0%	0%	88%
3 CCC/Palliative	3	33%	33%	33%	0%	0%	0%	67%
4 Emergency	5	20%	60%	20%	0%	0%	0%	80%
Hospital Subtotal	**32**	**34%**	**53%**	**9%**	**0%**	**0%**	**3%**	**88%**
5 CHC	4	25%	25%	50%	0%	0%	0%	50%
6 Diabetes	2	100%	0%	0%	0%	0%	0%	100%
7 LTC	3	100%	0%	0%	0%	0%	0%	100%
PEPA Subtotal	**5**	**100%**	**0%**	**0%**	**0%**	**0%**	**0%**	**100%**
Grand Total	**41**	**41%**	**44%**	**12%**	**0%**	**0%**	**2%**	**85%**

Within the hospital demonstrations, the teaching hospital sites reported the most positive impact of the PA on patient safety, followed by the small community hospitals.

Exhibit 46: SP Perception of PA Impact on Patient Safety by Teaching Status/ Hospital Size

Patient safety								
	Responses	% Distribution of SP Perception of Impact of PA						
Teaching Status		Very Positive	Positive	Neither Pos. or Neg.	Negative	Very Negative	Don't Know /NA	% Very Pos. or Pos.
1 Teaching	7	43%	57%	0%	0%	0%	0%	100%
2 Comm. Large	16	38%	44%	13%	0%	0%	6%	81%
3 Comm. Small	6	17%	83%	0%	0%	0%	0%	100%
4 CCC/Palliative	3	33%	33%	33%	0%	0%	0%	67%
5 Non-Hospital	9	67%	11%	22%	0%	0%	0%	78%
Grand Total	41	41%	44%	12%	0%	0%	2%	85%

Please rate the impact that the PA has had on quality of patient outcomes

SPs were asked to identify their perception of the impact of the PA on the quality of patient outcomes. Overall, 85% of SPs reported a positive impact on patient outcomes, with SPs of formally trained PAs reporting a higher % positive impact than SPs of IMGs, but this difference was not statistically significant.

Exhibit 47: SP Perception of PA Impact on Quality of Patient Outcomes by PA Stream

Quality of patient outcomes								
	Responses	% Distribution of SP Perception of Impact of PA						
PA Stream		Very Positive	Positive	Neither Pos. or Neg.	Negative	Very Negative	Don't Know /NA	% Very Pos. or Pos.
IMG	23	35%	48%	17%	0%	0%	0%	83%
PA	18	39%	50%	11%	0%	0%	0%	89%
Grand Total	41	37%	49%	15%	0%	0%	0%	85%

The responses of the SPs to the question about PA impact on quality of patient outcomes were almost identical to their responses to the question on impact on patient safety. In the hospital sites, the highest percent positive response was in Medicine. No SPs reported a negative impact of a PA on quality of patient outcomes. The hospital CCC/palliative care SPs were most likely to report no impact.

Exhibit 48: SP Perception of PA Impact on Quality of Patient Outcomes by Clinical Area

Clinical Area	Responses	% Distribution of SP Perception of Impact of PA						% Very Pos. or Pos.
		Very Positive	Positive	Neither Pos. or Neg.	Negative	Very Negative	Don't Know /NA	
1 Medicine	16	31%	63%	6%	0%	0%	0%	94%
2 Surgery	8	38%	50%	13%	0%	0%	0%	88%
3 CCC/Palliative	3	33%	0%	67%	0%	0%	0%	33%
4 Emergency	5	40%	40%	20%	0%	0%	0%	80%
Hospital Subtotal	**32**	**34%**	**50%**	**16%**	**0%**	**0%**	**0%**	**84%**
5 CHC	4	25%	50%	25%	0%	0%	0%	75%
6 Diabetes	2	100%	0%	0%	0%	0%	0%	100%
7 LTC	3	33%	67%	0%	0%	0%	0%	100%
PEPA Subtotal	**5**	**60%**	**40%**	**0%**	**0%**	**0%**	**0%**	**100%**
Grand Total	**41**	**37%**	**49%**	**15%**	**0%**	**0%**	**0%**	**85%**

Within the hospital sector, the SPs in the teaching sites and the small community hospitals all reported a positive impact of the PA on patient outcomes.

Exhibit 49: SP Perception of PA Impact on Quality of Patient Outcomes by Teaching Status/Hospital Size

Teaching Status	Responses	% Distribution of SP Perception of Impact of PA						% Very Pos. or Pos.
		Very Positive	Positive	Neither Pos. or Neg.	Negative	Very Negative	Don't Know /NA	
1 Teaching	7	43%	57%	0%	0%	0%	0%	100%
2 Comm. Large	16	25%	56%	19%	0%	0%	0%	81%
3 Comm. Small	6	50%	50%	0%	0%	0%	0%	100%
4 CCC/Palliative	3	33%	0%	67%	0%	0%	0%	33%
5 Non-Hospital	9	44%	44%	11%	0%	0%	0%	89%
Grand Total	41	37%	49%	15%	0%	0%	0%	85%

Please rate the impact that the PA has had on time patients have face to face with a healthcare practitioner

All SPs reported that the introduction of the PA had a positive impact on the face-to-face time that patients had with a health care practitioner.

Exhibit 50: SP Perception of PA Impact on Patient Face-to-Face Time with Health Care Practitioner by PA Stream

Time patients have face-to-face with a health care practitioner								
PA Stream	Responses	% Distribution of SP Perception of Impact of PA						
		Very Positive	Positive	Neither Pos. or Neg.	Negative	Very Negative	Don't Know /NA	% Very Pos. or Pos.
IMG	23	61%	39%	0%	0%	0%	0%	100%
PA	18	72%	28%	0%	0%	0%	0%	100%
Grand Total	41	66%	34%	0%	0%	0%	0%	100%

The positive impact on patient time with a health care practitioner was greatest in the PEPA sites, and in the hospital Surgery program.

Exhibit 51: SP Perception of PA Impact on Patient Face-to-Face Time with Health Care Practitioner by Clinical Area

Time patients have face-to-face with a health care practitioner								
Clinical Area	Responses	% Distribution of SP Perception of Impact of PA						
		Very Positive	Positive	Neither Pos. or Neg.	Negative	Very Negative	Don't Know /NA	% Very Pos. or Pos.
1 Medicine	16	50%	50%	0%	0%	0%	0%	100%
2 Surgery	8	75%	25%	0%	0%	0%	0%	100%
3 CCC/Palliative	3	67%	33%	0%	0%	0%	0%	100%
4 Emergency	5	60%	40%	0%	0%	0%	0%	100%
Hospital Subtotal	**32**	**59%**	**41%**	**0%**	**0%**	**0%**	**0%**	**100%**
5 CHC	4	75%	25%	0%	0%	0%	0%	100%
6 Diabetes	2	100%	0%	0%	0%	0%	0%	100%
7 LTC	3	100%	0%	0%	0%	0%	0%	100%
PEPA Subtotal	**5**	**100%**	**0%**	**0%**	**0%**	**0%**	**0%**	**100%**
Grand Total	**41**	**66%**	**34%**	**0%**	**0%**	**0%**	**0%**	**100%**

The highest percentages of SPs reporting a very positive impact of PAs on patient face-to-face time with a health care practitioner were for SPs in the non-hospital sites, and for SPs in the small community hospitals.

Exhibit 52:   SP Perception of PA Impact on Patient Face-to-Face Time with Health Care Practitioner by Teaching Status/Hospital Size

Time patients have face-to-face with a health care practitioner								
Teaching Status	Responses	% Distribution of SP Perception of Impact of PA						% Very Pos. or Pos.
		Very Positive	Positive	Neither Pos. or Neg.	Negative	Very Negative	Don't Know /NA	
1 Teaching	7	43%	57%	0%	0%	0%	0%	100%
2 Comm. Large	16	56%	44%	0%	0%	0%	0%	100%
3 Comm. Small	6	83%	17%	0%	0%	0%	0%	100%
4 CCC/Palliative	3	67%	33%	0%	0%	0%	0%	100%
5 Non-Hospital	9	89%	11%	0%	0%	0%	0%	100%
Grand Total	41	66%	34%	0%	0%	0%	0%	100%

Please rate the impact that the PA has had on throughput (number of patients seen)

SPs were asked what the impact of the introduction of the PA had on the throughput (i.e. the number of patients seen) in their clinical area. More than two thirds of SPs reported a positive impact, with no difference between SPs supervising IMGs versus those supervising formally trained PAs.

Exhibit 53:   SP Perception of PA Impact on Throughput by PA Stream

Throughput (Number of patients seen)								
PA Stream	Responses	% Distribution of SP Perception of Impact of PA						% Very Pos. or Pos.
		Very Positive	Positive	Neither Pos. or Neg.	Negative	Very Negative	Don't Know /NA	
IMG	23	35%	35%	30%	0%	0%	0%	70%
PA	18	33%	39%	22%	0%	0%	6%	72%
Grand Total	41	34%	37%	27%	0%	0%	2%	71%

All of the SPs in PEPA sites reported a very positive impact of the PA on patient throughput, as did three quarters of the SPs in CHCs. Only 25% of SPs in hospitals reported a very positive impact, with the lowest percentages in Emergency (0% very positive) and Medicine (19% very positive). However, when the very positive and positive responses are combined, 66% of hospital SPs reported a positive impact of the PA on throughput.

The low "very positive" responses for ED and Medicine suggest that the addition of the PA in these areas has been less effective in reducing length of stay of patients in the unit, since increased

throughput in areas with constrained capacity can only be achieved by discharging patients earlier, thereby creating capacity to accommodate new patients.

Exhibit 54: SP Perception of PA Impact on Throughput by Clinical Area

Throughput (Number of patients seen)							
Clinical Area	Responses	% Distribution of SP Perception of Impact of PA					
		Very Positive	Positive	Neither Pos. or Neg.	Negative	Very Negative	Don't Know /NA	% Very Pos. or Pos.
1 Medicine	16	19%	50%	25%	0%	0%	6%	69%
2 Surgery	8	50%	13%	38%	0%	0%	0%	63%
3 CCC/Palliative	3	33%	33%	33%	0%	0%	0%	67%
4 Emergency	5	0%	60%	40%	0%	0%	0%	60%
Hospital Subtotal	**32**	**25%**	**41%**	**31%**	**0%**	**0%**	**3%**	**66%**
5 CHC	4	75%	0%	25%	0%	0%	0%	75%
6 Diabetes	2	50%	50%	0%	0%	0%	0%	100%
7 LTC	3	67%	33%	0%	0%	0%	0%	100%
PEPA Subtotal	**5**	**60%**	**40%**	**0%**	**0%**	**0%**	**0%**	**100%**
Grand Total	**41**	**34%**	**37%**	**27%**	**0%**	**0%**	**2%**	**71%**

A positive impact on throughput was reported by 86% of SPs in teaching hospital sites, but by only 56% of SPs in large community hospitals.

Exhibit 55: SP Perception of PA Impact on Throughput by Teaching Status/Hospital Size

Throughput (Number of patients seen)							
Teaching Status	Responses	% Distribution of SP Perception of Impact of PA					
		Very Positive	Positive	Neither Pos. or Neg.	Negative	Very Negative	Don't Know /NA	% Very Pos. or Pos.
1 Teaching	7	29%	57%	14%	0%	0%	0%	86%
2 Comm. Large	16	25%	31%	44%	0%	0%	0%	56%
3 Comm. Small	6	17%	50%	17%	0%	0%	17%	67%
4 CCC/Palliative	3	33%	33%	33%	0%	0%	0%	67%
5 Non-Hospital	9	67%	22%	11%	0%	0%	0%	89%
Grand Total	41	34%	37%	27%	0%	0%	2%	71%

Please rate the impact that the PA has had on wait times (the amount of time a patient waits to see a healthcare practitioner)

SPs were asked what impact the addition of a PA has had on patient wait times. 78% of SPs reported a positive impact, with a higher percent of SPs supervising a formally trained PA reporting a positive impact. However, this difference was not statistically significant.

Exhibit 56: SP Perception of PA Impact on Patient Wait Times by PA Stream

Wait times (Amount of time a patient waits to see a health care practitioner)							
PA Stream	Responses	% Distribution of SP Perception of Impact of PA					
		Very Positive	Positive	Neither Pos. or Neg.	Negative	Very Negative	Don't Know /NA	% Very Pos. or Pos.
IMG	23	39%	35%	26%	0%	0%	0%	74%
PA	18	44%	39%	11%	0%	0%	6%	83%
Grand Total	41	41%	37%	20%	0%	0%	2%	78%

All of the SPs in the non-hospital sites reported a positive impact on wait times. In the hospital sites, SPs in the ED reported the highest percent positive impact on wait times (80%) and SPs in CCC/Palliative the lowest (33%).

Exhibit 57: SP Perception of PA Impact on Patient Wait Times by Clinical Area

Wait times (Amount of time a patient waits to see a health care practitioner)							
Clinical Area	Responses	% Distribution of SP Perception of Impact of PA					
		Very Positive	Positive	Neither Pos. or Neg.	Negative	Very Negative	Don't Know /NA	% Very Pos. or Pos.
1 Medicine	16	31%	44%	19%	0%	0%	6%	75%
2 Surgery	8	38%	38%	25%	0%	0%	0%	75%
3 CCC/Palliative	3	33%	0%	67%	0%	0%	0%	33%
4 Emergency	5	20%	60%	20%	0%	0%	0%	80%
Hospital Subtotal	**32**	**31%**	**41%**	**25%**	**0%**	**0%**	**3%**	**72%**
5 CHC	4	100%	0%	0%	0%	0%	0%	100%
6 Diabetes	2	50%	50%	0%	0%	0%	0%	100%
7 LTC	3	67%	33%	0%	0%	0%	0%	100%
PEPA Subtotal	**5**	**60%**	**40%**	**0%**	**0%**	**0%**	**0%**	**100%**
Grand Total	**41**	**41%**	**37%**	**20%**	**0%**	**0%**	**2%**	**78%**

Within the hospital acute care sites, SPs in small community hospitals reported the lowest percent positive impact and the teaching hospitals the highest.

Exhibit 58: SP Perception of PA Impact on Patient Wait Times by Teaching Status/Hospital Size

Wait times (Amount of time a patient waits to see a health care practitioner)								
Teaching Status	Responses	% Distribution of SP Perception of Impact of PA						
		Very Positive	Positive	Neither Pos. or Neg.	Negative	Very Negative	Don't Know /NA	% Very Pos. or Pos.
1 Teaching	7	29%	57%	14%	0%	0%	0%	86%
2 Comm. Large	16	31%	44%	25%	0%	0%	0%	75%
3 Comm. Small	6	33%	33%	17%	0%	0%	17%	67%
4 CCC/Palliative	3	33%	0%	67%	0%	0%	0%	33%
5 Non-Hospital	9	78%	22%	0%	0%	0%	0%	100%
Grand Total	41	41%	37%	20%	0%	0%	2%	78%

Does the PA follow accepted standards of care?

SPs were asked whether their PAs followed accepted standards of care. 70% of SPs indicated that their PAs always follow accepted standard of care.

Supervising physicians noted that the PA role was an evolving role with new medical directives and best practice approaches being introduced on an ongoing basis. Learning therefore was an ongoing process. As such, physicians stated it was not reasonable to expect that a PA would follow accepted standards of care 100% of the time.

There was no difference in the results by PA stream.

Exhibit 59: SP Evaluation of Whether PA Follows Accepted Standards of Care by PA Stream

Does the PA follow accepted standards of care?				
PA Stream	#	% Distribution of SP Responses		
		All the Time	Most of the Time	Sometimes
IMG	23	70%	26%	4%
PA	18	72%	28%	0%
Grand Total	41	71%	27%	2%

In the hospital sites, highest percent positive results for following standards of care "all the time" were for PAs in medicine and the ED.

Exhibit 60: SP Evaluation of Whether PA Follows Accepted Standards of Care by Clinical Area

Does the PA follow accepted standards of care?				
Clinical Area	#	% Distribution of SP Responses		
		All the Time	Most of the Time	Sometimes
1 Medicine	16	81%	13%	6%
2 Surgery	8	63%	38%	0%
3 CCC/Palliative	3	67%	33%	0%
4 Emergency	5	80%	20%	0%
Hospital Subtotal	**32**	**75%**	**22%**	**3%**
5 CHC	4	50%	50%	0%
6 Diabetes	2	100%	0%	0%
7 LTC	3	33%	67%	0%
PEPA Subtotal	**5**	**60%**	**40%**	**0%**
Grand Total	**41**	**71%**	**27%**	**2%**

The SPs in the small community hospitals all reported that their PAs always follow accepted standards of care, while in the non-hospital sites, this was reported by only 57% of SPs.

Exhibit 61: SP Evaluation of Whether PA Follows Accepted Standards of Care by Teaching Status/Hospital Size

Does the PA follow accepted standards of care?				
Teaching Status	#	% Distribution of SP Responses		
		All the Time	Most of the Time	Sometimes
1 Teaching	7	86%	14%	0%
2 Comm. Large	16	63%	31%	6%
3 Comm. Small	6	100%	0%	0%
4 CCC/Palliative	3	67%	33%	0%
5 Non-Hospital	9	56%	44%	0%
Grand Total	41	71%	27%	2%

Results from Final Survey/Interview – Supervising Physician Practice

The supervising physicians were asked a series of questions about the impact of the PA on themselves and other physicians in their organization.

Percent Positive Impacts Reported by SPs on Physician Practice/Worklife

Hospital SPs reported a positive impact of the PAs on the time available for the SP to focus on complex patients, their efficiency and their quality of worklife. A slight majority of hospital SPs reported a positive impact on their time available to spend with learners (e.g. medical trainees).

Exhibit 62: Percent Positive Impacts Reported by Hospital Supervising Physicians by Hospital Type

Overall impact on Physician Practice by Hospital Teaching Status			
Dimension	% Positive or Very Positive		
	Teaching	Large Community	Small Community
Time for Complex Patients	100%	94%	100%
SP Efficiency	100%	94%	100%
Quality of Worklife	86%	88%	100%
Time for Learners	57%	63%	67%

Non-acute SPs were least likely to report a positive impact on their practice, and ED SPs were least likely to report that the presence of a PA had a positive impact on their time available for learners.

Exhibit 63: Percent Positive Impacts Reported by Hospital Supervising Physicians by Clinical Area

Overall impact on Physician Practice by Hospital Clinical Area				
Dimension	% Positive or Very Positive			
	Medicine	Surgery	ED	CCC/ Palliative
Time for Complex Patients	94%	100%	100%	33%
SP Efficiency	94%	100%	100%	67%
Quality of Worklife	88%	100%	80%	67%
Time for Learners	63%	88%	20%	33%

All of the CHC and PEPA SPs reported that the PA had a positive impact on their time for complex patients, their efficiency, and the quality of their worklife. For SPs in all sectors, the dimension least likely to be positively impacted by the presence of the PA was the time available for other learners.

Exhibit 64: Percent Positive Impacts Reported by Supervising Physicians by Demonstration Site Type

Overall impact on Physician Practice by Institution Type			
Dimension	% Positive or Very Positive		
	Hospital	CHC	PEPA
Time for Complex Patients	91%	100%	100%
SP Efficiency	94%	100%	100%
Quality of Worklife	88%	100%	100%
Time for Learners	59%	50%	40%

Please rate the impact that the PA has had on the time that you have available to care for more complex patients while the PA cares for less complex patients

One hoped for impact of the introduction of the PAs was that the PA could focus their care on less complex patients, thus freeing the SP to spend more time with more complex patients. SPs were asked to indicate the impact of the PA on time the SP has available to care for more complex patients.

Overall, 93% of SPs reported a positive impact of the PA on the ability of the SP to spend more time with complex patients. SPs supervising formally trained PAs were most likely to report a positive impact (100%) compared to SPs supervising IMGs, but this difference was not statistically significant.

Exhibit 65: SP Perception of Impact of PA on SP Time to Spend on More Complex Patients by Stream of PA Supervised

Time SP has available to care for more complex patients while the PA cares for less complex patients								
PA Stream	Responses	% Distribution of SP Perception of Impact of PA						
		Very Positive	Positive	Neither Pos. or Neg.	Negative	Very Negative	Don't Know /NA	% Very Pos. or Pos.
IMG	23	43%	43%	13%	0%	0%	0%	87%
PA	18	44%	56%	0%	0%	0%	0%	100%
Grand Total	41	44%	49%	7%	0%	0%	0%	93%

SPs working in Surgery and CHCs were most likely to report a very positive impact on their ability to spend time on more complex patients. SPs working in CCC/Palliative care were least likely to report a positive impact.

Exhibit 66: SP Perception of Impact of PA on SP Time to Spend on More Complex Patients by Clinical Area

Time SP has available to care for more complex patients while the PA cares for less complex patients								
Clinical Area	Responses	% Distribution of SP Perception of Impact of PA						% Very Pos. or Pos.
		Very Positive	Positive	Neither Pos. or Neg.	Negative	Very Negative	Don't Know /NA	
1 Medicine	16	25%	69%	6%	0%	0%	0%	94%
2 Surgery	8	88%	13%	0%	0%	0%	0%	100%
3 CCC/Palliative	3	33%	0%	67%	0%	0%	0%	33%
4 Emergency	5	60%	40%	0%	0%	0%	0%	100%
Hospital Subtotal	**32**	**47%**	**44%**	**9%**	**0%**	**0%**	**0%**	**91%**
5 CHC	4	75%	25%	0%	0%	0%	0%	100%
6 Diabetes	2	0%	100%	0%	0%	0%	0%	100%
7 LTC	3	0%	100%	0%	0%	0%	0%	100%
PEPA Subtotal	**5**	**0%**	**100%**	**0%**	**0%**	**0%**	**0%**	**100%**
Grand Total	**41**	**44%**	**49%**	**7%**	**0%**	**0%**	**0%**	**93%**

SPs working in small community hospitals were most likely to report a "very positive" impact of the PA on their ability to focus on more complex patients.

Exhibit 67: SP Perception of Impact of PA on SP Time to Spend on More Complex Patients by Teaching Status/Hospital Size

Time SP has available to care for more complex patients while the PA cares for less complex patients								
Teaching Status	Responses	% Distribution of SP Perception of Impact of PA						% Very Pos. or Pos.
		Very Positive	Positive	Neither Pos. or Neg.	Negative	Very Negative	Don't Know /NA	
1 Teaching	7	14%	86%	0%	0%	0%	0%	100%
2 Comm. Large	16	50%	44%	6%	0%	0%	0%	94%
3 Comm. Small	6	83%	17%	0%	0%	0%	0%	100%
4 CCC/Palliative	3	33%	0%	67%	0%	0%	0%	33%
5 Non-Hospital	9	33%	67%	0%	0%	0%	0%	100%
Grand Total	41	44%	49%	7%	0%	0%	0%	93%

Please rate the impact that the PA has had on your efficiency in providing patient care

95% of SPs reported that the PA had a positive impact on the SP's efficiency in providing care. This was the case for 100% of the SPs supervising formally trained PAs and 91% of the SPs with IMGs.

There was no statistically significant difference in the results between the two streams.

Exhibit 68:   SP Perception of Impact of PA on SP Efficiency in Providing Care by Stream of PA Supervised

PA Stream	Responses	% Distribution of SP Perception of Impact of PA						% Very Pos. or Pos.
		Very Positive	Positive	Neither Pos. or Neg.	Negative	Very Negative	Don't Know /NA	
IMG	23	43%	48%	9%	0%	0%	0%	91%
PA	18	50%	50%	0%	0%	0%	0%	100%
Grand Total	41	46%	49%	5%	0%	0%	0%	95%

More than 90% SPs in all clinical areas except CCC/palliative reported a positive impact of the PA on their efficiency in providing care.

Exhibit 69: SP Perception of Impact of PA on SP Efficiency in Providing Care by Clinical Area

Clinical Area	Responses	% Distribution of SP Perception of Impact of PA						% Very Pos. or Pos.
		Very Positive	Positive	Neither Pos. or Neg.	Negative	Very Negative	Don't Know /NA	
1 Medicine	16	25%	69%	6%	0%	0%	0%	94%
2 Surgery	8	63%	38%	0%	0%	0%	0%	100%
3 CCC/Palliative	3	33%	33%	33%	0%	0%	0%	67%
4 Emergency	5	60%	40%	0%	0%	0%	0%	100%
Hospital Subtotal	**32**	**41%**	**53%**	**6%**	**0%**	**0%**	**0%**	**94%**
5 CHC	4	75%	25%	0%	0%	0%	0%	100%
6 Diabetes	2	100%	0%	0%	0%	0%	0%	100%
7 LTC	3	33%	67%	0%	0%	0%	0%	100%
PEPA Subtotal	**5**	**60%**	**40%**	**0%**	**0%**	**0%**	**0%**	**100%**
Grand Total	**41**	**46%**	**49%**	**5%**	**0%**	**0%**	**0%**	**95%**

The majority of the SPs in the small hospitals and the non-hospital demonstration sites reported a "very positive" impact of the PA on their efficiency.

Exhibit 70:   SP Perception of Impact of PA on SP Efficiency in Providing Care by Teaching Status/Hospital Size

		\% Distribution of SP Perception of Impact of PA						
Teaching Status	Responses	Very Positive	Positive	Neither Pos. or Neg.	Negative	Very Negative	Don't Know /NA	\% Very Pos. or Pos.
1 Teaching	7	29%	71%	0%	0%	0%	0%	100%
2 Comm. Large	16	38%	56%	6%	0%	0%	0%	94%
3 Comm. Small	6	67%	33%	0%	0%	0%	0%	100%
4 CCC/Palliative	3	33%	33%	33%	0%	0%	0%	67%
5 Non-Hospital	9	67%	33%	0%	0%	0%	0%	100%
Grand Total	41	46%	49%	5%	0%	0%	0%	95%

Please rate the impact that the PA has had on the quality of your worklife.

Almost 90% of all SPs reported that there was a positive impact of the introduction of the PA on the quality of their work life.

Exhibit 71:   SP Perception of Impact of PA on Quality of SP Work Life by Stream of PA Supervised

		\% Distribution of SP Perception of Impact of PA						
PA Stream	Responses	Very Positive	Positive	Neither Pos. or Neg.	Negative	Very Negative	Don't Know /NA	\% Very Pos. or Pos.
IMG	23	48%	43%	9%	0%	0%	0%	91%
PA	18	39%	50%	11%	0%	0%	0%	89%
Grand Total	41	44%	46%	10%	0%	0%	0%	90%

All of the SPs in the non-hospital demonstration sites reported a positive impact of the PA on the quality of their worklife. Within the hospital sites, all of the SPs in Surgery reported a positive impact.

Exhibit 72:   SP Perception of Impact of PA on Quality of SP Work Life by Clinical Area

The Quality of Supervising Physician Work Life							
Clinical Area	Responses	% Distribution of SP Perception of Impact of PA					
		Very Positive	Positive	Neither Pos. or Neg.	Negative	Very Negative	Don't Know /NA	% Very Pos. or Pos.
1 Medicine	16	44%	44%	13%	0%	0%	0%	88%
2 Surgery	8	63%	38%	0%	0%	0%	0%	100%
3 CCC/Palliative	3	33%	33%	33%	0%	0%	0%	67%
4 Emergency	5	60%	20%	20%	0%	0%	0%	80%
Hospital Subtotal	**32**	**50%**	**38%**	**13%**	**0%**	**0%**	**0%**	**88%**
5 CHC	4	25%	75%	0%	0%	0%	0%	100%
6 Diabetes	2	0%	100%	0%	0%	0%	0%	100%
7 LTC	3	33%	67%	0%	0%	0%	0%	100%
PEPA Subtotal	**5**	**20%**	**80%**	**0%**	**0%**	**0%**	**0%**	**100%**
Grand Total	**41**	**44%**	**46%**	**10%**	**0%**	**0%**	**0%**	**90%**

All of the SPs in the small community hospitals reported a positive impact of the PA on the quality of their work life, and two thirds categorized this impact as "very positive".

Exhibit 73:   SP Perception of Impact of PA on Quality of SP Work Life by Teaching Status/Hospital Size

The Quality of Supervising Physician Work Life							
Teaching Status	Responses	% Distribution of SP Perception of Impact of PA					
		Very Positive	Positive	Neither Pos. or Neg.	Negative	Very Negative	Don't Know /NA	% Very Pos. or Pos.
1 Teaching	7	43%	43%	14%	0%	0%	0%	86%
2 Comm. Large	16	50%	38%	13%	0%	0%	0%	88%
3 Comm. Small	6	67%	33%	0%	0%	0%	0%	100%
4 CCC/Palliative	3	33%	33%	33%	0%	0%	0%	67%
5 Non-Hospital	9	22%	78%	0%	0%	0%	0%	100%
Grand Total	41	44%	46%	10%	0%	0%	0%	90%

Please rate the impact that the PA has had on the time that you have available to supervise learners such as students

Statistically Significant Difference between PA Streams; SPs of IMGs Report More Time Available to Supervise Learners

A potential negative impact of introducing PAs could be a reduction in the time available by SPs to supervise learners (e.g. medical students). Only 2% of SPs reported a negative impact, but 17% of SPs reported that they either did not know, or it was not applicable in their organization. The majority of SPs reported a positive impact, with two thirds of SPs of IMGs reporting a positive impact. This was one of the few impacts where there was a statistically

significant difference between the results for PAs in the IMG stream versus the formally trained PA stream.

Exhibit 74: SP Perception of Impact of PA on SP Time to Supervise Learners by Stream of PA Supervised

		% Distribution of SP Perception of Impact of PA						
The time SP has available to supervise learners, such as medical students								
PA Stream	Responses	Very Positive	Positive	Neither Pos. or Neg.	Negative	Very Negative	Don't Know /NA	% Very Pos. or Pos.
IMG	23	30%	35%	9%	4%	0%	22%	65%
PA	18	28%	17%	44%	0%	0%	11%	44%
Grand Total	41	29%	27%	24%	2%	0%	17%	56%

SPs in Surgery were most likely to report a positive impact (86%), while only 20% of ED SPs reported a positive impact.

Exhibit 75:   SP Perception of Impact of PA on SP Time to Supervise Learners by Clinical Area

		% Distribution of SP Perception of Impact of PA						
The time SP has available to supervise learners, such as medical students								
Clinical Area	Responses	Very Positive	Positive	Neither Pos. or Neg.	Negative	Very Negative	Don't Know /NA	% Very Pos. or Pos.
1 Medicine	16	6%	56%	19%	6%	0%	13%	63%
2 Surgery	8	75%	13%	0%	0%	0%	13%	88%
3 CCC/Palliative	3	33%	0%	33%	0%	0%	33%	33%
4 Emergency	5	20%	0%	60%	0%	0%	20%	20%
Hospital Subtotal	**32**	**28%**	**31%**	**22%**	**3%**	**0%**	**16%**	**59%**
5 CHC	4	50%	0%	25%	0%	0%	25%	50%
6 Diabetes	2	0%	0%	50%	0%	0%	50%	0%
7 LTC	3	33%	33%	33%	0%	0%	0%	67%
PEPA Subtotal	**5**	**20%**	**20%**	**40%**	**0%**	**0%**	**20%**	**40%**
Grand Total	**41**	**29%**	**27%**	**24%**	**2%**	**0%**	**17%**	**56%**

SPs in small community hospitals were most likely to report a positive impact on the time that they had available to spend with learners.

Exhibit 76: SP Perception of Impact of PA on SP Time to Supervise Learners by Teaching Status/Hospital Size

The time SP has available to supervise learners, such as medical students								
Teaching Status	Responses	% Distribution of SP Perception of Impact of PA						
		Very Positive	Positive	Neither Pos. or Neg.	Negative	Very Negative	Don't Know /NA	% Very Pos. or Pos.
1 Teaching	7	14%	43%	14%	14%	0%	14%	57%
2 Comm. Large	16	31%	31%	25%	0%	0%	13%	63%
3 Comm. Small	6	33%	33%	17%	0%	0%	17%	67%
4 CCC/Palliative	3	33%	0%	33%	0%	0%	33%	33%
5 Non-Hospital	9	33%	11%	33%	0%	0%	22%	44%
Grand Total	41	29%	27%	24%	2%	0%	17%	56%

Results from Final Survey/Interview – Sustainability

Many of the questions in the SP interviews focused on assessing the degree of support of supervising physicians for introduction of the PAs, and the potential sustainability of the PA model in the future. The interview questions addressed:

- Impact on recruitment and retention of physicians
- Number of PAs that one SP could supervise
- Requirements for stipends for supervision and impacts on SP incomes
- Satisfaction with PA and support for ongoing employment of PAs in Ontario

Results from the final SP interviews are presented in the remaining section of this appendix.

Please rate the impact that the PA has had on recruitment and retention of physicians to the organization in the future

SPs of PAs from the PA Stream Significantly More Likely to Report Positive Impact on Future Recruitment and Retention of Physicians

The majority of SPs believe that the introduction of a PA in their organization would have a positive impact on the recruitment and retention of physicians in the future. No SPs reported a negative impact. SPs supervising formally trained PAs were more likely to report a positive impact (67%) compared to SPs supervising IMGs (43%). This difference was statistically significant.

Exhibit 77: SP Perception of Impact of PA on Physician Recruitment and Retention by Stream of PA Supervised

	Responses	Very Positive	Positive	Neither Pos. or Neg.	Negative	Very Negative	Don't Know /NA	% Very Pos. or Pos.
Recruitment and retention of physicians to the Organization in the future								
PA Stream		% Distribution of SP Perception of Impact of PA						
IMG	23	22%	22%	48%	0%	0%	9%	43%
PA	18	22%	44%	28%	0%	0%	6%	67%
Grand Total	41	22%	32%	39%	0%	0%	7%	54%

All of the SPs in the PEPA demonstration sites reported that the addition of a PA would have a positive impact on physician recruitment and retention, whereas none of the SPs working in CCC/Palliative care reported a positive impact. In the hospital sites, the most positive impact was anticipated by Surgery SPs.

Exhibit 78: SP Perception of Impact of PA on Physician Recruitment and Retention by Clinical Area

	Responses	Very Positive	Positive	Neither Pos. or Neg.	Negative	Very Negative	Don't Know /NA	% Very Pos. or Pos.
Recruitment and retention of physicians to the Organization in the future								
Clinical Area		% Distribution of SP Perception of Impact of PA						
1 Medicine	16	31%	13%	50%	0%	0%	6%	44%
2 Surgery	8	25%	50%	13%	0%	0%	13%	75%
3 CCC/Palliative	3	0%	0%	67%	0%	0%	33%	0%
4 Emergency	5	0%	60%	40%	0%	0%	0%	60%
Hospital Subtotal	**32**	**22%**	**28%**	**41%**	**0%**	**0%**	**9%**	**50%**
5 CHC	4	0%	25%	75%	0%	0%	0%	25%
6 Diabetes	2	50%	50%	0%	0%	0%	0%	100%
7 LTC	3	33%	67%	0%	0%	0%	0%	100%
PEPA Subtotal	**5**	**40%**	**60%**	**0%**	**0%**	**0%**	**0%**	**100%**
Grand Total	**41**	**22%**	**32%**	**39%**	**0%**	**0%**	**7%**	**54%**

Only one quarter of SPs working in CHCs anticipated a positive impact of the PA on physician recruitment and retention.

SPs in large community hospitals were most likely to report a positive impact of the PA on physician recruitment and retention. No SPs in the small community hospitals reported a very positive (as opposed to just positive) impact.

Exhibit 79: SP Perception of Impact of PA on Physician Recruitment and Retention by Teaching Status/Hospital Size

Teaching Status	Responses	% Distribution of SP Perception of Impact of PA						% Very Pos. or Pos.
		Very Positive	Positive	Neither Pos. or Neg.	Negative	Very Negative	Don't Know /NA	
1 Teaching	7	14%	14%	43%	0%	0%	29%	29%
2 Comm. Large	16	38%	31%	31%	0%	0%	0%	69%
3 Comm. Small	6	0%	50%	50%	0%	0%	0%	50%
4 CCC/Palliative	3	0%	0%	67%	0%	0%	33%	0%
5 Non-Hospital	9	22%	44%	33%	0%	0%	0%	67%
Grand Total	41	22%	32%	39%	0%	0%	7%	54%

Recruitment and retention of physicians to the Organization in the future

From a supervisory perspective, do you think that it is feasible for a physician to be the primary supervising physician for more than 1 PA? If yes, what would be the maximum number of PAs?

While during the demonstration projects, each primary supervising physician was assigned a single PA, the SPs were asked how many PAs they thought an SP could supervise. Most SPs reported that supervision of 2 PAs would be the maximum, but some SPs felt more could be supervised, particularly in the hospital setting.

Exhibit 80: SP Identification of Maximum # of PAs That Could be Supervised by One SP

Demonstration Type	Distribution of SP Response re Maximum Number of PAs That Could be Supervised by One SP				
	1	2	3	4	5
1 Hospital	5	19	5	1	1
2 CHC	1	2	-	-	-
3 PEPA	-	4	-	1	-
Grand Total	6	25	5	2	1
% of Responses	15%	64%	13%	5%	3%

If you had not received a supervisory stipend, what would the impact on your income have been?

SPs received a supervisory stipend to cover potential lost income due to their supervisory role. The SPs (except those working in CHCs) were asked "If you had not received a supervisory stipend, what would the impact on your income have been?" 54% of all SPs reported that there would have been no impact on their income if a supervisory stipend had not been provided. There was no statistically significant differences between SPs supervising PAs in the IMG stream versus SPs supervising formally trained PAs.

Exhibit 81: SP Identification of Impact on Their Income if Supervisory Stipend Had Not Been Provided by PA Stream

If SP had not received a supervisory stipend, what would the impact on the SP income have been?								
PA Stream	Responses	% Distribution of SP Perception of Impact						
		Very Positive	Positive	Neither Pos. or Neg.	Negative	Very Negative	Don't Know /NA	% Very Neg. or Neg.
IMG	21	0%	0%	52%	48%	0%	0%	48%
PA	16	0%	0%	56%	31%	6%	6%	38%
Grand Total	37	0%	0%	54%	41%	3%	3%	43%

SPs working in Medicine were the most likely to report a negative impact on their income in the absence of a supervisory stipend.

Exhibit 82: SP Identification of Impact on Their Income if Supervisory Stipend Had Not Been Provided By Clinical Area

If SP had not received a supervisory stipend, what would the impact on the SP income have been?								
Clinical Area	Responses	% Distribution of SP Perception of Impact						
		Very Positive	Positive	Neither Pos. or Neg.	Negative	Very Negative	Don't Know /NA	% Very Neg. or Neg.
1 Medicine	16	0%	0%	44%	56%	0%	0%	56%
2 Surgery	8	0%	0%	63%	38%	0%	0%	38%
3 CCC/Palliative	3	0%	0%	100%	0%	0%	0%	0%
4 Emergency	5	0%	0%	60%	40%	0%	0%	40%
Hospital Subtotal	**32**	**0%**	**0%**	**56%**	**44%**	**0%**	**0%**	**44%**
6 Diabetes	2	0%	0%	0%	50%	50%	0%	100%
7 LTC	3	0%	0%	67%	0%	0%	33%	0%
PEPA Subtotal	**5**	**0%**	**0%**	**40%**	**20%**	**20%**	**20%**	**40%**
Grand Total	**37**	**0%**	**0%**	**54%**	**41%**	**3%**	**3%**	**43%**

None of the SPs working in small community hospitals reported a negative impact on their income if a supervisory stipend had not been provided. SPs working in teaching hospitals and in large

community hospitals were most likely to report a negative impact on their income.

Exhibit 83: **SP Identification of Impact on Their Income if Supervisory Stipend Had Not Been Provided by Teaching Status/Hospital Size**

If SP had not received a supervisory stipend, what would the impact on the SP income have been?								
		% Distribution of SP Perception of Impact						
Teaching Status	Responses	Very Positive	Positive	Neither Pos. or Neg.	Negative	Very Negative	Don't Know /NA	% Very Neg. or Neg.
1 Teaching	7	0%	0%	29%	71%	0%	0%	71%
2 Comm. Large	16	0%	0%	44%	56%	0%	0%	56%
3 Comm. Small	6	0%	0%	100%	0%	0%	0%	0%
4 CCC/Palliative	3	0%	0%	100%	0%	0%	0%	0%
5 Non-Hospital	5	0%	0%	40%	20%	20%	20%	40%
Grand Total	37	0%	0%	54%	41%	3%	3%	43%

With the stipend, what has been the impact on your income?

Significantly More Supervisors of IMGs Reported Positive Impact on Income with Supervisory Stipend

While the analysis in the previous section showed the SP opinion of the impact of PA supervision on their income if no supervisory stipend had been provided, the SPs were also asked about the actual net impact on their income, taking into account the stipend that they received. 62% of SPs reported a net positive impact on their income taking into account the stipend, and 35% no impact. Supervisors of IMGs were more likely to report a positive impact, and this difference between streams was statistically significant.

Exhibit 84: **SP Identification of Net Impact on Their Income with the Supervisory Stipend by PA Stream**

With the stipend, what has been the impact on SP income?								
		% Distribution of SP Perception of Impact						
PA Stream	Responses	Very Positive	Positive	Neither Pos. or Neg.	Negative	Very Negative	Don't Know /NA	% Very Pos. or Pos.
IMG	21	0%	71%	29%	0%	0%	0%	71%
PA	16	6%	44%	44%	0%	0%	6%	50%
Grand Total	37	3%	59%	35%	0%	0%	3%	62%

In the hospital demonstration sites, SPs in Medicine were least likely to report a positive net impact on their income. SPs in CCC/palliative care and in the ED sites were most likely to report a positive net impact on their income.

Exhibit 85:   SP Identification of Net Impact on Their Income with the Supervisory Stipend by Clinical Area

With the stipend, what has been the impact on SP income?							
Clinical Area	Responses	% Distribution of SP Perception of Impact					
		Very Positive	Positive	Neither Pos. or Neg.	Negative	Very Negative	Don't Know /NA	% Very Pos. or Pos.
1 Medicine	16	0%	56%	44%	0%	0%	0%	56%
2 Surgery	8	0%	63%	38%	0%	0%	0%	63%
3 CCC/Palliative	3	0%	100%	0%	0%	0%	0%	100%
4 Emergency	5	0%	80%	20%	0%	0%	0%	80%
Hospital Subtotal	**32**	**0%**	**66%**	**34%**	**0%**	**0%**	**0%**	**66%**
6 Diabetes	2	0%	0%	100%	0%	0%	0%	0%
7 LTC	3	33%	33%	0%	0%	0%	33%	67%
PEPA Subtotal	**5**	**20%**	**20%**	**40%**	**0%**	**0%**	**20%**	**40%**
Grand Total	**37**	**3%**	**59%**	**35%**	**0%**	**0%**	**3%**	**62%**

Within the acute care hospitals, SPs at small community hospitals were more likely to report a positive impact on their overall income.

Exhibit 86:   SP Identification of Net Impact on Their Income with the Supervisory Stipend by Teaching Status/Hospital Size

With the stipend, what has been the impact on SP income?							
Teaching Status	Responses	% Distribution of SP Perception of Impact					
		Very Positive	Positive	Neither Pos. or Neg.	Negative	Very Negative	Don't Know /NA	% Very Pos. or Pos.
1 Teaching	7	0%	57%	43%	0%	0%	0%	57%
2 Comm. Large	16	0%	63%	38%	0%	0%	0%	63%
3 Comm. Small	6	0%	67%	33%	0%	0%	0%	67%
4 CCC/Palliative	3	0%	100%	0%	0%	0%	0%	100%
5 Non-Hospital	5	20%	20%	40%	0%	0%	20%	40%
Grand Total	37	3%	59%	35%	0%	0%	3%	62%

What level of annual stipend, if any, would you require at the conclusion of the demonstration project to keep working with a PA?

Supervising physicians were asked what level of annual supervisory stipend (if any) they would require at the conclusion of the project to keep working with a PA.

This was an open ended question, asked to supervisors in the **hospital demonstration** and **PEPA projects** only (n=37). For

purposes of analysis, responses were classified as none, less, same & more, assuming a $24,000 annual stipend.

Overall, 46% of supervising physicians that were interviewed stated that they did not require a stipend to continue working with a PA or required less than what they were currently receiving. Only 16% of physicians stated that they needed *more* than what was currently being provided.

SPs of Formally Trained PAs Significantly More Likely to Report Reduced Requirement for Stipend

Supervisors of formally trained PAs were statistically significantly more likely to respond that they did not require a stipend or required less than what they were currently receiving.

Exhibit 87:   Level of Stipend Required by SP by PA Stream

Level of Stipend (Interview 3 results, Hospitals and PEPA)						
Stream	None	Less	Same	More	Don't Know/ Not Applic,	% None or Less
IMG	7		9	4	1	33%
PA	5	5	4	2		63%

Supervising Physicians in ED were most likely to respond that they did not require a stipend or required less than what they were currently receiving. However, these differences are not statistically significant due to the small sample size.

Exhibit 88:   Level of Stipend Required by Clinical Area

Level of Stipend (Interview 3 results, Hospitals and PEPA)						
Clinical Area	None	Less	Same	More	Don't Know/ Not Applic,	% None or Less
Medicine	6	1	5	3	1	44%
Surgery	4		3	1		50%
CCC/Palliative		1	2			33%
Emergency	1	3	1			80%
Diabetes			1	1		0%
LTC	1		1	1		33%

Within the hospital environment, Supervising Physicians in EDs were more likely to respond that they did not require a stipend or required less than what they were currently receiving.

Exhibit 89:   Level of Stipend Required by Clinical Setting

Level of Stipend (Interview 3 results, Hospitals)						
Clinical Area	None	Less	Same	More	Don't Know/ Not Applic,	% None or Less
ED	1	3	1			80%
In-patient	10	2	10	4	1	44%

Supervising Physicians at teaching sites were more likely to respond that they did not require a stipend or required less than what they were currently receiving.

Exhibit 90: Level of Stipend Required by Teaching Status/Hospital Size

Level of Stipend (Interview 3 results, Hospitals and PEPA)						
Teaching Status	None	Less	Same	More	Don't Know/ Not Applic,	% None or Less
Teaching	5			1	1	71%
Comm. Large	5	2	6	3		44%
Comm. Small	1	2	3			50%
CCC/Palliative		1	2			33%
Non-Hospital	1		2	2		20%

It should be noted that some supervising physicians provided caveats/clarifications to their response. Broad themes are presented below:

- Would require large amounts up front and then none (1) /same (2)

- Would not take PA if government paid only 50% of PA salary (1)

- Same, if PA is unlicensed. Otherwise no stipend needed (1)

- Same, current amount is generous (1)

- Less (3)/None (2), if it is the same PA, more if it is a new PA

- Less (2)/None (3), if PAs are fully functioning.

- None, if it is same PA, same if it is a new PA (1)

- None, bonus is nice to have but not necessary (2)

- Don't Know, depends on PA competency and turnover (1)

- Don't Know, would not factor into decision making (1)

How satisfied were you with your PA?

Supervising physicians were asked how satisfied they were with their PA, using a scale ranging from "very satisfied" to "very dissatisfied". None of the SPs reported dissatisfaction with their PAs. Supervisors of formally trained PAs were more likely to report satisfaction with their PA (94%) than supervisors of IMGs (83%), but this difference is not statistically significant.

Exhibit 91: Satisfaction of Supervising Physicians with their PA by PA Stream

How satisfied is the Supervising Physician with Their PA?								
PA Stream	Responses	% Distribution of SP Responses						
		Very Satisfied	Satisfied	Neither Sat. or Dissat.	Dis-satisfied	Very Dis-Satisfied	Don't Know /NA	% Very Sat. or Sat.
IMG	23	61%	22%	17%	0%	0%	0%	83%
PA	18	56%	39%	6%	0%	0%	0%	94%
Grand Total	41	59%	29%	12%	0%	0%	0%	88%

All of the SPs in the PEPA reported that they were very satisfied with their PA. SPs in the CHCs and Surgery all reported satisfaction. The least satisfied SPs were those in CCC/palliative care.

Exhibit 92: Satisfaction of Supervising Physicians with their PA by Clinical Area

How satisfied is the Supervising Physician with Their PA?								
Clinical Area	Responses	% Distribution of SP Responses						
		Very Satisfied	Satisfied	Neither Sat. or Dissat.	Dis-satisfied	Very Dis-Satisfied	Don't Know /NA	% Very Sat. or Sat.
1 Medicine	16	56%	31%	13%	0%	0%	0%	88%
2 Surgery	8	75%	25%	0%	0%	0%	0%	100%
3 CCC/Palliative	3	33%	0%	67%	0%	0%	0%	33%
4 Emergency	5	60%	20%	20%	0%	0%	0%	80%
Hospital Subtotal	**32**	**59%**	**25%**	**16%**	**0%**	**0%**	**0%**	**84%**
5 CHC	4	50%	50%	0%	0%	0%	0%	100%
6 Diabetes	2	50%	50%	0%	0%	0%	0%	100%
7 LTC	3	67%	33%	0%	0%	0%	0%	100%
PEPA Subtotal	**5**	**60%**	**40%**	**0%**	**0%**	**0%**	**0%**	**100%**
Grand Total	**41**	**59%**	**29%**	**12%**	**0%**	**0%**	**0%**	**88%**

All of the SPs in the small community hospitals reported that they were satisfied with their PA.

Exhibit 93: Satisfaction of Supervising Physicians with their PA by Teaching Status/Hospital Size

How satisfied is the Supervising Physician with Their PA?								
Teaching Status	Responses	% Distribution of SP Responses						
		Very Satisfied	Satisfied	Neither Sat. or Dissat.	Dis-satisfied	Very Dis-Satisfied	Don't Know /NA	% Very Sat. or Sat.
1 Teaching	7	57%	29%	14%	0%	0%	0%	86%
2 Comm. Large	16	63%	25%	13%	0%	0%	0%	88%
3 Comm. Small	6	67%	33%	0%	0%	0%	0%	100%
4 CCC/Palliative	3	33%	0%	67%	0%	0%	0%	33%
5 Non-Hospital	9	56%	44%	0%	0%	0%	0%	100%
Grand Total	41	59%	29%	12%	0%	0%	0%	88%

How strongly do you agree with the following statement: '"I hope to continue to work with a PA at the conclusion of the demonstration project"

SPs were asked whether they hoped to continue working with a PA after the conclusion of the demonstration project. More than 90% of SPs agreed that they would like to keep working with a PA, and almost two thirds strongly agreed with the statement. Supervisors of formally trained PAs were more likely to express the desire to keep working with a PA than supervisors of IMGs, but this difference was not statistically significant.

Exhibit 94: Desire of SPs to Continue Working with a PA by PA Stream

SP hope to continue to work with a PA after the conclusion of the demonstration project								
PA Stream	Responses	% Distribution of SP Responses						
		Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Don't Know /NA	% Strongly Agree or Agree
IMG	23	48%	39%	9%	4%	0%	0%	87%
PA	18	89%	11%	0%	0%	0%	0%	100%
Grand Total	41	66%	27%	5%	2%	0%	0%	93%

SPs in CCC/palliative were least likely to agree that they would like to continue working with a PA. 100% of PAs in Surgery, ED, and the non-hospital sites agreed that they would like to keep working with a PA.

Exhibit 95: Desire of SPs to Continue Working with a PA by Clinical Area

Clinical Area	Responses	% Distribution of SP Responses						
		Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Don't Know /NA	% Strongly Agree or Agree
1 Medicine	16	50%	44%	0%	6%	0%	0%	94%
2 Surgery	8	88%	13%	0%	0%	0%	0%	100%
3 CCC/Palliative	3	33%	0%	67%	0%	0%	0%	33%
4 Emergency	5	80%	20%	0%	0%	0%	0%	100%
Hospital Subtotal	**32**	**63%**	**28%**	**6%**	**3%**	**0%**	**0%**	**91%**
5 CHC	4	75%	25%	0%	0%	0%	0%	100%
6 Diabetes	2	50%	50%	0%	0%	0%	0%	100%
7 LTC	3	100%	0%	0%	0%	0%	0%	100%
PEPA Subtotal	**5**	**80%**	**20%**	**0%**	**0%**	**0%**	**0%**	**100%**
Grand Total	**41**	**66%**	**27%**	**5%**	**2%**	**0%**	**0%**	**93%**

SPs in small hospitals and non-hospital sites were most likely to strongly agree that they would like to keep working with a PA. SPs from the teaching hospitals were least likely to strongly agree, and one teaching hospital SP was the only respondent to disagree with the statement.

Exhibit 96: Desire of SPs to Continue Working with a PA by Teaching Status/Hospital Size

Teaching Status	Responses	% Distribution of SP Responses						
		Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Don't Know /NA	% Strongly Agree or Agree
1 Teaching	7	43%	43%	0%	14%	0%	0%	86%
2 Comm. Large	16	69%	31%	0%	0%	0%	0%	100%
3 Comm. Small	6	83%	17%	0%	0%	0%	0%	100%
4 CCC/Palliative	3	33%	0%	67%	0%	0%	0%	33%
5 Non-Hospital	9	78%	22%	0%	0%	0%	0%	100%
Grand Total	41	66%	27%	5%	2%	0%	0%	93%

How strongly do you agree with the following statement: "I would recommend working with a PA to a physician colleague of mine"

SPs of Formally Trained PAs Statistically Significantly More Likely to Recommend Working with a PA to a Physician Colleague

SPs were asked whether they would recommend working with a PA to their physician colleagues; 90% of SPs agreed that they would. Support for the statement was strongest by SPs supervising formally trained PAs, with 78% strongly agreeing and 100% agreeing. The difference between the two streams was statistically significant.

Exhibit 97: SP Willingness to Recommend Working with a PA to Physician Colleagues by PA Stream

SP would recommend working with a PA to a physician colleague								
PA Stream	Responses	% Distribution of SP Responses						
		Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Don't Know /NA	% Strongly Agree or Agree
IMG	23	57%	26%	17%	0%	0%	0%	83%
PA	18	78%	22%	0%	0%	0%	0%	100%
Grand Total	41	66%	24%	10%	0%	0%	0%	90%

All of the SPs in non-hospital sites and in the ED agreed that they would recommend working with a PA to a colleague.

Exhibit 98: SP Willingness to Recommend Working with a PA to Physician Colleagues by Clinical Area

SP would recommend working with a PA to a physician colleague								
Clinical Area	Responses	% Distribution of SP Responses						
		Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Don't Know /NA	% Strongly Agree or Agree
1 Medicine	16	50%	44%	6%	0%	0%	0%	94%
2 Surgery	8	75%	13%	13%	0%	0%	0%	88%
3 CCC/Palliative	3	33%	0%	67%	0%	0%	0%	33%
4 Emergency	5	80%	20%	0%	0%	0%	0%	100%
Hospital Subtotal	**32**	**59%**	**28%**	**13%**	**0%**	**0%**	**0%**	**88%**
5 CHC	4	75%	25%	0%	0%	0%	0%	100%
6 Diabetes	2	100%	0%	0%	0%	0%	0%	100%
7 LTC	3	100%	0%	0%	0%	0%	0%	100%
PEPA Subtotal	**5**	**100%**	**0%**	**0%**	**0%**	**0%**	**0%**	**100%**
Grand Total	**41**	**66%**	**24%**	**10%**	**0%**	**0%**	**0%**	**90%**

All SPs in small community hospitals would recommend working with a PA.

Exhibit 99:   SP Willingness to Recommend Working with a PA to Physician Colleagues by Teaching Status/Hospital Size

		SP would recommend working with a PA to a physician colleague						
		% Distribution of SP Responses						
Teaching Status	Responses	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	Don't Know /NA	% Strongly Agree or Agree
1 Teaching	7	57%	29%	14%	0%	0%	0%	86%
2 Comm. Large	16	56%	38%	6%	0%	0%	0%	94%
3 Comm. Small	6	83%	17%	0%	0%	0%	0%	100%
4 CCC/Palliative	3	33%	0%	67%	0%	0%	0%	33%
5 Non-Hospital	9	89%	11%	0%	0%	0%	0%	100%
Grand Total	41	66%	24%	10%	0%	0%	0%	90%

Summary of Feedback re PA Impact on Supervising Physicians

SPs in small community hospitals and those supervising PAs in the surgery area reported highest positive impact.

From an overall perspective, within the hospital environment, supervising physicians of PAs in small community organizations and those supervising PAs in the surgery area most frequently reported the highest positive impact on physician practice.

The only areas where there were statistically significant differences in results between groups were for PA streams:

- 65% of SPs supervising PAs in the IMG stream reported they had more time available to supervise learners, versus 44% of SPs supervising formally trained PAs

- 43% of SPs supervising PAs in the IMG stream reported a positive impact on recruitment and retention of physicians in the future, versus 67% of SPs supervising formally trained PAs

- 71% of SPs supervising PAs in the IMG stream reported a positive impact on their income (including the stipend), versus 50% of SPs supervising formally trained PAs

- 33% of SPs supervising PAs in the IMG stream reported that they would be willing to continue with a reduced stipend, versus 63% of SPs supervising formally trained PAs

Positive impact on SP quality of life and recruitment and retention.

Most physicians reported a positive impact on their work life (90%) and 54% of supervising physicians also believed that the presence of a PA would have a positive impact on the recruitment and retention of physicians to the organization in the future.

Positive impact on physician practice offset need for supervisory stipend

Although 43% of supervising physicians reported that there would have been a negative impact on their income had they not received a supervisory stipend, 32% of supervising physicians stated that they required no stipend to work with a PA, while 14% stated that they would require less than what they were currently receiving. It should be noted that many of the SPs reported that their requirement for a supervisory stipend was very dependent on the experience and capabilities of the PA they are supervising.

Technical Appendix D –Findings from Administrative Interviews

Administrative representatives were asked to participate in two interviews over the course of the initial 2 year demonstration project. Based on analysis of results from the first interview and feedback from the Evaluation Subcommittee, the second administrative interview was modified to be much more structured and included mostly closed ended questions to facilitate analysis of results.

Presented below are the detailed results of the closed ended questions asked in the administrative interviews. As described in the text of the report the focus of analysis is results of the final (i.e. second) interview with participants.

Also presented in this appendix, where the survey question is not presented in the table itself is the specific question that was asked in administrative interviews.

Distribution of Interview Participants

Distribution of Administrative Interviewees and Involvement in Project Activities

The distribution of administrative interviewees by job title is shown below.

Exhibit 100: Distribution of Administrative Interviewees by Job Title

Interviewee Title	# of Interviews		
	Hospital	CHC	LTC
Clinical Director/Mgr.	17	0	1
Other Admin.	3	4	2
Medical Admin.	8	0	0
CNO/Prof. Practice	4	0	1
CEO/Executive Dir.	1	1	0
Grand Total	33	5	4

Many of the administrative interviewees were directly involved in the demonstration project. The exhibit below shows the percent of interviewees that indicated that they had been involved in specific project activities.

Exhibit 101: Administrative Interviewees Involvement in Project Activities

1. As a participant in the PA demonstration project, in which of the following activities were you involved?			
Activities Identified by Interviewer	% of Interviewees Reporting Yes		
	Hospital	CHC	LTC
Initial proposal submission/project start-up	58%	60%	0%
Involved in recruitment/selection	64%	80%	0%
Project lead/liaison	67%	80%	50%
Administrative work related to PA project	73%	100%	25%
PA orientation	64%	100%	0%
Helped define and educate staff about role	70%	100%	50%
Worked on medical directives	73%	0%	75%
PA worked on my service/provided clinical oversight	55%	20%	75%
Indirect involvement	9%	20%	0%

Results from Final Survey/Interview

Positive Impacts of PA – Administrative Perspective

Administrative interviewees were asked to identify the positive impacts on their organization of employing a PA, and many reported an impact that directly affects patients. Most of these impacts were also identified during the SP interviews.

Exhibit 102: Administrative Interviewee Identification of Positive Impacts of Employing PAs

2.What have been the positive impacts on your organization of employing PAs?			
Impacts Identified by Interviewer	**% of Interviewees Reporting Yes**		
	Hospital	CHC	LTC
Helped physicians manage workload	100%	100%	75%
Reduced wait times	61%	100%	100%
Improved patient flow	73%	60%	NA
Ability to manage larger patient volume	61%	80%	NA
Facilitates continuity of care	79%	60%	75%
Increased face to face time that patients have with medical staff	82%	80%	100%
Improved communication amongst team	79%	40%	NA
More timely discharge of patients	58%	NA	NA
Opportunity for emphasis on Chronic Disease Management/ Health Promotion	NA	60%	NA

Administrative interviewees also identified improved communication with families as a benefit of adding the PAs (reported by 76% of hospital respondents, 75% of LTC respondents and 60% of CHC respondents). LTC administrators also cited improved RN access to medical staff as a benefit of having PAs at their facility.

Hospital respondents were also asked whether there had been a change in the number of other staff working on the patient care unit in conjunction with the introduction of the PA. None of the respondents reported a change. A majority of respondents from the hospitals, CHCs and LTC anticipated a positive impact on physician recruitment and retention.

Exhibit 103:   Administrative Interview Respondents Identification of Other Impacts of Introduction of the PA

Other Impacts			
Impacts Identified by Interviewer	% of Interviewees Reporting Yes		
	Hospital	CHC	LTC
Has employing a PA changed the number of staff working on the unit(s)?*	0%	NA	NA
Has there been a positive impact on recruitment of physicians to the particular hospital unit/area*	63%	60%	75%
Has there been a positive impact on the retention of physicians to the particular hospital unit/area*	64%	60%	75%
Would you recommend that your organization continue to employ PAs at the conclusion of the demonstration project?	85%	100%	100%

Impact on Learners – Administrative Perspective

Because of concern about the potential impact of introduction of PAs on learners, the project steering committee asked that the participants in the administrative interviews be specifically asked about the impact. There was concern that if PAs assumed more responsibility for less complex patients it might reduce the exposure of other learners (particularly medical students) to these less complex patients. A majority of interviewees reported a positive impact, particularly in the CHC environment. No interviewees reported that the introduction of a PA had reduced the exposure of other trainees to an appropriate range of patients. A majority of interviewees reported a positive impact on opportunity for collaboration and shared learning.

Exhibit 104: Administrative Interview Feedback re Impact on Learners

<table>
<tr><td colspan="4">4.What has been the impact on medical and other health professional trainees?</td></tr>
<tr><td rowspan="2">Impacts Identified by Interviewer</td><td colspan="3">% of Interviewees Reporting Yes</td></tr>
<tr><td>Hospital</td><td>CHC</td><td>LTC</td></tr>
<tr><td>Positive Impact</td><td>70%</td><td>80%</td><td>NA</td></tr>
<tr><td>Opportunity to work with other health professionals</td><td>55%</td><td>80%</td><td>NA</td></tr>
<tr><td>Allows them to see more complex cases while PA sees routine/less complex cases</td><td>55%</td><td>20%</td><td>NA</td></tr>
<tr><td>Decreases administrative tasks that residents had to complete (dictation of notes etc.)</td><td>24%</td><td>20%</td><td>NA</td></tr>
<tr><td>Opportunity for collaboration and shared learning</td><td>67%</td><td>60%</td><td>NA</td></tr>
<tr><td>Reduced clinical exposure to appropriate range of patients</td><td>0%</td><td>0%</td><td>NA</td></tr>
<tr><td>Reduced supervision time available to medical and other health professional trainees</td><td>3%</td><td>0%</td><td>NA</td></tr>
</table>

Administrative Support for PA Role

Interviewees were asked whether they would recommend that their organization continue to employ PAs at the conclusion of the demonstration project and 85% of hospital respondents and 100% of CHC and PEPA respondents said yes.

Exhibit 105: Administrator's Recommendation for Ongoing Use of PA

<table>
<tr><td colspan="4">Organization Continue to Hire PAs</td></tr>
<tr><td rowspan="2">Impacts Identified by Interviewer</td><td colspan="3">% of Interviewees Reporting Yes</td></tr>
<tr><td>Hospital</td><td>CHC</td><td>LTC</td></tr>
<tr><td>Would you recommend that your organization continue to employ PAs at the conclusion of the demonstration project?</td><td>85%</td><td>100%</td><td>100%</td></tr>
</table>

The following table shows the factors the respondents identified that would most impact this decision. All of the CHC and PEPA respondents and 94% of the hospital respondents indicated that ongoing funding of the PAs would be required.

Exhibit 106:   Factors Most Influencing Decision Whether to
Recommend Continuing to Employ a PA

5. What factors would most influence your recommendation? Please select all that apply:			
Factors Identified by Interviewer	% of Interviewees Reporting Yes		
	Hospital	CHC	LTC
Has helped manage volumes and reduce wait times	67%	100%	NA
Improved communication with families	76%	60%	75%
Improved communication in the team	70%	40%	NA
Improved continuity of care	70%	80%	75%
Improved patient flow	67%	80%	NA
Require ongoing funding	94%	100%	100%
PA role should be regulated	88%	80%	75%
Require formally trained PAs/those who have chosen this as a profession	55%	60%	75%
Not a good fit in the specific clinical area	18%	0%	NA

Challenges – Administrative Perspective

Participants in the administrative interviews were asked to describe some of the challenges encountered by their organization as a result of participating in the demonstration project. The most frequently reported challenge (100% of CHCs, 79% of hospital respondents and 75% of LTC respondents) was the amount of work involved in developing and implementing medical directives. All of the CHCs and 67% of hospital respondents also identified the time and effort required for the project as a major challenge.

LTC and Hospital respondents were more likely than CHC respondents to identify the effort to integrate the PA role and the lack of role clarity as major challenges.

Exhibit 107:   Major Challenges Reported by Participants in Administrative Interviews

3.What have been some of the challenges for your organization of employing PAs?			
Challenges Identified by Interviewer	% of Interviewees Reporting Yes		
	Hospital	CHC	LTC
Time and effort required to get project of the ground	67%	100%	50%
Work involved in medical directives	79%	100%	75%
Effort to integrate new role into team	58%	20%	75%
PA education and orientation requirements	36%	20%	25%
Lack of role clarity	76%	20%	100%
Variability in PA skill level	55%	0%	NA
Adjustment to role and expectations for PAs moving from military to civilian environment	18%	0%	NA
Adjustment to role and expectations for IMGs	39%	20%	NA
Initial team conflict (e.g NP and PA)	24%	20%	25%

Additional Feedback – Administrative Perspective

The interviewee responses to the question "What do you know now that you wish you had known prior to the arrival of your PA?" referenced the overall workload, the effort required for medical directives, and the need for clarity re the PA role and the capabilities of their specific PA.

Exhibit 108:   Administrative Interviewee Responses to Question re "What Do They Wish They Had Known Before the Demonstration Project Started?"

6.What do you know now that you wish you had known prior to the arrival of your PA(s)?			
Factors Identified by Interviewer	% of Interviewees Reporting Yes		
	Hospital	CHC	LTC
Better understanding of role, scope and skill set of PA	42%	40%	75%
Work involved in developing medical directives	58%	80%	50%
Overall time commitment required for project	39%	40%	25%
Importance of team integration activities	36%	40%	75%
There were no surprises	21%	0%	0%

The interviewees emphasized the need for greater clarity re the PA role (and particularly the distinction between the PA and NP role), and the training and competencies of the individuals functioning in

the PA role, and the need for a framework to guide development of medical directives.

Exhibit 109: Administrative Interviewee Advice Re Further Introduction of the PA Role in Ontario

7.What changes, if any, would you like to see regarding the introduction of the PA role in Ontario?			
Changes Identified by Interviewer	% of Interviewees Reporting Yes		
	Hospital	CHC	LTC
Clarity around PA role, training and competencies	76%	60%	100%
Clarity between PA and NP roles	55%	60%	100%
Improved orientation for PA/SP	64%	20%	75%
Improved orientation for all team members impacted by introduction of PA role	55%	20%	75%
Greater assistance with communications, templates etc.	36%	20%	50%
Framework for medical directives	67%	80%	75%
Opportunity to share experiences and lessons learned with other sites	55%	40%	100%

Technical Appendix E – Themes from SP and PA Open-ended Questions

Theme Identification Criteria: At least 20% of interviewees reported this theme. When the highest response was less than 20% or when there were few themes identified at >20%, the next highest responses have been reported.

PA Tasks

Question for SP: What types of tasks did the PA perform most frequently (e.g. top five tasks)?

Question for PA: Please list the five tasks that you performed most frequently.

Themes from SPs

- History and Physical/ Pt. Assessment (78%)
- Investigations - order and follow up (41%)
- Discharge Planning (29%)
- In-patient Care/ Patient Follow up (29%)
- Communication with patients and families (24%)
- Dictation/Notes (20%)
- Communication with other team members (22%)
- Procedures (22%)

Themes from PAs

- Patient assessment/treatment (83%)
- Physical exams (65%)
- Ordering/ interpreting investigations (38%)
- Documentation/Dictation (35%)
- Patient Follow up (33%)
- Discharge Planning (33%)
- Patient education/ counselling (29%)
- Consults (27%)
- Procedures (25%)
- Rounds (21%)

Medical Directives – Authorized Tasks

Question for SP: What tasks was your PA authorized to do through medical directives?

Question for PA: What tasks were you authorized to do through medical directives?

Themes from SPs

Of those that responded to this question:

- Investigations (58%)
- History/ Physical Exams (50%)
- Procedures (28%)
- Prescriptions (28%)
- Assessments (25%)

Themes from PAs

Of those that responded to this question:

- Ordering/ interpreting investigations (72%)
- Patient assessment/treatment (72%)
- Physical exams (60%)
- Prescribing limited medications (47%)
- Procedures (33%)
- Consults/Referrals (23%)

Medical Directives – Tasks PA is Unable to Perform

Question for SP: Are there tasks you would have liked your PA to perform, but even if there were medical directives in place, he/she was not qualified to do?

Question for PA: Are there tasks that you felt you were qualified to perform in this practice setting, but were not given the opportunity to do?

Themes from SPs

For SPs who responded yes to this question, the following top two tasks were identified:

- Procedures (33%)
- Write prescriptions (17%)

Themes from PAs

For PAs who responded to this question[4], the following top two tasks were identified:

- Specific procedures (32%)
- Prescribing medications (29%)

The top two reasons provided for being unable to perform specific tasks were:

- Lack of medical directives (50%)
- Task was outside SP scope of practice (18%)

Medical Directives – Challenges

Question for SPs: What challenges did you experience in developing medical directives? What would you recommend to improve the process?

Question for PAs: From your perspective, what were some of the challenges in developing and approving medical directives? What would you recommend to improve the process?

Themes from SPs

90% of interviewees identified challenges.

For those that identified specific challenges:

- Time involved to develop/approve medical directives (38%)
- Lack of standard templates (35%)
- Acceptance from other professions (19%)

Suggestions for improvement included:

- Having a clear understanding of what PAs could do (11%)
- Need PA/admin who are willing to take time to develop directives (5%)
- Need better toolkit (3%)
- Teleconferences and communication with other hospitals was helpful (3%)

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4   Some PAs provided free text comments for these questions even though they did not need to, based on their response in the lead up "closed ended" questions. As such, the percentage of PAs responding to a specific criteria in the "closed ended" question may differ from the percentage of "eligible" PAs who responded to "open ended" questions.

Themes from PAs

94% of interviewees identified challenges:

- Approval process incl. sign-off from various groups (49%)

- Time/process to develop medical directives (38%)

- Lack of template/samples from other hospitals (22%)

- Lack of understanding re: PA role and scope (16%)

Enhancements to PA Integration Program (PAIP)

Question: Applicable to IMG PAs (and their SPs) only: Are there areas the PA Integration Program should have covered or spent more time on but did not? If so, what are these areas?

Themes from SPs

This question was applicable to 56% of interviewees.

For those to whom this question was applicable (Supervisors of 23 IMGs), 30% stated that there were no gaps. For those that did find gaps:

- Nothing that could have been taught through PAIP (19%)

- Require training in the clinical area in which they are placed (19%)

- Require more clinical experience (19%)

- Better Orientation to Canadian Healthcare system (19%)

Themes from PAs

This question was applicable to 62% of interviewees.

For those to whom this question was applicable (32 IMGs):

- Good program/covered the necessary topics (34%)

- Can't think of anything (16%)

- Additional time in "clinical" component (16%)

Desire to Continue Working as a PA

Question: How strongly do you agree with the following statement "I hope to continue working as a PA in Ontario after the conclusion of the Demonstration Project?"

For those PAs who stated that did not want to continue working as a PA or who neither agreed nor disagreed, they were asked "what are your reasons?"[5]

- Pursue career as a physician (88%)

For those PAs who stated that did not want to continue working as a PA or who neither agreed nor disagreed, they were asked "is there anything that would convince you to keep working as a PA?"[6]

- No response provided (56%)
- No (38%)

Positive Impacts/Experiences

Question for SPs: What factors contributed to the positive impacts of the introduction of the PA so far?

Question for PAs: What factors have made your experience in this project a positive one so far?

Themes from SPs

- Improved access/time for patients (29%)
- The PA (24%)
- Supportive Team/ Acceptance of team (22%)
- PA skill level (22%)
- SP impact - appropriate use of time, improved work life (22%)

Themes from PAs

- Good team/acceptance by the team (48%)
- Good SP(s)/Acceptance by MDs (29%)
- Opportunity to practice what I have been trained for (23%)
- Exposure/integration to Canadian healthcare system (23%)

Negative Impacts/Experiences

Question for SPs: What factors contributed to the negative impacts of the introduction of the PA so far?

Question for PAs: What factors have made your experience in this project a negative one so far?

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[5]   Ibid.

[6]   Ibid.

Themes from SPs

88% of interviewees identified negative impacts.

For those that identified negative impacts:

- RN feeling threatened/ lack of acceptance (28%)
- Lack of understanding of PA role (25%)
- Organization ill-prepared for PA (11%)

Themes from PAs

90% of interviewees identified negative impacts.

For those who identified negative impacts:

- Time/process to develop medical directives (32%)
- Lack of PA scope/role clarity (23%)
- Lack of PA regulation (21%)
- Conflict with nurses/unions (15%)
- Lack of job security (15%)

What SPs/PAs Wish they had Known

Question: What do you know now that you wish you had known at the beginning of the project?

Themes from SPs

90% of interviewees identified specific items.

For those that identified specific items:

- Process/time to develop medical directives (30%)
- Clarity on PA role/scope (22%)

Themes from PAs

73% of interviewees identified specific items.

For those who identified specific items:

- Lack of medical directives or time/process to develop medical directives (26%)
- Lack of job security/ clear vision of future direction of PA role (21%)
- Inability to apply for residency position/Ministry's desire for IMGs to give up goal of being an MD (16%)

What Worked Well?

Question: As you reflect on your experience in the project, what worked well in terms of your (PA) introduction to the organization?

Themes from SPs

90% of respondents identified specific aspects.

For those that identified specific items that worked well:

- Orientation process (33%)
- MEI session (25%)
- Introduction and exposure to various department/staff (25%)
- Toolkit (22%)

Themes from PAs

- Organization's communication to staff re: PA role/Team introductions (40%)
- A good orientation (38%)
- Team building exercise (25%)
- Educating people about our role (15%)

What Could Be Improved?

Question: What could have been improved (in terms of your (PA) introduction to the organization?)

Themes from SPs

80% of interviewees identified aspects that could have been improved.

For those that identified specific items:

- Greater PA role clarity/PA regulation (24%)
- Improved process for medical directives (21%)
- Improved orientation (18%)
- Improved relationship/communication with nurses (18%)

Themes from PAs

79% of interviewees identified aspects that could have been improved.

For those who identified specific items:

- More education to staff/SP re: PA role and scope (37%)

- More education to hospital management re: PA role and scope (24%)

- Better organization/orientation from facility (24%)

- Additional educational materials (20%)

- Greater awareness about the PA role to patients/public (17%)

Working with the Multi-disciplinary Team: Positive impacts/ experiences

Question for SPs: What were the overall positive impacts of the introduction of the PA role on the multidisciplinary team?

Question for PAs: What were the some of your positive experiences with the multidisciplinary team?

Themes from SPs

- Improved communication/coordination in team (37%)

- Improved access to medical staff for staff (34%)

- PA has made team more efficient (12%)

- Improved patient flow/quality of care (15%)

Themes from PAs

- Learning and appreciating various roles (48%)

- Opportunity to share information and learn from each other (44%)

- Working together to improve patient care (38%)

- Acceptance from various staff (25%)

Working with the Multi-disciplinary Team: Negative impacts/ experiences

Question for SPs: What were some of the challenges in integrating the PA role to the multidisciplinary team? How were they overcome?

Question for PAs: What were some of the challenges in interacting and integrating with the multidisciplinary team? How were they overcome?

Themes from SPs

93% of interviewees reported challenges in integrating the PA role into the multi-disciplinary team.

For those who identified challenges:

- Acceptance from nurses/nurses feeling threatened (39%)
- Clear definition of PA role/scope (32%)
- Lack of/acceptance of medical directives (18%)

Factors identified to help overcome these issues:
- Lots of communication (18%)
- Team sessions (8%)
- Implementation committee/Supportive management (5%)

Themes from PAs

79% of interviewees challenges in integrating the PA role into the multi-disciplinary team.

For those who identified challenges:
- Lack of understanding re: PA role/scope (46%)
- Team acceptance (24%)

Factors identified to help overcome these issues:
- Ongoing communication (22%)
- Implementation of medical directives (12%)

Lessons Learned

Question: Are there any lessons learned that you would like to share with others (SPs/PAs as applicable) who will be joining the project?

Themes from SPs

95% of interviewees responded to this question.

For those that did provide a response:
- Importance of knowing PA skills/matching to organization needs (18%)
- Need to clearly understand/define the PA role (18%)
- Need to have clear process for medical directives (15%)

Themes from PAs
- Be patient/don't get frustrated (29%)
- Communicate with others; educate staff and promote your role (23%)
- Have an open mind and positive attitude/be patient and respectful (17%)

Desired Changes

Question: As the Ministry moves forward with rolling out the PA role across Ontario, are there any changes that you would like to see?

Themes from SPs

49% of respondents provided suggestions for changes.

Of those that provided suggestions:

- Need to have dedicated funding (40%)
- PA role should be regulated (30%)
- Need more PAs (25%)
- Need to have standardized directives/templates (15%)
- Clear definition/scope of PA role and practice (15%)
- Need to have standardized skill set for PAs (15%)
- Need to have funding/plan to train new PA grads (15%)

Themes from PAs

- PA role should be regulated (40%)
- Expand PA role to other specialities/increase number of positions (21%)
- Need to share medical directives/have medical directives in place (21%)
- Clarity on PA roles and competencies (19%)
- Clear vision and plan for PA role (17%)
- Improve communication strategy to increase awareness of PA role/skills/ competencies/qualifications (17%)

Final Comments

Question: Any final comments?

Themes from SPs

59% of interviewees responded to this question.

Of those that provided feedback:

- Successful/positive program (50%)
- PA is useful and important member of team (33%)
- PA initial integration took time (17%)

- PA role needs to be funded (13%)

Themes from PAs

50% of interviewees responded to this question.

Of those that provided feedback:
- Good program/enjoyed the project (54%)
- Hope that the program continues (12%)
- Ministry should continue to fund PA role (12%)

Technical Appendix F – Team Survey and Focus Group Feedback

Hospital Care Team Survey and Focus Group Feedback

Hospital Teams participating in the PA Demonstration Project were invited to provide their feedback and evaluation of the PA role through team surveys and team focus groups. As with the other findings presented in the report, the team feedback presented below is based on final team surveys and team focus group that occurred at the end of the hospitals participation in the initial term of the demonstration project.

Hospital Team Survey Findings

All hospital teams were invited to provide their feedback on the PAs impact on patient care through an online team survey. A total of 148 team members representing 17 of the 21 demonstration hospitals participated in the team survey. Given the great variation in feedback by individual disciplines, in addition to providing overall team results, team feedback has also been provided by respondent discipline.

Responses from team members were largely positive, with the most positive impact being felt by team members in:

- Time patients have face-to-face with a health care practitioner (78% positive)

- Communication within the health care team (69% positive)

- Quality of patient outcomes (64% positive)

The most frequently reported negative impacts were for:

- Wait times (11% negative)

- Communication within the health care team (11% negative)

- Throughput (8% negative)

Exhibit 110: Hospital Team Perception of PA Impact

Dimension	Responses	Very Positive Impact	Positive Impact	No Impact	Negative Impact	Very Negative Impact	I Don't Know/Not Applicable	% Positive or Very Positive
Team Perception of PA Impact on Patient Care								
		% Distribution of Team Perception of Impact of PA						
Patient Safety	148	20%	37%	31%	1%	0%	11%	57%
Quality of Patient Outcomes	145	23%	41%	20%	1%	0%	14%	64%
Face to Face Time	146	36%	42%	8%	5%	0%	9%	78%
Throughput	144	17%	38%	19%	7%	1%	18%	55%
Wait Times	142	18%	35%	17%	9%	2%	18%	54%
Communication Within the Health Care Team	143	34%	36%	15%	10%	1%	5%	69%
Communication Across the Continuum	143	16%	25%	32%	3%	0%	24%	41%
Movement across the Continuum	144	13%	24%	35%	5%	0%	24%	37%
Physician Recruitment/ Retention	140	9%	21%	34%	6%	1%	30%	29%

When results were examined from a discipline specific perspective, nurses rated the PAs as having the lowest positive impact on all dimensions except for PA impact on throughput (administration was lower), wait times (allied health and administration was lower) and movement across the continuum of care (administration was lower).

Exhibit 111:   Hospital Team Perception of PA Impact on Patient Safety

Discipline	# of Responses	1 - Very Positive Impact	2 - Positive Impact	3 - No Impact	4 - Negative Impact	5 - Very Negative Impact	6 - I Don't Know/Not Applicable	% Positive or Very Positive
Team Perception of PA Impact on Patient Safety								
		Percent Distribution of Responses						
Nurse	82	17%	29%	41%	1%	0%	11%	46%
Allied Health Professional	34	21%	44%	18%	0%	0%	18%	65%
Admin./Admin. Support	15	20%	47%	27%	0%	0%	7%	67%
Other	14	36%	50%	14%	0%	0%	0%	86%
Physician	3	33%	67%	0%	0%	0%	0%	100%
Grand Total	148	20%	37%	31%	1%	0%	11%	57%

Exhibit 112: Hospital Team Perception of PA Impact on Quality of Patient Outcomes

Discipline	# of Responses	Percent Distribution of Responses						% Positive or Very Positive
		1 - Very Positive Impact	2 - Positive Impact	3 - No Impact	4 - Negative Impact	5 - Very Negative Impact	6 - I Don't Know/Not Applicable	
Nurse	80	19%	39%	24%	3%	0%	16%	58%
Allied Health Professional	34	29%	35%	18%	0%	0%	18%	65%
Admin./Admin. Support	15	13%	60%	20%	0%	0%	7%	73%
Other	13	38%	46%	8%	0%	0%	8%	85%
Physician	3	67%	33%	0%	0%	0%	0%	100%
Grand Total	145	23%	41%	20%	1%	0%	14%	64%

Exhibit 113: Hospital Team Perception of PA Impact on Face to Face Time with Provider

Discipline	# of Responses	Percent Distribution of Responses						% Positive or Very Positive
		1 - Very Positive Impact	2 - Positive Impact	3 - No Impact	4 - Negative Impact	5 - Very Negative Impact	6 - I Don't Know/Not Applicable	
Nurse	81	31%	38%	12%	6%	0%	12%	69%
Allied Health Professional	34	47%	44%	0%	0%	0%	9%	91%
Admin./Admin. Support	15	20%	60%	13%	7%	0%	0%	80%
Other	13	54%	38%	0%	8%	0%	0%	92%
Physician	3	67%	33%	0%	0%	0%	0%	100%
Grand Total	146	36%	42%	8%	5%	0%	9%	78%

Exhibit 114: Hospital Team Perception of PA Impact on Throughput

Discipline	# of Responses	Percent Distribution of Responses						% Positive or Very Positive
		1 - Very Positive Impact	2 - Positive Impact	3 - No Impact	4 - Negative Impact	5 - Very Negative Impact	6 - I Don't Know/Not Applicable	
Nurse	82	13%	37%	24%	11%	2%	12%	50%
Allied Health Professional	34	26%	35%	9%	0%	0%	29%	62%
Admin./Admin. Support	15	7%	33%	27%	0%	0%	33%	40%
Other	10	20%	60%	0%	10%	0%	10%	80%
Physician	3	67%	33%	0%	0%	0%	0%	100%
Grand Total	144	17%	38%	19%	7%	1%	18%	55%

Exhibit 115: Hospital Team Perception of PA Impact on Wait Times

Team Perception of PA Impact on Wait Times								
		Percent Distribution of Responses						
Discipline	# of Responses	1 - Very Positive Impact	2 - Positive Impact	3 - No Impact	4 - Negative Impact	5 - Very Negative Impact	6 - I Don't Know/Not Applicable	% Positive or Very Positive
Nurse	80	18%	38%	15%	15%	4%	11%	55%
Allied Health Professional	34	21%	29%	12%	0%	0%	38%	50%
Admin./Admin. Support	15	7%	33%	40%	0%	0%	20%	40%
Other	10	20%	50%	10%	10%	0%	10%	70%
Physician	3	67%	0%	33%	0%	0%	0%	67%
Grand Total	142	18%	35%	17%	9%	2%	18%	54%

Exhibit 116: Hospital Team Perception of PA Impact on Communication within the Health Care Team

Team Perception of PA Impact on Communication within the Health Care Team								
		Percent Distribution of Responses						
Discipline	# of Responses	1 - Very Positive Impact	2 - Positive Impact	3 - No Impact	4 - Negative Impact	5 - Very Negative Impact	6 - I Don't Know/Not Applicable	% Positive or Very Positive
Nurse	81	26%	32%	19%	17%	1%	5%	58%
Allied Health Professional	34	53%	32%	6%	3%	0%	6%	85%
Admin./Admin. Support	15	20%	53%	20%	0%	0%	7%	73%
Other	10	40%	60%	0%	0%	0%	0%	100%
Physician	3	67%	0%	33%	0%	0%	0%	67%
Grand Total	143	34%	36%	15%	10%	1%	5%	69%

Exhibit 117: Hospital Team Perception of PA Impact on Communication Across the Continuum of Care

Team Perception of PA Impact on Communication Across the Continuum of Care								
		Percent Distribution of Responses						
Discipline	# of Responses	1 - Very Positive Impact	2 - Positive Impact	3 - No Impact	4 - Negative Impact	5 - Very Negative Impact	6 - I Don't Know/Not Applicable	% Positive or Very Positive
Nurse	81	14%	23%	42%	4%	0%	17%	37%
Allied Health Professional	34	24%	18%	15%	3%	0%	41%	41%
Admin./Admin. Support	15	0%	47%	27%	0%	0%	27%	47%
Other	10	20%	40%	20%	0%	0%	20%	60%
Physician	3	67%	0%	33%	0%	0%	0%	67%
Grand Total	143	16%	25%	32%	3%	0%	24%	41%

Exhibit 118: Hospital Team Perception of PA Impact on Movement of Patients Across the Continuum of Care

Team Perception of PA Impact on Movement of Patients Across the Continuum of Care								
		Percent Distribution of Responses						
Discipline	# of Responses	1 - Very Positive Impact	2 - Positive Impact	3 - No Impact	4 - Negative Impact	5 - Very Negative Impact	6 - I Don't Know/Not Applicable	% Positive or Very Positive
Nurse	82	12%	21%	40%	7%	0%	20%	33%
Allied Health Professional	34	18%	21%	24%	3%	0%	35%	38%
Admin./Admin. Support	15	7%	20%	47%	0%	0%	27%	27%
Other	10	0%	60%	20%	0%	0%	20%	60%
Physician	3	67%	33%	0%	0%	0%	0%	100%
Grand Total	144	13%	24%	35%	5%	0%	24%	37%

Exhibit 119:   Hospital Team Perception of PA Impact on Physician Recruitment/Retention

Team Perception of PA Impact on Physician Recruitment/Retention								
		Percent Distribution of Responses						
Discipline	# of Responses	1 - Very Positive Impact	2 - Positive Impact	3 - No Impact	4 - Negative Impact	5 - Very Negative Impact	6 - I Don't Know/Not Applicable	% Positive or Very Positive
Nurse	79	10%	15%	42%	9%	1%	23%	25%
Allied Health Professional	34	3%	21%	21%	3%	0%	53%	24%
Admin./Admin. Support	14	7%	43%	29%	0%	0%	21%	50%
Other	10	10%	40%	30%	0%	0%	20%	50%
Physician	3	33%	0%	33%	0%	0%	33%	33%
Grand Total	140	9%	21%	34%	6%	1%	30%	29%

Exhibit 120:   Hospital Team Perception of Whether the PA Follows Accepted Standards of Care

Does the PA Follow Accepted Standards of Care?							
		Percent Distribution of Responses					
Discipline	# of Responses	1 - All the time	2 - Most of the time	3 - Sometimes	4 - Rarely	5 - I Don't Know/Not Applicable	% Positive or Very Positive
Nurse	82	39%	30%	21%	4%	6%	70%
Allied Health Professional	34	62%	15%	0%	0%	24%	76%
Admin./Admin. Support	15	33%	47%	7%	0%	13%	80%
Other	8	50%	38%	0%	0%	13%	88%
Physician	3	100%	0%	0%	0%	0%	100%
Grand Total	142	46%	28%	13%	2%	11%	74%

With resepct to the sustainability of the PA role and the team's satisfaction with the PA role, physicians were most likely to report

satisfaction with the PA (100% either satisfied or very satisfied). Nurses were least likely to report satisfaction with the PA (48% either satisfied or very satisfied). 27% of nurse respondents were unsatisfied or very unsatisfied with the PA.

Exhibit 121: Hospital Team Satisfaction with PA

Team Satisfaction with PA								
		Percent Distribution of Responses						
Discipline	# of Responses	1- Very Satisfied	2- Satisfied	3- Neither Satisfied nor Unsatisfied	4- Unsatisfied	5- Very Unsatisfied	6 - I Don't Know/Not Applicable	% Positive or Very Positive
Nurse	82	27%	21%	23%	18%	9%	2%	48%
Allied Health Professional	34	41%	29%	21%	6%	0%	3%	71%
Admin./Admin. Support	15	33%	33%	7%	20%	0%	7%	67%
Other	8	63%	13%	13%	0%	0%	13%	75%
Physician	3	100%	0%	0%	0%	0%	0%	100%
Grand Total	142	35%	23%	20%	14%	5%	4%	58%

Fewer than half of the nurse respondents indicated that they wished to continue working with a PA after the conclusion of the demonstration project.

Exhibit 122:   Hospital Team Reported Wish to Continue Working with a PA

Wish To Continue Working with a PA After Conclusion of the Demonstration Project								
		Percent Distribution of Responses						
Discipline	# of Responses	1 - Strongly Agree	2 - Agree	3 - Neither Agree nor Disagree	4 - Disagree	5 - Strongly Disagree	6 - I Don't Know/Not Applicable	% Positive or Very Positive
Nurse	82	26%	23%	22%	21%	7%	1%	49%
Allied Health Professional	34	38%	44%	9%	3%	0%	6%	82%
Admin./Admin. Support	15	40%	27%	0%	27%	0%	7%	67%
Other	8	63%	13%	13%	13%	0%	0%	75%
Physician	3	100%	0%	0%	0%	0%	0%	100%
Grand Total	142	34%	27%	15%	16%	4%	3%	61%

Hospital Team Focus Groups

Team members were also invited to participate in team focus group to expand on some of the feedback provided in team surveys and share their overall thoughts on the PA role, and project successes and challenges. Focus groups were held at 13 sites.

Over half of hospital care team focus group participants indicated that they would recommend that their organization, and others, employ a PA.

The impacts of introduction of PAs on patient care most frequently identified by hospital care team focus group participants were:

- Decreased waits, increased access and volume of patients

- Improved coordination of people/processes

- Increased access for other members of the health care team to medical staff

The challenges most frequently reported from hospital care team focus group participants were:

- Difficulty in developing and implementing medical directives delayed effective use of PAs

- Lack of clarity around the PA role, and particularly the difference between the PA and NP role

- Lack of regulation of the PA role has been a barrier to gaining acceptance of the role among team members

All of the focus groups except one reported that their PA always followed clinical practice guidelines and the appropriate processes for delegation at their hospital; a quarter of hospital focus groups also stated that their PA was aware of their strengths and limitations. However, most also commented that it took a long time to develop the medical directives, and that these delays negatively impacted the PA role.

Those themes identified by at least 20% of the focus groups are presented below.

Question 1: Has having a PA at your hospital had any impact on the service that your Hospital is able to provide? For example, has the PA had any impact on patient care coordination, throughput, wait times for service and/or the ability to expand services?

- Decreased waits/improved access and volume of patients

- Improved coordination of people/processes

- Increased access to medical staff (for staff)

- Improved discharge planning

- SPs able to see more complex patients/continue to work in their office/clinic

- Need to improve medical directives process/scope

- PA provides valuable information

Question 2: How has having a PA impacted the performance of the interdisciplinary team?

- Increased access to medical staff (for staff)
- Improved coordination of care
- Improved team functioning
- Improved Communication
- Helped to clarify team roles
- PA has integrated well

Question 3: How satisfied are you with the PA role of the PA in your hospital, separate and apart from the individual currently performing the role?

- Valuable role/definite advantage
- Sad it is over/Wish PA would continue
- Delay of medical directives negatively impacted PA role

Question 4: In your opinion, does the PA follow clinical practice guidelines and appropriate processes for delegation at your hospital?

- Yes/Absolutely (93%)
- PA knows strengths/limitations
- Took a long time to develop directives

Question 5: How could the PA role be better utilized at the Hospital? What barriers exist?

- Timely development/ advancement of medical directives
- Lack of regulation is a challenge
- PA role is being well utilized
- Expand PA role to other clinical areas
- Funding is a barrier to PA role at hospital

Question 6: Please comment on what you think worked well when the PA role was being introduced at your Hospital. Are there things that should have been done differently?

Worked Well:

- Orientation, Education and Coordination
- Team acceptance

Could be Improved:

- Clear definition of PA role/scope

- Medical directives process

- Communication from project/colleges

- Orientation for SP/team

- Value of MEI session

Question 7: Is there anything else you would like the evaluation team to know?

- Would want/ recommend a PA

- Project was very successful

- Role needs to be funded

- Has decreased wait time, length of stay and improved access

- Improve medical directives process

- Need clarity around PA role, difference between NP and PA

- PA seen as great help

CHC Team Focus Group Feedback

CHC staff members were invited to participate in team focus group to share their overall thoughts on the PA role, and project successes and challenges. Presented below is a summary of feedback from staff at participating community health centres.

Question 1: Has having a PA at your facility had any impact on the service that your centre is able to provide? For example, has the PA had any impact on the number of clients seen at the centre, reduction etc.?

- Improved access and reduced wait times

- Improved work up/consultation process

- Improved ability to respond to patient needs in times of crisis e.g. H1N1 pandemic

- Increased team's access to physician

Question 2: How has having a PA impacted the performance of the interdisciplinary team?

- No significant impact

- Having a PA redefined with way NP worked. Need to establish a communication triad with physician instead of diad.

Question 3: How satisfied are you with the PA role of the PA in your CHC, separate and apart from the individual currently performing the role?

▪ Needs to be greater role clarity, particularly for clients

▪ Concern that role is not regulated

▪ Not clear that role is sustainable, and if it is to be supported, what will be the impact on established professions such as nurse practitioners?

▪ If role is supported on an ongoing basis, PAs could provide continuity and allow better planning for new programs

▪ While relationship between the NP and PA has been worked out in most centres, there continues to be some resentment from NPs

Question 4: In your opinion, does the PA follow clinical practice guidelines and appropriate processes for delegation in your centre?

▪ Team assisted in development of directives

▪ Learning curve for re: Ontario PA regulations

▪ Did not always follow process for signing prescriptions

▪ (At one CHC) directives still a work in progress

Question 5: How could the PA role be better utilized in your centre? What barriers exist?

▪ PA should be allowed to work with multiple SPs so that they can work across multiple teams

▪ PA should be used to follow up on chronic diseases

▪ PA knowledge re: Ontario regulations

▪ PA should be allowed to fill out medical forms… it would streamline things

▪ Lack of medical directives

Question 6: Please comment on what you think worked well when the PA role was being introduced into your centre. Are there things that should have been done differently?

▪ Initial orientation re: PA role was helpful

▪ PA scope of practice is unclear

Question 7: Is there anything else you would like the Evaluation Team to know?

▪ PA role is innovative solution to health system challenges

- PA role should be regulated

- Upfront investments for this role are significant; concern about whether this role is financially viable.

Long Term Care Team Focus Group Feedback

Staff members were invited to participate in team focus group to share their overall thoughts on the PA role, and project successes and challenges. Presented below is a summary of feedback from staff at participating LTC homes and diabetes centres.

Question 1: Has having a PA at your facility had any impact on the service that your facility/centre is able to provide? For example, has the PA had any impact on the number of residents/patients seen at the facility/centre, reduction in transfers to acute care, etc.?

- Significant positive impact

- Access to medical practitioner everyday

- Timely care, reduced waits to see a medical provider

- Decreased physician workload, allowed MD to cover an additional facility

- Positive impact on nurses – daily access to medical provider

Question 2: How has having a PA impacted the performance of the interdisciplinary team?

- PA has become part of interdisciplinary team

- PA works collaboratively with others

- Team is more efficient

- Improved continuity

Question 3: How satisfied are you with the PA role of the PA in your facility, separate and apart from the individual currently performing the role?

- On-site resource

- Timely response to resident concerns

- Reduction in ED transfers

Question 4: In your opinion, does the PA follow clinical practice guidelines and appropriate processes for delegation in your facility/centre?

- Initially, some confusion and questions about scope. Required some oversight

- Yes, PAs are quick to identify what is outside their scope of practice.

Question 5: How could the PA role be better utilized in your facility? What barriers exist?

- Improve communication

- Clarity around when a PA could be called

- PA scope is limited (prescribing narcotics, pronouncing death)

Question 6: Please comment on what you think worked well when the PA role was being introduced into your facility. Are there things that should have been done differently?

- Need clarity between NP and PA roles

- PA role should be introduced to home/staff well in advance of PA arrival

- Need to develop a collaborative framework where care/responsibilities overlap

- Challenges in PA accountability since PA is hired by SP

Question 7: Is there anything else you would like the Evaluation Team to know?

- PA is a big benefit to LTC homes

- PA program is working; didn't anticipate this level of success

- Positive feedback from residents/families

- Cannot imagine working without a PA

Technical Appendix G – Findings from Patient/Client Satisfaction Surveys

Hospital Patient Satisfaction

Within the hospitals, analysis of patient satisfaction data was based on results of the NRC Picker Patient satisfaction survey commonly used by Hospitals. This survey is sent to a randomly selected group of hospital patients. The survey does not ask if the patient was seen by a PA or not, and does not have questions specifically focused of the PA.

In addition, although every effort was made to focus on satisfaction data that was obtained from patients who were discharged from a unit where the PA worked, due to individual hospital preferences on the grouping of units/programs, this was not always possible.

As such, the presentation of patient satisfaction data is more of a barometer of the overall care provided by the team (of which the PA is a part) and not the PA themselves. Since hospitals participating in the demonstration project did not have the opportunity to modify the survey to include PA specific questions, overall improvements in patient satisfaction scores cannot be directly attributed to the introduction of the PA role. Although a statistical analysis of specific questions is presented below, the analysis does not attribute causality between the introduction of the PA role and patient satisfaction.

The analysis presented below is based on patient satisfaction data obtained from participants in the hospital demonstration project who used the NRC Picker tool in the service in which the PA was employed (i.e. ED or specific in-patient unit). The analysis is based on pre-PA (6 months prior to PA hire) and post-PA patient satisfaction results. Post-PA impact is based on the last 6 months of data obtained during the original 2 year demonstration contract. If hospitals had not completed the full 2 year term prior to the conclusion of the evaluation period (March 2010), the complete 6 months of post-PA data was not available for analysis.

Questions from the ED/inpatient survey thought to be most relevant/impacted by the introduction of the PA role were included in the analysis. These included questions about physicians in particular since PAs are considered to be "physician extenders" and a patient's assessment of their experience with a PA.

The exhibits below shows a summary of the t-test analysis by hospital group and NRC Picker question. Positive and negative signs demonstrate statistically significant improvement and deterioration in the average score from the Pre-PA to the Post-PA period

respectively. An empty cell demonstrates no statistically significant difference between the average scores in the two periods. Cells marked with N/A are those to which the specific NRC Picker question does not apply.

For the Emergency Departments (ED) where PAs were employed, there were no statistically significant differences in patient satisfaction after the PA was employed, compared to the survey prior to the PA arrival, for the questions listed in the table below.

For the acute care inpatient units where PAs were employed, there were 2 patient satisfaction questions where the results after the PA was employed were significantly more positive than prior to the PA arrival:

- How would you rate the availability of your doctors? (64% positive rating prior to PA, 66% for last 6 months of demonstration project)

- Overall, how would you rate the care you received from your doctors? (77% positive rating prior to PA, 79% for last 6 months of demonstration project)

Exhibit 123: Patient Satisfaction by Clinical Area

Question	Clinical Area	
	ED	IP
Overall, how would you rate the care you received in the Emergency Department/Hospital?		
How would you rate the courtesy of your doctors?		
How would you rate the availability of your doctors?	N/A	+
Overall, how would you rate the care you received from your doctors?	N/A	+
Would you recommend this Emergency Department/Hospital to family and friends?		
Did you have to wait too long to see a doctor?		N/A
Did you wait too long for this other doctor or specialist?		N/A
When you had important questions to ask a doctor, did you get answers you could understand?		
Did you have confidence and trust in the doctors treating you?		
If you had any anxieties or fears about your condition or treatment, did a doctor discuss them with you?		
Was there one particular doctor in charge of your care in the Emergency Department/Hospital?		
Did doctors talk in front of you as if you weren't there?		
Once you went to a bed or an examination room, about how long did you have to wait to see a doctor?		N/A
About how long did you spend in the Emergency Department from the time you arrived to the time you left?		N/A

When the patient satisfaction survey data for the acute care inpatient units where PAs worked was broken down by hospital teaching status and size, there were other items where there was a statistically significant change in patient satisfaction.

For the teaching hospitals, there were 4 questions where there was a significant improvement in patient satisfaction associated with the presence of the PA (overall care, availability of doctors, care from doctors, and one doctor in charge of care).

For the large community hospitals, there was significant improvement in patient satisfaction with their wait, but a significant decrease in patient satisfaction with overall care.

For the small community hospitals, there were 6 questions where there was a significant improvement in patient satisfaction associated with the presence of the PA (overall care, courtesy of doctor, availability of doctors, care from doctors, answers from doctors re care, and discussion of concerns/anxiety). There was a significant decrease with patient satisfaction with overall time spent in the ED.

Exhibit 124: Patient Satisfaction by Teaching Status/Hospital Size

Question	Hospital Type		
	Teaching	Large	Small
Overall, how would you rate the care you received in the Emergency Department/Hospital?	+	-	+
How would you rate the courtesy of your doctors?			+
How would you rate the availability of your doctors?	+		+
Overall, how would you rate the care you received from your doctors?	+		+
Would you recommend this Emergency Department/Hospital to family and friends?			
Did you have to wait too long to see a doctor?	N/A	+	
Did you wait too long for this other doctor or specialist?	N/A		
When you had important questions to ask a doctor, did you get answers you could understand?			+
Did you have confidence and trust in the doctors treating you?		-	
If you had any anxieties or fears about your condition or treatment, did a doctor discuss them with you?			+
Was there one particular doctor in charge of your care in the Emergency Department/Hospital?	+		
Did doctors talk in front of you as if you weren't there?			
Once you went to a bed or an examination room, about how long did you have to wait to see a doctor?	N/A		
About how long did you spend in the Emergency Department from the time you arrived to the time you left?	N/A		-

CHC Client Satisfaction

CHCs participating in the demonstration project added the following two questions to their existing patient satisfaction surveys:

- Have you ever seen a Physician Assistant at this Centre?

- If yes, were you satisfied with the services the Physician Assistant provided?

Results of the final CHC client satisfaction surveys are presented below. Three quarters of the clients who completed patient satisfaction surveys had been seen by a PA.

Exhibit 125: Percentage of Clients Seen by a PA within CHCs

Percentage of Clients Seen by PA			
CHC	Yes	No	Don't Know
Total	75%	22%	3%

82% of CHC clients reported satisfaction with the PA, and the rate of satisfaction with 70% or higher for all of the individual CHCs.

Exhibit 126:   Client Satisfaction with PA at CHCs

Client Satisfaction with PA Services							
CHC	% Satisfied or Very Satisfied	Very Satisfied	Satisfied	Neither Satisfied or Unsatisfied	Unsatisfied	Very Unsatisfied	Don't Know/No Comments
Total	82%	60%	22%	2%	5%	6%	4%

Technical Appendix H - Hospital CIHI Administrative Data

Throughout the PA demonstration project there was an attempt to rely whenever possible on pre-existing administrative data rather than new primary data collection so as to reduce the data collection burden on the project participants. All Ontario hospitals submit individual patient records for every patient discharged from an acute care hospital bed and for every patient who visits the ED. The hospitals follow national and provincial standards for inpatient and ambulatory patient abstracts, established by the Canadian Institute for Health Information (CIHI). With the cooperation of CIHI and the Ontario MOHLTC, the Ontario data collection protocols were modified to allow tracking of the involvement of PAs in care of the patients for whom inpatient or ED records were submitted to CIHI.

Inpatient (DAD) Data

MOHLTC data analysts extracted all inpatient Discharge Abstract Database (DAD) records for fiscal years 2008/09 and 2009/10 that identified that a PA had been involved in the care of the inpatient. The following table shows the hospitals and the number of inpatient discharge records with PA involvement extracted from the provincial database.

Exhibit 127: 2008/09 and 09/10 PA Inpatient Records by Hospital

Facility Name	# of IP PAs	Total IP Cases w/ PA Involved	Total Acute Care IP Disch.[1]	% of Disch. w/ PA Involved
Royal Victoria Hospital Of Barrie (The)	5	3,221	30,735	10.5%
Credit Valley Hospital (The)	5	2,028	46,525	4.4%
Toronto East General Hospital (The)	5	2,019	36,168	5.6%
University Health Network	5	1,772	61,622	2.9%
Sault Area Hospital	2	1,672	21,370	7.8%
Thunder Bay Regional HSC	2	1,291	36,254	3.6%
Markham-Stouffville Hospital	2	1,079	28,379	3.8%
Hawkesbury And District GH	2	898	5,279	17.0%
Strathroy Middlesex General Hospital	2	626	5,583	11.2%
Pembroke Regional Hospital Inc.	3	561	11,024	5.1%
Ottawa Hospital / L'Hopital D'Ottawa	3	467	89,701	0.5%
Hotel Dieu Grace Hospital (09/10 Only)	2	397	10,055	3.9%
Timmins And District General Hospital [2]	0	256	12,168	2.1%
London Health Sciences Centre [3]	0	90	78,007	0.1%
Total	38	16,377	472,870	3.5%

[1] Total acute care inpatient discharges include birthing and some psychiatric patient discharges. PAs were seldom assigned to these units.

[2] Timmins PA worked primarily in ED, but provided some inpatient support.

[3] London HSC PA worked primarily in orthopaedic clinic, but provided some inpatient support.

For the set of hospitals listed above, 3.5% of all records for inpatients discharged during 2008/09 and 2009/10 were coded as having had a PA involved in care.

Less than 1% of the inpatients treated by PAs were under 15 years old. 50% of the inpatients treated by PAs were 65 years and older, with the modal age group 80 to 84 years old.

Exhibit 128: Distribution by Age of Inpatients with PA Involvement in Care
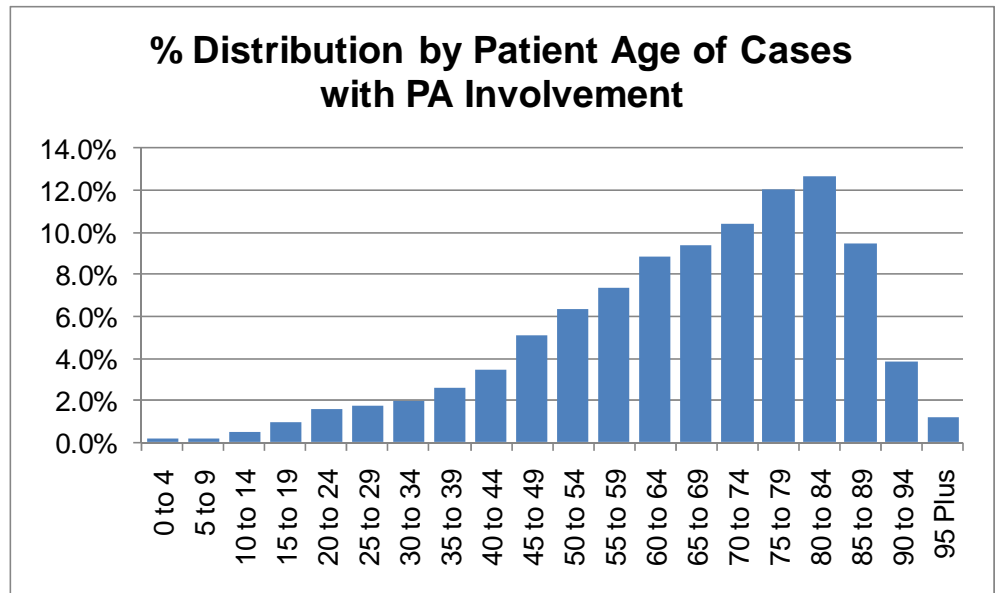
In addition to the tracking of PA involvement in their care, each inpatient discharge records also tracked the "most responsible physician" (MRP) specialty. The three most frequently specialties reported as MRP were Internist (26.3% of patients), General Surgeon (20.2%), and Family Practitioner (18.9%).

Exhibit 129: Distribution of Inpatient Cases with PA Involvement by MRP Specialty

MRP Physician Specialty	08/09	09/10	Total	% of Total
Internist	1,960	2,344	4,304	26.3%
General Surgeon	1,641	1,664	3,305	20.2%
Family Practitioner	1,409	1,683	3,092	18.9%
Orthopaedic Surgeon	1,529	1,306	2,835	17.3%
Other Services	462	572	1,034	6.3%
Comm. Med./Public Health Phys.	406	549	955	5.8%
Cardiologist	202	196	398	2.4%
Gastroenterologist	169	137	306	1.9%
Emergency Medicine	117	31	148	0.9%
Grand Total	7,895	8,482	16,377	100%

Each inpatient discharge record is assigned a "Case Mix Group" (CMG) reflecting the patient diagnosis, and for surgical cases, the procedure(s) performed during the inpatient stay. The 20 most frequently reported CMGs for inpatients who received care from a PA are listed below. These top 20 CMGs account for more than 40% of all PA patient discharges.

Exhibit 130: 20 Most Frequently Reported CMGs for Inpatients Receiving Care from PA

Case Mix Group	08/09	09/10	Total	% of All PA Cases	Cumul. %
Unilateral Knee Replacement	491	424	915	5.6%	5.6%
Chronic Obstructive Pulmonary Disease	254	310	564	3.4%	9.0%
Unilateral Hip Replacement	258	295	553	3.4%	12.4%
Heart Failure Without Cardiac Catheter	249	252	501	3.1%	15.5%
Fixation/Repair Hip/Femur	178	149	327	2.0%	17.5%
Viral/Unspecified Pneumonia	149	150	299	1.8%	19.3%
Ischemic Event Of Central Nervous System	132	159	291	1.8%	21.1%
General Symptom/Sign	109	175	284	1.7%	22.8%
Simple Appendectomy	129	143	272	1.7%	24.5%
Gastrointestinal Obstruction	132	136	268	1.6%	26.1%
Gastrointestinal Hemorrhage	111	145	256	1.6%	27.7%
Disorder Of Pancreas Except Malignancy	114	139	253	1.5%	29.2%
Lower Urinary Tract Infection	116	136	252	1.5%	30.7%
Palliative Care	105	131	236	1.4%	32.2%
Non-Severe Enteritis	104	127	231	1.4%	33.6%
Open Large Intestine/Rectum Resection Without Colostomy, Planned	116	110	226	1.4%	35.0%
Colostomy/Enterostomy	107	115	222	1.4%	36.3%
Laparoscopic Cholecystectomy With/ Without Common Bile Duct Exploration	108	113	221	1.3%	37.7%
Symptom/Sign Of Digestive System	112	109	221	1.3%	39.0%
Arrhythmia Without Cardiac Catheter	104	98	202	1.2%	40.3%

Ambulatory (NACRS) Data

MOHLTC data analysts extracted all National Ambulatory Care Reporting System (NACRS) non-scheduled emergency department (ED) records from Ontario hospitals for fiscal years 2008/09 and 2009/10 that identified that a PA had been involved in the care of the ED patient. The following table shows the hospitals and the number of ED records with PA involvement extracted from the provincial database. During the two years of the demonstration project, there were more than 30 thousand ED visit records where a PA was recorded as having participated in the care of the ED patient.

Exhibit 131: 2008/09 and 2009/10 Ontario NACRS ED Records with PA Identified as Care Provider by Hospital

Hospital	# of ED PAs	# Visits w/ PA as Provider (08/09 & 09/10)	% of 09/10 Visits w/ PA Involved
Kirkland And District Hospital	2	5,607	19.9%
Timmins And District General Hospital	1	5,398	7.4%
Brockville General Hospital	1	4,207	8.3%
Guelph General Hospital	1	4,052	4.5%
Quinte Healthcare Corporation	1	3,335	2.1%
St Francis Memorial Hospital	1	2,703	9.6%
Strathroy Middlesex General Hospital	-	1,705	2.4%
Markham-Stouffville Hospital	-	893	0.4%
Royal Victoria Hospital Of Barrie (The)	-	229	0.0%
Pembroke Regional Hospital *	-	37	0.1%
Other ED Expansion Project Sites	NA	2,031	3.8%
Total	7	30,197	2.5%
* Strathroy Middlesex, Markham Stouffville, Royal Victoria, and Pembroke inpatient PAs also covered some ED shifts.			

85% of all of the ED visits where PAs were involved were triaged as CTAS 3 (urgent) or CTAS 4 (less/semi-urgent).

Exhibit 132: Distribution of ED Visits with PA Involvement by CTAS Triage Score

CTAS Level	Visits	% of All Visits
1 - Resuscitation	27	0.1%
2 - Emergent	1,868	6.2%
3 - Urgent	10,080	33.4%
4 - Less/Semi-Urgent	15,596	51.6%
5- Non-Urgent	2,613	8.7%
9-Unknown	13	0.0%
Total	30,197	100.0%
CTAS 3 and 4	25,676	85.0%

The following two exhibits show the distribution of ED visits with PA involvement by CIHI "Major Ambulatory Cluster" (MAC) and the 20 highest volume CIHI "Comprehensive Ambulatory Care Classification System" (CACS) groups.

Exhibit 133: Distribution of ED Visits with PA Involvement by MAC

| CIHI Major Ambulatory Cluster	Visits w/ PA Involved	% of Total Visits w/ PA
Trauma, Coma And Toxic Effects	7,601	25.2%
Diseases And Disorders Of The Ear, Nose, Mouth And Throat	4,648	15.4%
Diseases And Disorders Of The Skin And Subcutaneous Tissue And Breast	3,428	11.4%
Diseases And Disorders Of The Digestive System	2,455	8.1%
Diseases And Disorders Of The Musculoskeletal System And Connective Tissue	2,406	8.0%
Diseases And Disorders Of The Respiratory System	1,932	6.4%
Examination And Other Health Factors	1,783	5.9%
Diseases And Disorders Of Kidney And Genitourinary Tract	1,450	4.8%
Diseases And Disorders Of The Circulatory System	1,418	4.7%
Diseases And Disorders Of The Nervous System	1,007	3.3%
Diseases And Disorders Of The Eye	551	1.8%
Mental Diseases And Disorders	391	1.3%
Systemic Infections Including Hiv	404	1.3%
Pregnancy, Childbirth, Newborns And Neonates	214	0.7%
Endocrine, Nutritional, And Metabolic Diseases And Disorders	195	0.6%
Diseases And Disorders Of The Hepatobiliary System And Pancreas	166	0.5%
Haematology Including Lymphoma, Leukaemia And Unspecified Site Neoplasms	101	0.3%
Oncological Diseases And Disorders	47	0.2%
Grand Total	30,197	100.0%

Exhibit 134: 20 Highest Volume CAC Groups for ED Visits with PA Involvement

CIHI Comprehensive Ambulatory Care Classification (CAC)	ED Visits w/ PA Involved	% ot Total PA Visits	Cumul. % of PA Visits
General Ear, Nose, Throat (ENT)	3,149	10.4%	10.4%
Skin And Subcutaneous Tissue - Age 18 + Yrs	1,963	6.5%	16.9%
Other Skin Intervention - Grade 1 - Local/No Anaesthesia/Other Unmonitored	1,285	4.3%	21.2%
Closed Fracture And Other Dislocations	1,071	3.5%	24.7%
Other Musculoskeletal And Connective Tissue - Age 18 + Yrs	1,019	3.4%	28.1%
Other Injuries	989	3.3%	31.4%
General Respiratory System - with Minor Investigative Technology Age 18 +	974	3.2%	34.6%
Open Wounds Without Complication	927	3.1%	37.7%
Other Genitourological Disorders - Age 18 + Yrs	883	2.9%	40.6%
Sprains	812	2.7%	43.3%
Contusion Except Fingers And Toes	809	2.7%	46.0%
Skin And Subcutaneous Tissue with Minor Investigative Technology	748	2.5%	48.4%
General Gastrointestinal with Minor Investigative Technology Age 18 + Yr	735	2.4%	50.9%
Otitis Media	612	2.0%	52.9%
General Respiratory System - Age 0 - 64 Yrs	579	1.9%	54.8%
General Gastrointestinal - Age 18 - 44 Yrs	571	1.9%	56.7%

CIHI Comprehensive Ambulatory Care Classification (CAC)	ED Visits w/ PA Involved	% ot Total PA Visits	Cumul. % of PA Visits
Routine Health Supervision	553	1.8%	58.5%
Skin And Subcutaneous Tissue - Age 0 - 17 Yrs	545	1.8%	60.4%
Ophthalmology	538	1.8%	62.1%
Other MSK And Connective Tissue - with Minor Invest. Tech. - Age 18+ Yrs	538	1.8%	63.9%

The median age of the ED patients seen by PAs was 35 years old (i.e. much younger than the 65 year median age for inpatients treated by PAs) and 35% of the ED patients were aged 60 years or older.

Exhibit 135: Distribution of ED Visits with PA Involvement by Patient Age
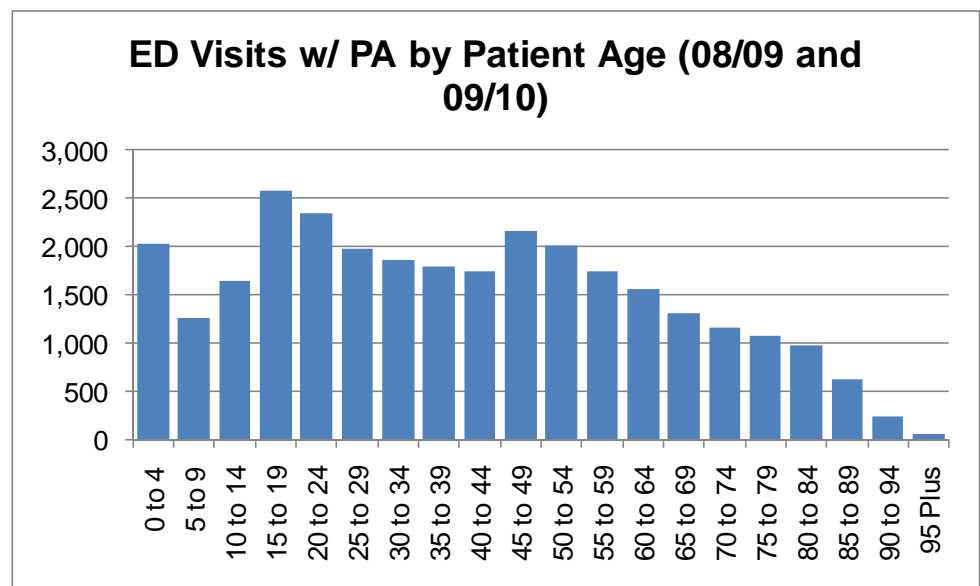
While less than one third of ED visits are on a weekday day shift, almost 57% of the ED patients seen by PAs arrived at the ED on a weekday day shift. PAs were most likely to be assigned to work during the week.

Exhibit 136: Distribution of ED Visits (PA Involved, and Total Visits) by Day of Week and Shift

Day and Time of Patient Registration		Visits w. PA Involved		% Distrib. Of All ED Visits
		Visits	% Distrib.	
Weekday	Day	17,137	56.8%	32.8%
	Evening	6,218	20.6%	29.3%
	Night	1,187	3.9%	9.7%
Weekend	Day	2,817	9.3%	12.3%
	Evening	1,693	5.6%	11.5%
	Night	1,145	3.8%	4.5%
Total		30,197	100%	100%

Impact of PA on Acute Care Inpatient Stays

The CIHI DAD data supported identification of whether a PA was involved at all in the care of acute care inpatients, but not any assessment of the extent of this involvement. For example, an inpatient with a 10 day inpatient stay that was seen by a PA on a single shift over the 10 day stay would have PA involvement recorded on their discharge record. If the same patient had been seen by the PA 8 times during their inpatient stay, the record of PA involvement would have been exactly the same (i.e. was the PA involved at all, yes or no?). This greatly limited the sensitivity of the analysis to the degree of PA involvement and the potential for the PA to impact the patient's treatment and course of their stay.

There were 3 measures identified for investigation of the potential impact of PA involvement in care:

▪ Acute length of stay – Does involvement of a PA in inpatient care have an impact on the acute (i.e. excluding alternate level of care [ALC]) length of stay?

▪ Alternate level of care (ALC) length of stay – Does involvement of a PA in inpatient care have an impact on the alternate level of care length of stay?

▪ Referral to home care – Does involvement of a PA in inpatient care have an impact on the likelihood that a discharged acute care inpatient that is sent home will be referred for home care?

Because of the insensitivity of the PA involvement measure to the degree of involvement of the PA, and the ultimate responsibility of the supervising physicians for discharge decisions, it was not anticipated that any statistically significant impacts of PA involvement would be found.

The records used for the analyses were limited to inpatients in the Medicine and Surgical programs (i.e. psychiatric and birthing patients were excluded) and limited to the facilities with consistent presence of a PA on an inpatient acute care unit over the project timeframe. The approach used was to compare the results for the group of patients treated by a PA with other similar patients from the study hospitals who had not had any interaction with a PA.

Expected acute lengths of stay, ALC lengths of stay, and rates of referral to home care, were calculated using the full Ontario 2009/10 DAD database for each combination of Case Mix Group, patient age, and Resource Intensity Level (RIL). The actual and expected values for each measure for each cohort were calculated, and .05 confidence intervals were applied to determine whether the results for each cohort were significantly different.

Acute Length of Care Analysis

It was hypothesized that the availability of a PA on an inpatient unit could support reduction of acute length of stay because the PA would be more available than the SP to follow up re diagnostics and to support communications with the multi-disciplinary team, discharge planners, and patient families.

For the acute length of stay (LOS) analysis, the CIHI national database "expected length of stay" (ELOS) and the actual acute (i.e. excluding ALC days) were calculated for "Typical" patients in each cohort. The ELOS is based on national average acute care lengths of stay for every possible combination of CMG, patient age, and case RIL. As such, the ELOS is sensitive to the patient diagnoses and interventions, age, and other factors such as comorbidity.

A Typical patient is a patient who has a full course of treatment in the acute care hospital, but is not considered to be a (statistically determined) long-stay outlier. Patients who are transferred between acute care hospitals, who die in hospital, or who sign themselves out against medical advice are not included as "Typical" patients.

For each of Medicine, Surgery, and for Medicine and Surgery combined, the actual acute LOS and the CIHI ELOS was calculated, and the actual LOS expressed as a ratio of the ELOS and multiplied times 100 (a ratio of 100 would mean that the actual LOS was exactly the same as the expected LOS).

For each of Medicine, Surgery, and for Medicine and Surgery combined, the ratio of actual acute LOS to ELOS was higher when a PA was involved than when a PA was not involved, and the difference was statistically significant.

Exhibit 137: Comparison of Actual and Expected LOS for Typical Patients by Program for Hospitals with PAs Assigned to Inpatient Acute Care

Program	Case Category	Cases	Actual Acute LOS	CIHI ELOS	Ratio of Actual to ELOS	CI_L	CI_U	Result
Medicine	No PA	111,127	5.37	5.81	92.5	92.2	92.7	Cases w/PA
	PA	7,170	7.78	7.52	103.4	102.5	104.3	Signif. Higher
Surgery	No PA	78,425	5.30	5.76	92.1	91.8	92.3	Cases w/PA
	PA	5,335	6.35	6.57	96.7	95.7	97.7	Signif. Higher
Medicine + Surgery	No PA	189,552	5.34	5.79	92.3	92.1	92.5	Cases w/PA
	PA	12,505	7.17	7.12	100.8	100.1	101.4	Signif. Higher

This result was unexpected, contrary to the hypothesis that presence of a PA could support reduced LOS, and contrary to the SP interview and team focus group feedback that the PAs had contributed to increased throughput on the inpatient units.

ALC Length of Stay Analysis

It was hypothesized that a PA would be more available to work with discharge planners and CCACs and could help to expedite discharge of inpatients who had been categorized as ALC patients. As a result, it was expected that inpatients that were seen by PAs would have lower ALC lengths of stay, after controlling for factors such as CMG assignment, patient age, and RIL (e.g. interventions and comorbidity).

For the ALC length of stay (LOS) analysis, an Ontario expected ALC LOS and actual ALC LOS were calculated for all (i.e. not just "Typical") patients in each cohort. The Ontario expected LOS was based on the provincial average ALC lengths of stay for every possible combination of CMG, patient age, and case RIL.

For each of Medicine, Surgery, and for Medicine and Surgery combined, the actual ALC LOS and the expected ALC LOS was calculated, and the actual ALC LOS expressed as a ratio of the expected ALC LOS and multiplied times 100 (a ratio of 100 would mean that the actual ALC LOS was exactly the same as the expected ALC LOS).

For each of Medicine, Surgery, and for Medicine and Surgery combined, the ratio of actual acute LOS to ELOS was much higher when a PA was involved than when a PA was not involved, and the difference was statistically significant.

Exhibit 138: **Comparison of Actual and Expected ALC LOS by Program for Hospitals with PAs Assigned to Inpatient Acute Care**

Program	Case Category	Cases	Actual ALC LOS	Expect. ALC LOS	Ratio of Actual to Expected	CI_L	CI_U	Result
Medicine	No PA	139,123	1.27	1.36	93.5	93.1	94.0	Cases w/PA
	PA	9,264	3.52	2.63	133.7	132.3	135.2	Signif. Higher
Surgery	No PA	87,834	0.62	0.67	93.6	92.8	94.4	Cases w/PA
	PA	6,099	1.13	0.86	131.6	128.6	134.8	Signif. Higher
Medicine + Surgery	No PA	226,957	1.02	1.09	93.5	93.2	93.9	Cases w/PA
	PA	15,363	2.57	1.93	133.3	132.0	134.7	Signif. Higher

This result was unexpected, contrary to the hypothesis that presence of a PA could support reduced ALC LOS, and contrary to the SP interview and team focus group feedback that the PAs had contributed to increased throughput on the inpatient units.

Referral to Home Care Analysis

It was hypothesized that PAs would be involved in discharge planning and would be able to help SPs arrange referral of discharge patients to home care services. As a result, it was anticipated that acute care inpatients with whom PAs were involved would have a higher rate of referral to home care than similar patients with no PA involvement.

For the referral to home care analysis, an Ontario database expected rate of referral to home care was calculated based on the provincial average percent of discharges referred to home care for every possible combination of CMG, patient age, and case RIL.

For each of Medicine, Surgery, and for Medicine and Surgery combined, the actual percent referral to home care and the expected percent referral to home care was calculated, and the actual value expressed as a ratio of the expected value and multiplied times 100 (a ratio of 100 would mean that the actual percent of patients referred to home care was exactly the same as the expected rate).

For each of Medicine, Surgery, and for Medicine and Surgery combined, the ratio of actual to expected percent discharges to home care was much higher when a PA was involved than when a PA was not involved, and the difference was statistically significant.

Exhibit 139: Comparison of Actual and Expected Rate of Referral to Home Care by Program for Hospitals with PAs Assigned to Inpatient Acute Care

Program	Patient Category	Records	Disch. Home, No Home Suppt.	Disch. Home w/ Home Care	Actual % with Home Care	Expected % with Home Care	Actual / Expected	CI_L	CI_U	Results
Medicine	No PA	105,290	86,542	18,748	17.8%	18.4%	96.60	95.2	98.0	Signif. More w/ Home Care w/PA
	PA	6,203	4,556	1,647	26.6%	23.9%	111.19	105.9	116.7	
Surgery	No PA	75,048	60,102	14,946	19.9%	19.9%	100.19	98.6	101.8	Signif. More w/ Home Care w/PA
	PA	5,091	3,195	1,896	37.2%	30.0%	124.02	118.5	129.7	
Medicine + Surgery	No PA	180,338	146,644	33,694	18.7%	19.0%	98.16	97.1	99.2	Signif. More w/ Home Care w/PA
	PA	11,294	7,751	3,543	31.4%	26.7%	117.71	113.9	121.6	

These results supported the hypothesis that availability of a PA could support increased access to home care services for inpatients discharged from acute care.

Discussion of Inpatient Analysis Results

After the analysis of the 2008/09 and 2009/10 inpatient data was completed, and both the acute and ALC length of stay was found to be markedly (and statistically significantly) longer for patients with PAs involved in the care, the project evaluation team convened a telephone focus group with supervising physicians from 3 acute care demonstration sites[7]. The goal of the focus group session was to present the analysis results and to ask why these results appear to be contrary to the interview feedback where two thirds of SP respondents reported that they believed that the presence of a PA had a positive impact on patient throughput through reduced patient LOS.

While the LOS analysis attempted to account for differences in patient characteristics, such as CMG, patient age, and comorbidity level, the participants in the focus group were not surprised by the results and indicated that they were most likely due to the internal processes of assignment of PAs to patients:

- In larger hospitals, PAs were often assigned to nursing units where long-stay patients were transferred after the completion of their initial acute care episode. As a result, the patients seen by the PAs were more likely to be categorized as ALC (and have a long acute and ALC stay) prior to the PA becoming involved in their care.

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[7] The three sites (Sault Area Hospitals, Ottawa Hospital, and University Health Network) were selected to cover both Medicine and Surgery and to reflect sites with the greatest difference between PA patient LOS and other patient LOS.

- In at least one hospital, SPs retained sole responsibility for care of patients with whom they were familiar. PAs were more likely to be involved in the care of patients where the SP was not aware of their complexities, and where further investigation and active management of care would be required.

A final factor that may have contributed to the longer LOS for inpatients with PAs involved in care is that the PAs were most likely to be assigned to work during the weekday. As a result, PAs were less likely to recommend patient discharge on the weekend, and this may have added to the LOS for their patients.

In spite of the inability of the analysis to demonstrate reduced LOS through PA involvement in inpatient care, the SPs in the focus group continued to believe that the PAs had a positive impact on patient length of stay and throughput.

For all of the inpatient analyses, the investigation has focused on whether there was an association between the PA involvement and the outcome being assessed. Any finding of a statistically significant association does not in any way confirm causality, and we cannot conclude that the involvement of a PA alone was responsible for the result observed.

Impact of PA on ED Patient Visits

The CIHI NACRS data supported identification of whether a PA was involved in the care of ED patients. Because of the short length of stay for ED patients, it was anticipated that (unlike with the inpatient analysis) if a PA was documented as being involved in the care, it was more likely that the PA would be actively involved for the entire visit, and that any difference in the ED stay for patients who had PAs involved and patients who did not, could be more plausibly attributed to the impact of the PA.

There were 3 measures identified for investigation of the potential impact of PA involvement in care of ED patients:

- ED length of stay – Does involvement of a PA in ED care have an impact on the ED length of stay? Three lengths of stay were analyzed:

  - Time from ED patient triage to patient assessment

  - Time from patient assessment to visit disposition

  - Total time from triage to visit disposition (i.e. the sum of the first two stays)

- Rates of incomplete visits – Does involvement of a PA in ED care reduce the likelihood that an ED patient will leave the ED prior to completion of their treatment?

- Discharge disposition – Does involvement of a PA in ED care have any impact on the likelihood of an ED patient to be admitted to inpatient acute care or to be discharged home?

The records used for the analyses were limited to ED patients assigned triage levels of CTAS 3 (urgent) or CTAS 4 (less/semi-urgent), which represented 85% of all ED patients with PA involvement, and limited to the facilities with consistent presence of a PA in the ED over the project timeframe. The approach used was to compare the results for the group of patients treated by a PA with other similar patients from the study hospitals who had not had any interaction with a PA. This latter group was further subdivided into two:

- ED patients who were treated in the ED while a PA was working there, but who did not have direct contact themselves with a PA

- ED patients who were treated in the ED when no PA was working

Expected ED lengths of stay, and rates of incomplete visits and discharge to acute care and home, were calculated using the full Ontario 2009/10 NACRS database for each combination of CTAS, patient age, and CACS group. The actual and expected values for each measure for each CTAS category were calculated, and .05 confidence intervals were applied to determine whether the results for each level were significantly different.

ED Length of Stay Analysis

The first ED length of stay component examined was the time (in hours) from patient triage until the patient assessment was initiated. For both CTAS 3 patients and CTAS 4 patients, the LOS performance was best (i.e. shortest) when a PA was directly involved in care, 2nd best when a PA was working on the unit (but not directly involved in care), and worst when no PA was working. All of these differences were statistically significant at the .05 level.

Exhibit 140: Comparison of Actual and Expected LOS from Triage to Assessment for ED Patients by CTAS for Hospitals with PAs Assigned to ED Care

CTAS Level	PA Status for Visit	Visits	Actual Triage - Assess. (Hours)	Expect. Triage - Assess. (Hours)	Actual / Expected	Lower CI	Upper CI	Results
CTAS 3	PA Involved	8,665	1.15	1.21	95.29	95.04	95.53	Significantly shorter time from triage to assessment when PA involved
	PA on Shift	39,280	1.41	1.31	107.72	107.60	107.83	
	PA Not on Shift	117,421	1.60	1.28	125.19	125.12	125.26	
CTAS 4	PA Involved	13,673	1.15	0.95	120.39	120.14	120.63	Significantly shorter time from triage to assessment when PA involved
	PA on Shift	40,648	1.33	1.04	128.16	128.02	128.30	
	PA Not on Shift	117,272	1.42	1.03	137.82	137.73	137.90	

The second ED length of stay component examined was the time (in hours) from patient assessment until visit disposition (i.e. either the time when a patient was discharged from the ED, or for admitted patients, the time the decision to admit the patient was made). For CTAS 3 patients the LOS performance was best (i.e. shortest) when a PA was directly involved in care, 2nd best when a PA was working on the unit (but not directly involved in care), and worst when no PA was working. All of these differences were statistically significant at the .05 level.

For CTAS 4 patients the LOS performance was worst (i.e. longest) when a PA was directly involved in care, best when a PA was working on the unit (but not directly involved in care), and in between when no PA was working. All of these differences were statistically significant at the .05 level.

Exhibit 141: Comparison of Actual and Expected LOS from Assessment to Visit Disposition for ED Patients by CTAS for Hospitals with PAs Assigned to ED Care

CTAS Level	PA Status for Visit	Visits	Actual Assess. - Disp. (Hours)	Expected Assess. - Disp. (Hours)	Ratio of Actual / Expected	Lower CI	Upper CI	Result
CTAS 3	PA Involved	8,587	1.64	1.39	117.87	117.62	118.12	Significantly shorter time from assessment to disposition when PA involved
	PA on Shift	38,854	1.83	1.43	127.49	127.37	127.61	
	PA Not on Shift	116,192	1.93	1.45	132.92	132.85	132.99	
CTAS 4	PA Involved	13,512	0.67	0.42	160.95	160.53	161.38	Significantly longer time from assessment to disposition when PA involved
	PA on Shift	40,291	0.71	0.46	155.99	155.76	156.23	
	PA Not on Shift	116,090	0.74	0.47	158.88	158.75	159.02	

The final ED length of stay component examined was the total ED time (in hours) from patient triage until visit disposition. For both CTAS 3 patients and CTAS 4 patients, the LOS performance was best (i.e. shortest) when a PA was directly involved in care, 2nd best when a PA was working on the unit (but not directly involved in

care), and worst when no PA was working. All of these differences were statistically significant at the .05 level.

Exhibit 142: Comparison of Actual and Expected LOS from Triage to Visit Disposition for ED Patients by CTAS for Hospitals with PAs Assigned to ED Care

CTAS Level	PA Status for Visit	Visits	Actual Triage. - Disp. (Hours)	Expected Triage - Disp. (Hours)	Ratio of Actual / Expected	Lower CI	Upper CI	Result
CTAS 3	PA Involved	8,587	3.17	3.25	97.50	97.29	97.70	Significantly shorter time from triage to disposition when PA involved
	PA on Shift	38,854	3.49	3.37	103.55	103.45	103.64	
	PA Not on Shift	116,192	3.75	3.38	111.16	111.11	111.21	
CTAS 4	PA Involved	13,512	2.13	1.89	112.66	112.43	112.89	Significantly shorter time from triage to disposition when PA involved
	PA on Shift	40,291	2.27	1.92	118.13	118.00	118.27	
	PA Not on Shift	116,090	2.36	1.92	123.03	122.95	123.11	

The total ED LOS (i.e. triage to visit disposition) analysis was repeated, separating the ED visits into weekday visits (i.e. Monday to Friday) and weekend visits. For both weekday and weekend visits, the longest lengths of stay were when no PA was working on the unit. For weekday visits, the shortest LOS was for patients treated by a PA, but for weekend visits, the shortest LOS was for patients treated while a PA was on shift, but who did not have direct contact with the PA.

Exhibit 143: Comparison of Actual and Expected LOS from Triage to Visit Disposition for ED Patients by Weekday vs. Weekend for Hospitals with PAs Assigned to ED Care

Day of Week	PA Status for Visit	Visits	Actual Triage. - Disp. (Hours)	Expected Triage - Disp. (Hours)	Ratio of Actual / Expected	Lower CI	Upper CI	Result
Weekday	Involved	11,007	2.45	2.41	101.60	101.44	101.76	For weekday visits, PA cases have significantly shorter LOS
	On-Site - Not Involved	43,450	2.94	2.73	107.60	107.52	107.67	
	Not On Site	115,682	3.36	2.95	114.03	113.99	114.08	
Weekend	Involved	2,934	2.73	2.42	112.71	112.39	113.02	For weekend visits, cases with PA on site but not involved have significantly shorter LOS
	On-Site - Not Involved	10,549	2.97	2.68	110.88	110.72	111.04	
	Not On Site	54,190	3.00	2.62	114.48	114.41	114.55	

The total ED LOS analysis was repeated, separating the ED visits into day shift visits and evening visits. For both day and evening shift visits, the longest lengths of stay were when no PA was working on the unit. For day shift visits, the shortest LOS was for patients treated by a PA, but for evening shift visits, the shortest LOS was for patients treated while a PA was on shift, but who did not have direct contact with the PA.

Exhibit 144: Comparison of Actual and Expected LOS from Triage to Visit Disposition for ED Patients by Shift for Hospitals with PAs Assigned to ED Care

Shift	PA Status for Visit	Visits	Actual Triage. - Disp. (Hours)	Expected Triage - Disp. (Hours)	Ratio of Actual / Expected	Lower CI	Upper CI	Result
Day	Involved	9,384	2.25	2.33	96.47	96.30	96.64	For day shift visits, PA cases have significantly shorter LOS
	On-Site - Not Involved	25,267	2.63	2.60	101.40	101.30	101.50	
	Not On Site	73,116	3.18	2.79	114.08	114.02	114.14	
Evening	Involved	3,456	2.76	2.39	115.44	115.14	115.74	For evening visits, cases with PA on site, but not involved, have significantly shorter LOS
	On-Site - Not Involved	25,554	3.07	2.74	112.20	112.10	112.30	
	Not On Site	68,355	3.23	2.73	117.94	117.87	118.00	

Incomplete Visit Analysis

The comparison of rates of incomplete visits was restricted to cases where ED patients stayed long enough to be assessed, since only upon assessment could it be determined whether a PA was involved in their care. While the rates of incomplete visit were lowest (for both CTAS 3 and CTAS 4 patients) when a PA was involved in the care, they were not statistically significantly different from the incomplete visit rates when no PA was working in the ED.

Admission to Acute Care Analysis

The final analysis of the ED data was the assessment of the impact of the PA on the rate of admission of ED patients to inpatient acute care. For both CTAS 3 patients and CTAS 4 patients, the lowest rates of admission to acute care were for when PAs were involved in the care. However, these rates were not statistically significantly lower than the acute care admission rates for when PAs were not involved in care. The highest rates of admission to inpatient acute care were for those patients who were on the unit when a PA was working, but who did not have direct contact with the PA.

Exhibit 145: Comparison of Actual and Expected Admission to Inpatient Acute Care for ED Patients by CTAS for Hospitals with PAs Assigned to ED Care

CTAS Level	PA Status for Visit	Visits	Actual % Admit to Acute IP	Expected % Admit to Acute IP	Ratio of Actual / Expected	Lower CI	Upper CI	Result
CTAS 3	PA Involved	8,928	10.1%	11.3%	89.43	83.70	95.46	Lower acute care admission rate for PA visits, but not significant. Higher (not signif) admit rates for ED patients when PA on shift but didn't treat
	PA on Shift	42,757	12.4%	12.7%	97.63	95.02	100.30	
	PA Not on Shift	126,768	11.5%	12.3%	93.38	91.87	94.91	
CTAS 4	PA Involved	14,174	1.4%	1.8%	79.08	68.50	90.83	Lower acute care admission rate for PA visits, but not significant. Significantly higher admit rates for ED patients when PA on shift but didn't treat
	PA on Shift	46,724	2.3%	2.4%	97.31	91.57	103.31	
	PA Not on Shift	130,723	1.8%	2.1%	86.22	82.76	89.79	

Discussion

For both CTAS 3 and CTAS 4 patients (who represented 85% of the ED patients seen by PAs) there was a statistically significant shorter wait from triage to initial assessment when a PA was involved in care. The same significantly reduced length of ED stay was seen for both CTAS 3 and CTAS 4 patients for the total stay from triage to visit disposition.

However, for CTAS 4 patients, the length of stay from initial assessment until visit disposition was significantly longer when a PA was involved in care. Because the final decision re discharge of the patient from ED must be made by the supervising physician (and not the PA) it may be that the less active involvement of the SP in the care of the CTAS 4 (i.e. less urgent) ED patients contributes to delays in completion of the final discharge order by the PA. While there was a reduced LOS from triage to assessment for the ED patients with a PA involved in care, meaning that the treatment of the patients could be initiated more quickly, the patients still had a longer wait between assessment and discharge, but a shorter overall ED length of stay.

For all of the ED, the investigation has focused on whether there was an association between the PA involvement (or presence on the unit) and the outcome being assessed. Any finding of a statistically significant association does not in any way confirm causality, and we cannot conclude that the involvement of a PA alone was responsible for the result observed.

Impact of PA in LTC on Acute Care Hospital Usage

During the LTC team focus groups and administrative interviews, it was reported by some participants that they believed that one benefit of having a PA was that there had been a reduction of the number of

LTC residents who required transfer to a hospital ED or admission to a hospital for acute care.

Both CIHI NACRS ED records and DAD inpatient records require that when a patient is transferred to the hospital from a LTC facility, that the LTC facility be identified on the hospital record as the source of the patient. However, while this is mandated by the Ontario MOHLTC, one third of CIHI NACRS records where a patient is documented as having been transferred from a LTC facility don't identify the specific facility (i.e. they are coded using a generic home for the aged or nursing home facility code).

MOHLTC analysts extracted all of the 2007/08, 2008/09 and 2009/10 ED and inpatient records where the patient source was identified as being Trillium Centre, Grace Villa, or Macassa Lodge. These records were then grouped into 3 periods:

- P1 - The time prior to arrival of the PA at the LTC facility

- P2 - The first 6 months of the employment of the PA at the LTC facility

- P3 – The time after 6 months of employment of the PA until the end of the demonstration projects

Rates of ED Visits by LTC Residents

The analysis focused on determining the average monthly ED visit volume for LTC residents before the PA arrived (P1) and comparing the pre-PA volumes with the average ED visit volume after the PA has been working for 6 months (P3). The following table shows that for the 3 LTC facilities combined, there was an average of 4.26 transfers of LTC residents to a hospital ED each month prior to the arrival of the PA. Contrary to expectations, after the PA had been working for 6 months, the average monthly number of transfers to the ED increased significantly, to 10.35. By CTAS level, the significant increase in monthly ED transfer volumes was concentrated in CTAS 3 (urgent) visits. There was no significant increase in the CTAS 4 (less urgent) and CTAS 5 (non-urgent) ED visit rates.

Exhibit 146: Comparison of Monthly ED Visit Rates by LTC Residents from Facilities Employing PAs

ED Visit Triage Level	Average Monthly ED Visit Volumes		Ratio of P3 to P1	Significant Difference?
	Period 1 (pre-PA)	Period 3 (PA after 6 months)		
CTAS 1	0.06	0.16	2.70	No
CTAS 2	0.74	1.95	2.63	No
CTAS 3	2.24	6.35	2.84	*Yes*
CTAS 4	1.12	1.73	1.54	No
CTAS 5	0.08	0.16	2.03	No
Total	4.26	10.35	2.43	*Yes*
CTAS 1/2/3	3.04	8.46	2.78	*Yes*
CTAS 4/5	1.20	1.89	1.58	No

Rates of Acute Care Admission and Inpatient Days

The average monthly number of acute inpatient admissions of LTC residents where PAs were employed was slightly (but not significantly) lower after the PAs had been working for 6 months, compared to prior to the PA arrival. There was a large (and significant) reduction in the average number of alternate level of care (ALC) days, and this contributed to the reduction in the total monthly days of stay in acute care hospitals. However, this reduction in total hospital days was not statistically significant.

Exhibit 147: Comparison of Monthly Acute Care Admission and Days of Hospital Care by LTC Residents from Facilities Employing PAs

Activity Measure	Average Monthly Acute Care Inpatient Activity		Ratio of P3 to P1	Significant Difference?
	Period 1 (pre-PA)	Period 3 (PA after 6 months)		
Cases	5.82	5.70	0.98	No
Total Days	57.56	48.11	0.84	No
ALC Days	18.70	1.89	0.10	*Yes*

Discussion

While the participants in the LTC administrative interviews frequently reported that they believed that the presence of a PA had contributed to a reduction in transfers of their residents to the hospital ED, the analysis results showed there was a significant increase in transfers associated with the arrival of the PA.

After the analyses were completed, the project evaluation team convened a teleconference for the supervising physicians in the 3

PEPA LTC sites to discuss the results and to try to reconcile the findings with the perceptions that the PAs had contributed to reduced rates of transfer of residents to LTC.

One possible explanation presented was that the transfers to the ED may be more likely to happen on the evening or night shifts, or on the weekends, when the PA was not working. In 2009/10, there were more than 80,000 LTC residents transfer to an ED in Ontario, and 46% of these transfers occurred during a weekday day shift. For the 3 LTC facilities where the PAs were employed, the percent of transfers that happened during a weekday day shift ranged from 45% to 52%, similar to the Ontario average, and it did not appear that a concentration of transfers when the PAs were not working could explain the increase in the number of transfers.

Other factors identified by the LTC SPs that might have contributed to the increased rate of transfer of LTC residents to the ED were:

- A change in the acuity of LTC residents in Ontario may mean that the LTC population in 2007/08, prior to the arrival of the PAs, were less complex than the LTC residents at the end of the PEPA demonstration projects

- PAs may facilitate earlier identification of acute care requirements and be more likely to transfer residents to an ED for investigation

- Many transfers are required because of the limited diagnostic technology capabilities in LTC facilities. PAs may transfer residents to the ED in order to use the ED technologies to confirm and support management of chronic diseases

No Apparent "Business Case" for PAs in LTC Based on Hospital Cost Savings

The initial hypothesis that the presence of a PA could reduce use of hospitals by LTC residents, if proven, provided an opportunity to build a "business case" for PAs in LTC, based on the associated reduction in acute care hospital costs. However, given the results of the analyses, while some interviewees argued that the LTC residents were receiving better and more comprehensive care, there is no reduced hospital cost to balance the cost of employing PAs in LTC.

Technical Appendix I - CHC Purkinje Administrative Data

Existing CHC Administrative Data (Purkinje) Used to Support Assessment of Impact of PA Introduction

PAs in the CHC participated in the delivery of various services and activities for their clients. The broad variety of tasks and activities that PAs participate in is reflective of the overall mandate of CHCs to provide primary healthcare, health promotion and community development services using an interdisciplinary team of providers. In order to objectively evaluate the impact of deploying Physician Assistants (PAs) in Community Health Centres (CHCs) it was decided that an existing data collection process (Purkinje) would be utilized. The rationale for this decision was that this approach would result in the least disruption to CHC operations and would minimalize the need for additional effort at each site. In the CHC setting, the existing data collection system is the Purkinje system. Purkinje records collect information about client contacts including demographic and encounter characteristics.

PAs Were Involved in Many Other Activities Not Tracked Via Purkinje

However, during evaluation interviews, PAs reported that they spent a large portion of their time providing additional services that were not captured in the Purkinje dataset. Some of the additional activities that PAs in the demonstration project were involved in were:

Other Activities of PAs in CHCs

- Facilitation of Chronic Disease Management (CDM) Programs
- Public Health activities such as supporting H1N1 vaccination clinics
- Smoking cessation programs
- Public awareness/education on particular issues by participation at conferences
- Staff education
- Form completion (Ontario Disability Support Program, Ontario Works etc.) as well as other medical-legal letters

Tracking of PA Activity in the Purkinje System

Analysis of Activity Measures at Community Health Centres

In the section that follows, an analysis of the activity data captured through the CHC Purkinje dataset is provided. The applicability of the Purkinje data to support the PA evaluation was based on the comprehensiveness and comparability of data collection across the project sites, and the relevance of the data elements to potential performance indicators.

The encounter information includes providers involved in care. For purposes of this study, the identification of provider involvement

was expanded to include PAs. Data collection guidelines for the PAs and Supervising Physicians were provided as follows:

1. **Physician Assistant** - The Physician Assistant sees a Client by him/herself. In this case the Physician Assistant will create a clinical note (encounter) and send it to the Physician for co-sign.

2. **Physician Assistant and Physician** - The Physician conducts an assessment of a Client and then asks the Physician Assistant to do a procedure for the Client. In this case the Physician and the Physician Assistant will create separate clinical notes (encounters). The Physician Assistant's note will be sent for co-sign.

3. **Physician Assistant with Physician** - The Physician sees a Client while the Physician Assistant is in the room observing. In this case the Physician will create a clinical note (encounter) and in the Staff Involved field the Physician will record the Physician Assistant's name.

It was the responsibility of the Evaluation Team to develop the specifications of the data requirements for the study, and to conduct the analysis. This was done in concert with key stakeholders from selected sites with the assistance of the Association of Ontario Health Centres (AOHC). Data extraction from the Purkinje system was the responsibility of each participating CHC.

Extraction of Data from the Purkinje System

Preparation for the extraction of data from the Purkinje system at each site was provided by the Data Management Coordinator (DMC) at one of the participating CHCs. The DMC was seen as a valuable resource for understanding the technical and content details of the Purkinje system, with the ability to design and program the routines necessary to extract data required for this project.

Data collection covered a period leading up to the time when the PAs first arrived on-site up until March, 2010. The introduction of PAs varied from site to site, each having their own specific start dates. Each site was asked to supply data for a one year period prior to the PA's arrival, and then continue until the end of the study period. The intent was to ensure that there would be baseline information available to compare activity levels before and with PAs present.

It was decided that extraction of data for submission to the study would take place on a monthly basis. This would provide a frequency that involved minimal disruption while maintaining familiarity with the process, and thus promote a smooth flow of data for analysis.

Data Tracking and Extraction Challenges Led to Exclusion of 2 Sites and Partial Data from 3rd Site

With the usual start-up issues (understanding and implementing the extraction protocols), there were a number difficulties that occurred with data extraction during the study period. This resulted in the elimination of data from two sites from the study altogether. There were a number of reasons for the problems, including varying levels of staff sophistication with the technical aspects of the retrieval process, overall experience of data management staff, and the complexity of and difficulty using the Purkinje system itself. One recurrent and unresolved issue led to the inability of a third site being able to submit data for the last two months of the study period (February and March 2010).

Given constraints built into the Purkinje system, it was only possible to extract a maximum of two months worth of data from the system in a given cycle. The system actually allows for a maximum of 90 days to be extracted at one time, but for months with 31 days this constrained the queried period to two calendar months to ensure that no days were missed. This posed some challenges, especially at the beginning, when data for the year prior to the PA's arrival were to be extracted. It involved greater effort and sometimes led to errors in specifying advancing time periods for such a repetitive process.

With periodic assessments and adjustments of the process, sites were able to provide data as planned. Again, the supporting DMC was instrumental in facilitating and implementing the adjustments that were needed to maintain the flow of data. As indicated previously, difficulties with data from two sites resulted in the elimination of their data from analysis altogether. It should also be noted that one of these sites experienced an early departure of the PA, which also contributed to the decision to remove that site from the analysis.

Evaluation Questions

Evaluation Framework Identified Questions that Might be Informed by Analysis of Purkinje Data

The evaluation of the impact of PAs on services provided at the CHCs was planned to respond to a series of questions (outlined in the project evaluation framework). The administrative data provided through the Purkinje system was anticipated to be able to provide insights into some of those questions. The questions below reflect areas where analysis of Purkinje data could provide useful insights.

- What is the impact of the PA role on throughput?
- Has the PA facilitated expansion of availability of service to a greater range of patients/clients?
- What is the impact of PAs on productivity? (resources per unit output)
- What is the impact of PAs on physician efficiency?

6 Measures of Client Activity Tracked Using Purkinje System, with Comparison of Pre-PA and Post PA Arrival Activity

The impact of Physician Assistant (PA) deployment in Community Health Centres (CHCs) was assessed using six measures of client activity: (1) Appointments, (2) Clients, (3) Assessments, (4) New Medications, (5) Referrals, and (6) Procedures. The measures were derived as volumes per month, distinguishing the last six (6) months prior to the arrival of the PA from the latest six (6) months of data received when the PA was working on-site.

Results

The exhibit on the following page presents the results of the analysis across the six measures of client activity. Results have been presented for three scenarios:

1. Activity of all physicians and physician assistants;

2. Isolating the activity to physicians only; and

3. Isolating the activity to <u>supervising</u> physicians only.

For each measure of client activity, the average monthly volumes during the time prior to the arrival of the PA, and the average monthly volumes during the time when the PA was working are shown. The ratio of the average monthly activity when the PA was working to the average monthly activity before the PA arrived is also shown. If this ratio is greater than 100%, then it indicates that the monthly activity volume was higher with the PA than without the PA. The "Signif?" columns show whether the activity volume differences between the pre-PA and the PA period was statistically significant (at the .05 level).

The analysis of the changes in activity is based on the data from 3 CHCs[8]. The analysis of the number of medications, referrals, and procedures is based on the data from 2 CHCs (reporting of these activities is not mandatory and is incomplete for CHCs that do not have electronic medical records).

On the whole, the comparisons from the time prior to the arrival of the PA to the latest period where the PA was working on-site showed significant changes, with a few exceptions.
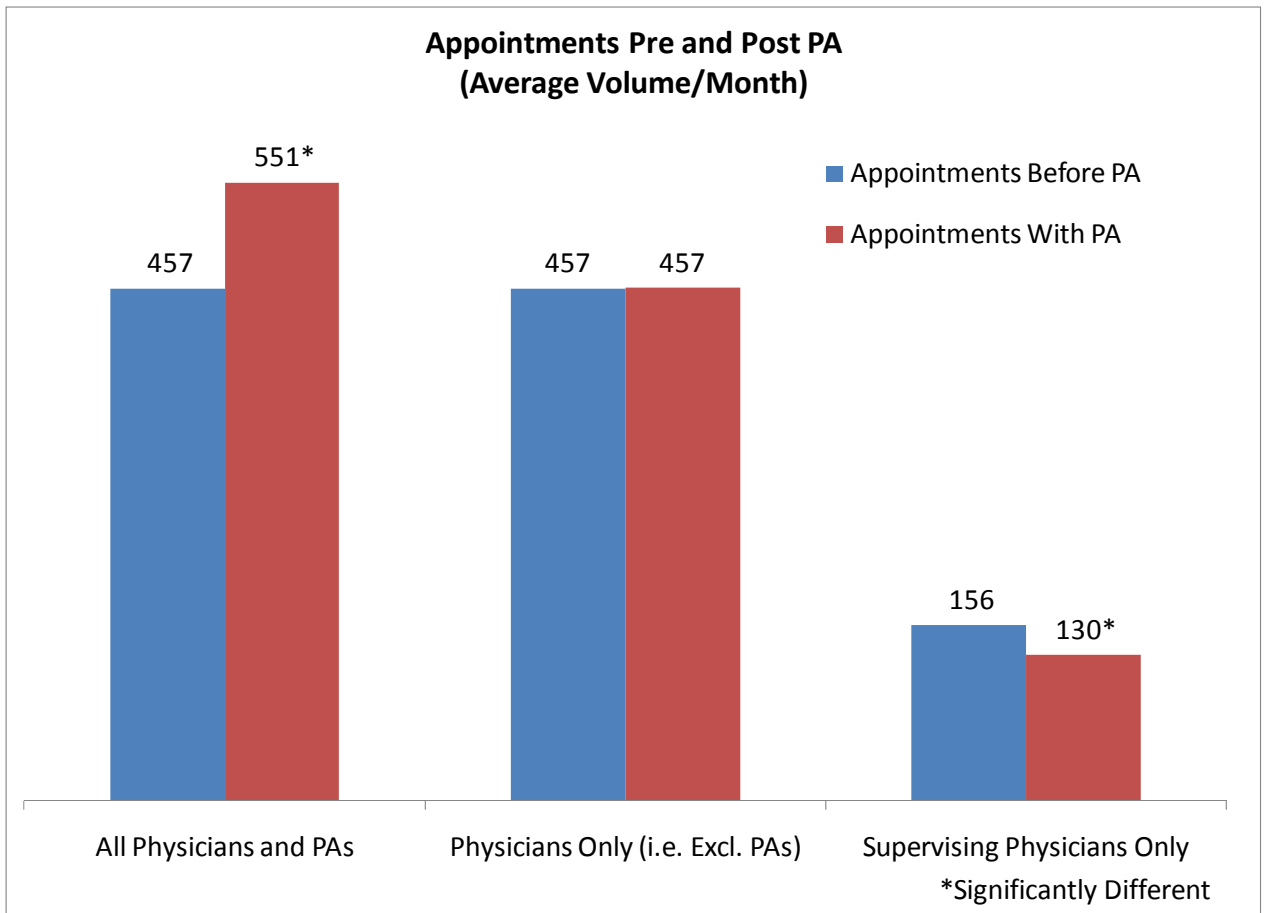
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[8]   Anishwabe, North Hamilton, and Somerset West. Data from Hamilton Urban Core was reported but was excluded from the analysis because of data quality concerns.

Exhibit 148:   Comparison of Pre-PA and Post-PA CHC Activity Measures

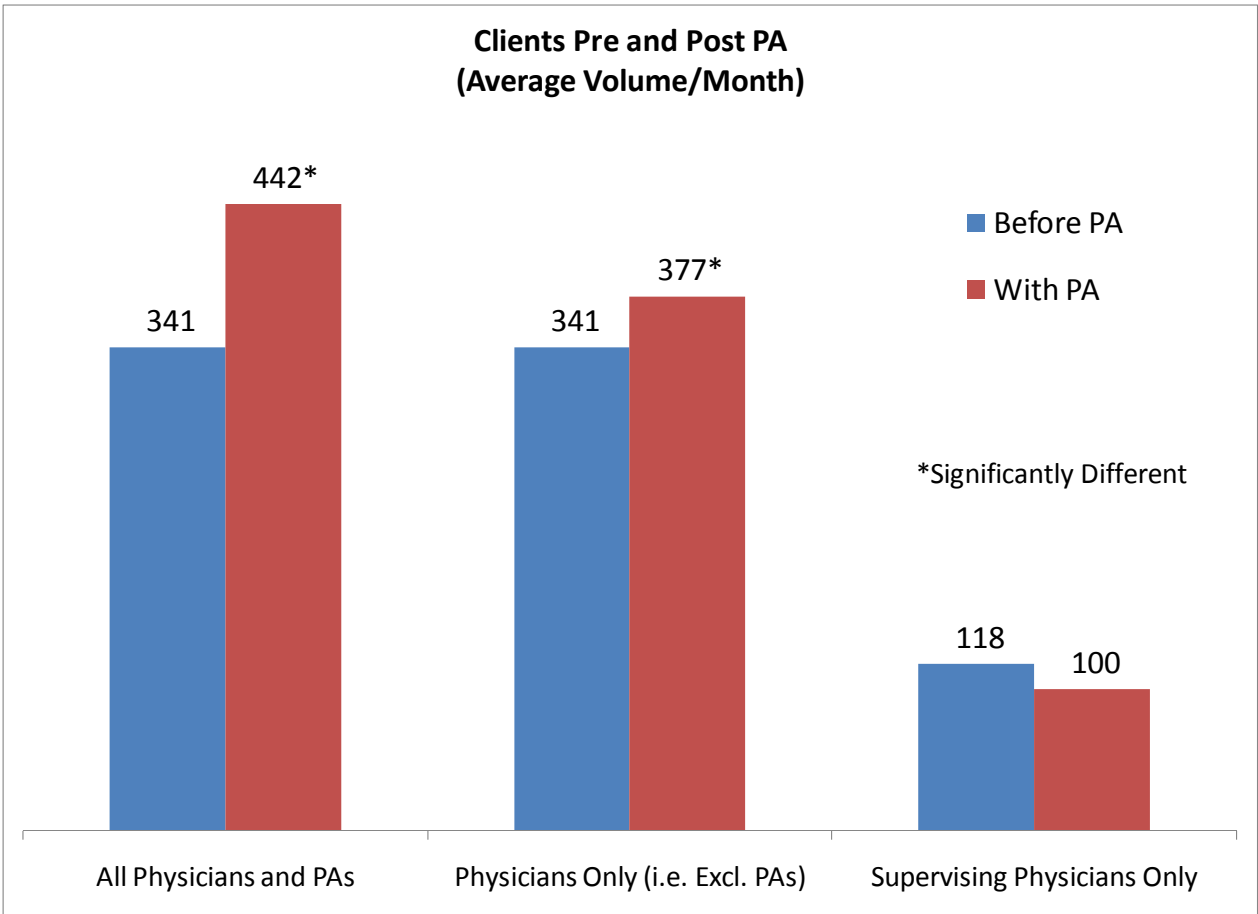| Community Health Centres - Activity Measures							
Activity Measure	Time Period	All Physicians and PAs		Physicians Only (i.e. Excl. PAs)		Supervising Physicians Only	
		Avg. Vol/ Month	Signif?	Avg. Vol/ Month	Signif?	Avg. Vol/ Month	Signif?
Appointments	Before PA	457	Yes	457	No	156	Yes (Red'n)
	With PA	551		457		130	
	Ratio of w/PA to Pre-PA	120.7%		100.1%		83.0%	
Clients	Before PA	341	Yes	341	Yes	118	No (Red'n)
	With PA	442		377		100	
	Ratio of w/PA to Pre-PA	129.6%		110.5%		84.6%	
Assessments	Before PA	2,692	Yes	2,646	Yes	831	Yes
	With PA	2,933		2,833		1,006	
	Ratio of w/PA to Pre-PA	108.9%		107.0%		121.0%	
Medications	Before PA	366	Yes	364	Yes	110	Yes
	With PA	774		716		193	
	Ratio of w/PA to Pre-PA	211.5%		196.6%		176.1%	
Referrals	Before PA	107	Yes	106	Yes	38	Yes
	With PA	156		150		78	
	Ratio of w/PA to Pre-PA	146.5%		141.9%		204.1%	
Procedures	Before PA	50	Yes	49	Yes	17	Yes
	With PA	152		145		28	
	Ratio of w/PA to Pre-PA	303.7%		294.1%		162.7%	

For the first measure, the number of client appointments, the following exhibit shows that there was a significant increase in the number of appointments with physicians and PAs after the introduction of the PAs. However, there was no change in the average number of monthly appointments with physicians (i.e. excluding appointments with PAs), and there was a significant decrease (of 17%) in the average number of monthly appointments for the specific physicians who had assumed the role of supervising the PA.

Exhibit 149:   Pre and Post PA – Appointments

**Appointments Pre and Post PA
(Average Volume/Month)**

- Appointments Before PA
- Appointments With PA

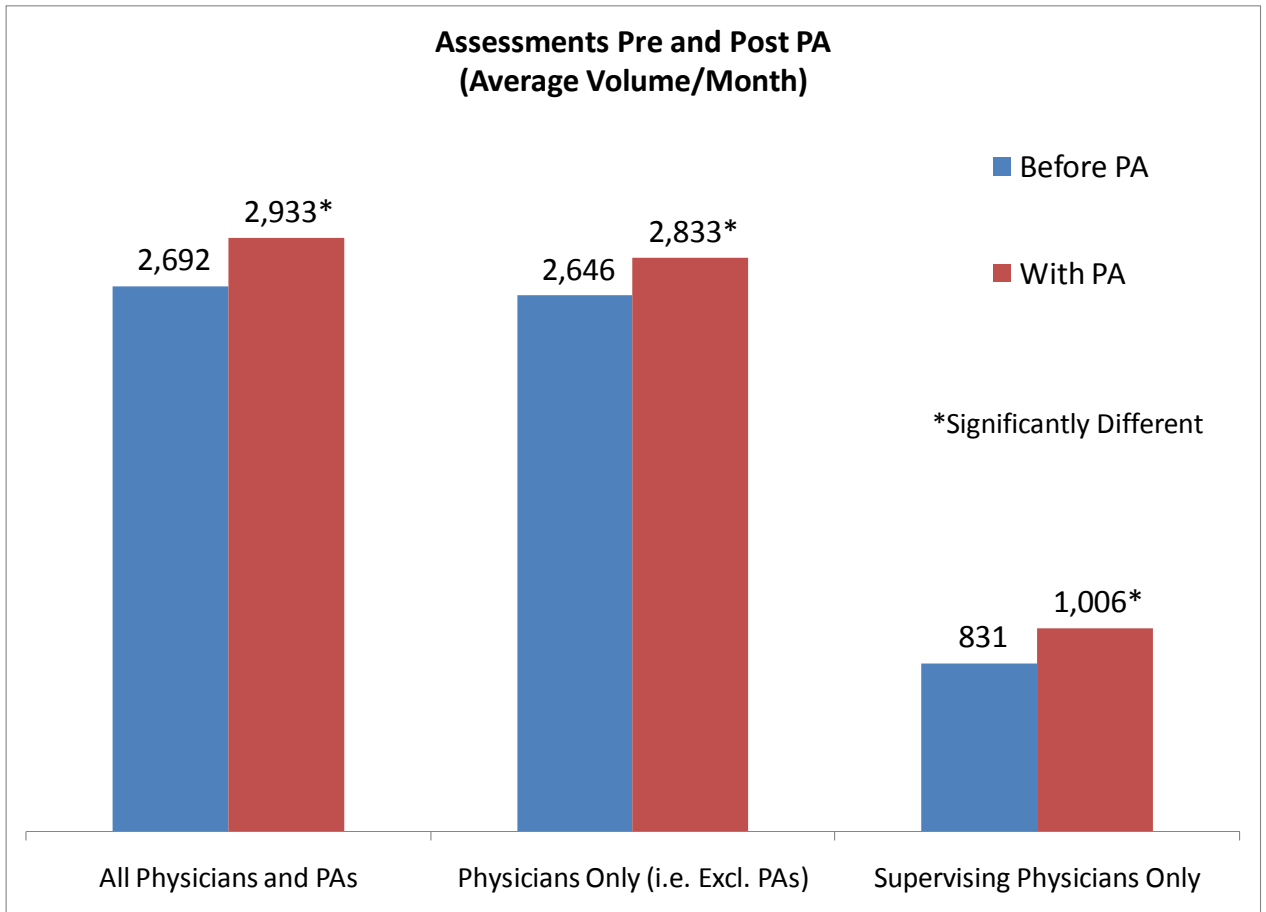| Category	Appointments Before PA	Appointments With PA
All Physicians and PAs	457	551*
Physicians Only (i.e. Excl. PAs)	457	457
Supervising Physicians Only	156	130*

*Significantly Different

There was a significant increase in the number of distinct clients seen in the CHCs once the PAs started, but there was a non-significant decrease in the number of clients seen specifically by the supervising physicians.

Exhibit 150:   Pre and Post PA – Clients

Clients Pre and Post PA
(Average Volume/Month)

Legend:
- Before PA
- With PA

*Significantly Different

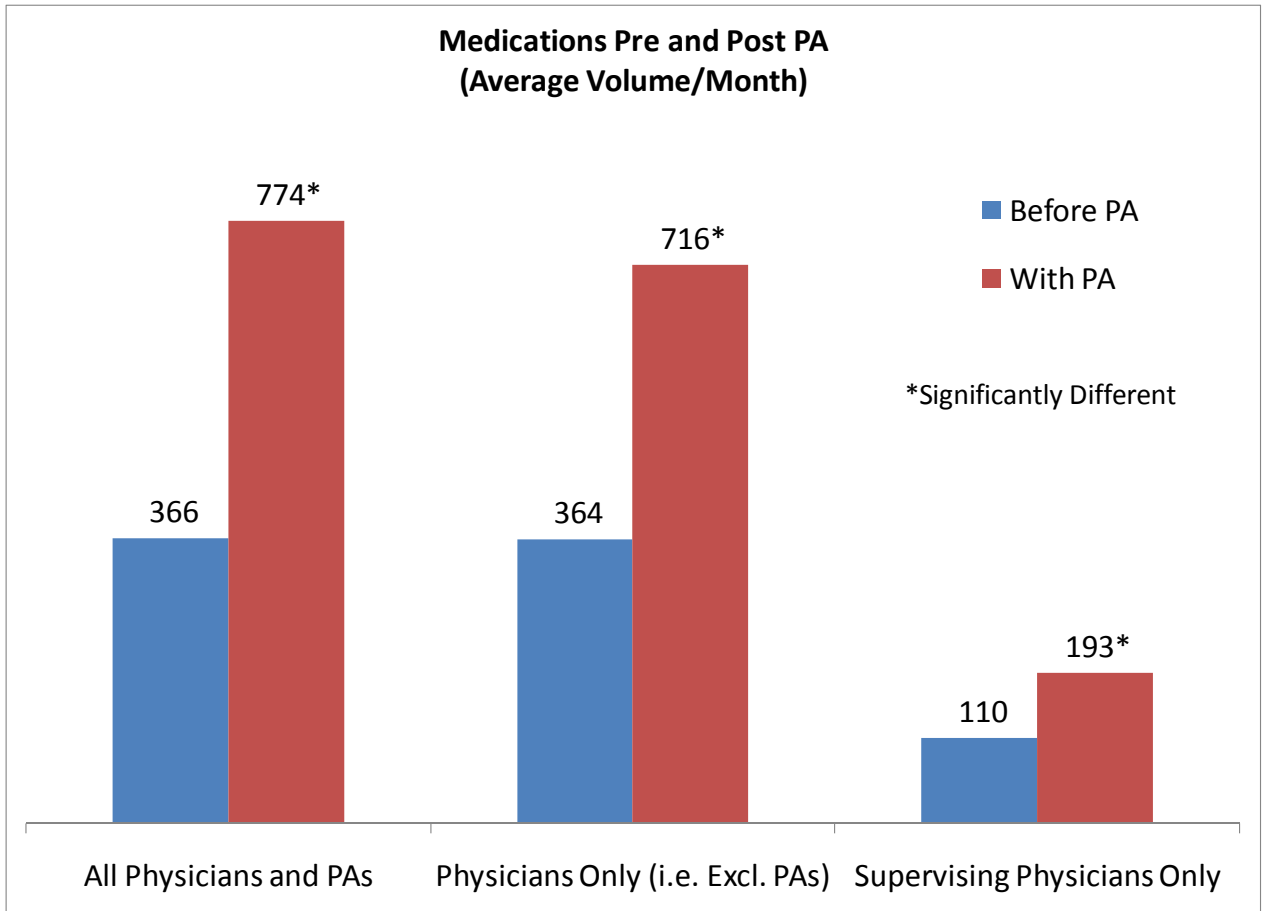|	All Physicians and PAs	Physicians Only (i.e. Excl. PAs)	Supervising Physicians Only
Before PA	341	341	118
With PA	442*	377*	100

There was a small (8.9%) but significant increase in the average number of monthly assessments, both overall, and for the physicians (i.e. excluding assessments by PAs). The supervising physicians reported a significant 21% increase in the number of assessments they did each month after the PAs started.

Exhibit 151:   Pre and Post PA – Assessments

**Assessments Pre and Post PA
(Average Volume/Month)**

Before PA — With PA

*Significantly Different

| Category	Before PA	With PA
All Physicians and PAs	2,692	2,933*
Physicians Only (i.e. Excl. PAs)	2,646	2,833*
Supervising Physicians Only	831	1,006*

The following exhibit shows that there was a very large (and significant) increase in the average monthly number of medication orders from the pre-PA to with PA period.

Exhibit 152:   Pre and Post PA – Medications

**Medications Pre and Post PA
(Average Volume/Month)**

Before PA

With PA

*Significantly Different

774*

366

716*

364

193*

110

All Physicians and PAs   Physicians Only (i.e. Excl. PAs)   Supervising Physicians Only
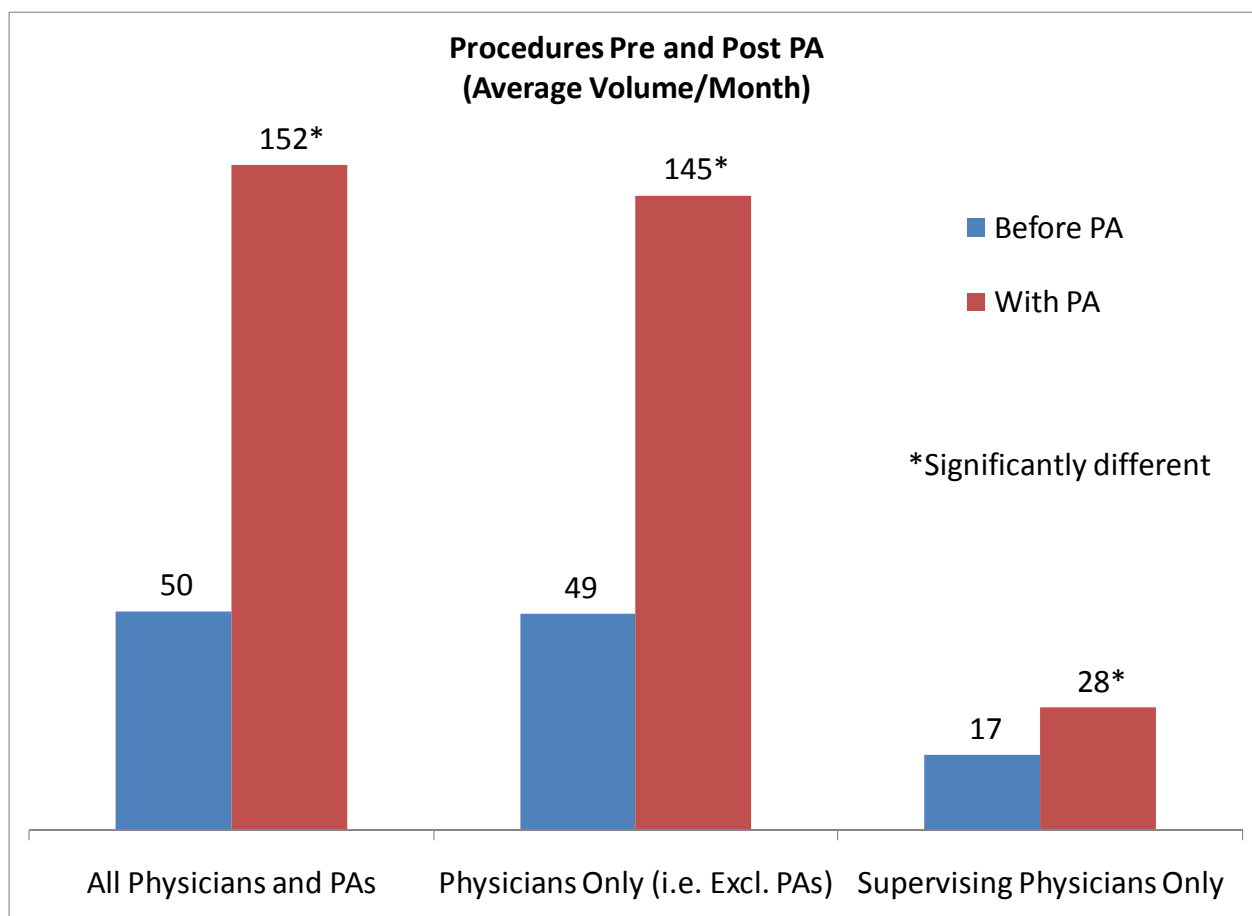
There was also a significant increase in the reported monthly average number of referrals of clients to other services (e.g. imaging, therapies, etc.).

Exhibit 153:   Pre and Post PA – Referrals
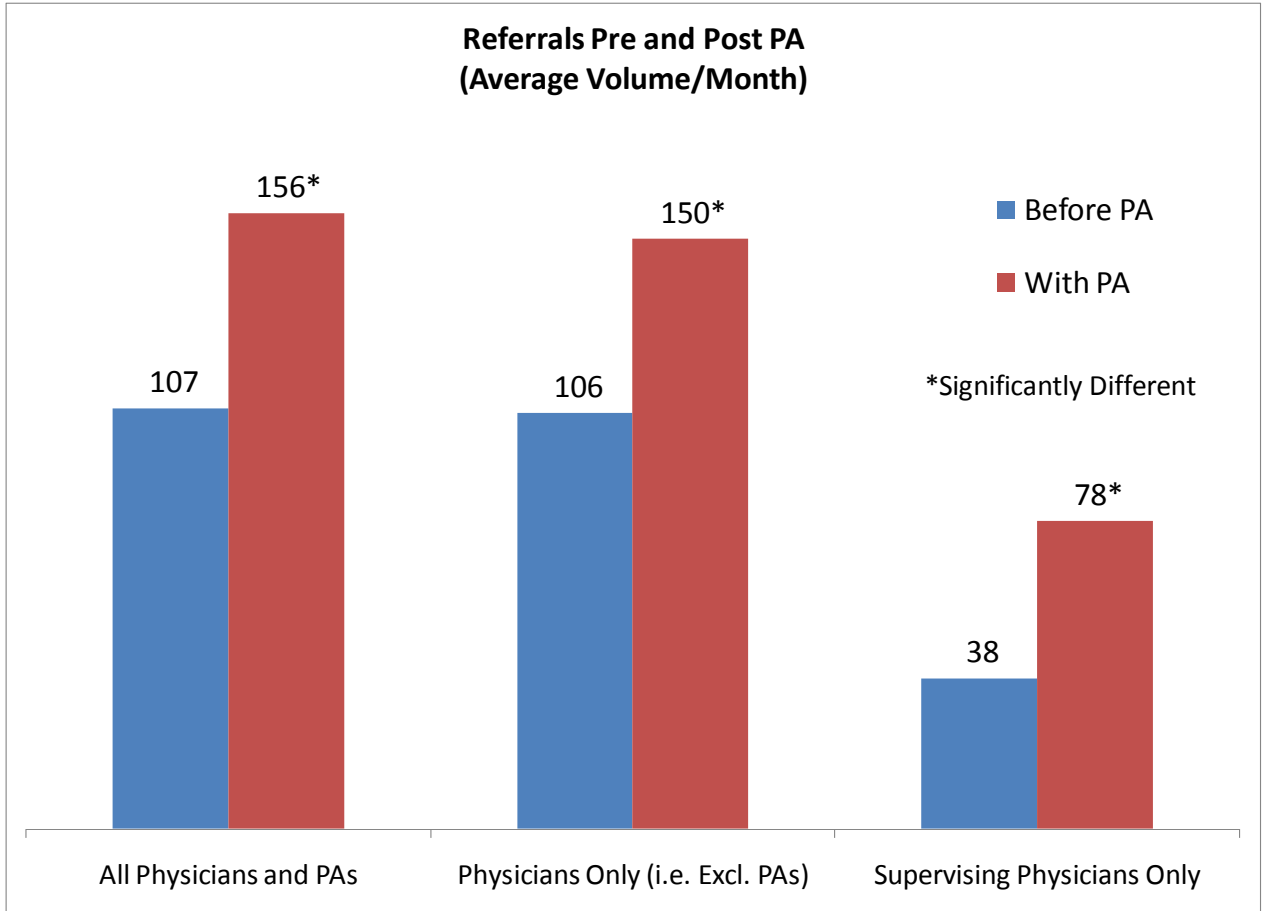
There was also a significant increase in the average number of procedures reported each month, but more than 90% of the procedure activity was reported by a single CHC.

Exhibit 154:   Pre and Post PA – Procedures

**Procedures Pre and Post PA
(Average Volume/Month)**

- Before PA
- With PA

*Significantly different

152*
145*
50
49
28*
17

| All Physicians and PAs | Physicians Only (i.e. Excl. PAs) | Supervising Physicians Only |

On the whole, the changes would indicate that the presence of PAs on-site had an impact on the organizations. Significantly higher levels of activity were reported, indicating greater throughput. The reduction in appointments for supervising physicians likely resulted from additional responsibilities of managing the PAs, which in turn had an impact on the results seen for all physicians. However, this did not result in supervising physicians seeing significantly fewer clients.

- It appears that PAs can enhance throughput in CHCs, and enhance the ability to provide service to CHC clients.

- On other indicators of service activity that are possible to measure via the Purkinje system (i.e. assessments, referrals, procedures, new medications), there seems to be an increase in volumes associated with PAs providing service, again demonstrating expanded provision of services.

Technical Appendix J - PEPA PA Encounter Reports

Long-Term Care PA Encounter Reports

The PAs at the 3 LTC facilities tracked daily activity using a tracking sheet with pre-defined activities listed. The activities were grouped into 4 broad categories:

- Patient care (excl. treatments/procedures) – 23 activities
- Treatment – 14 activities
- Administrative – 6 activities
- Other – 11 activities

In total, 35,475 counts of activity were reported during the data collection period. The average number and distribution of weekly activities are shown in the following 4 exhibits. 91% of the reported activities were patient care activities (excluding treatments).

Exhibit 155: Distribution of Average Weekly Encounters (3 Sites) by Activity Type
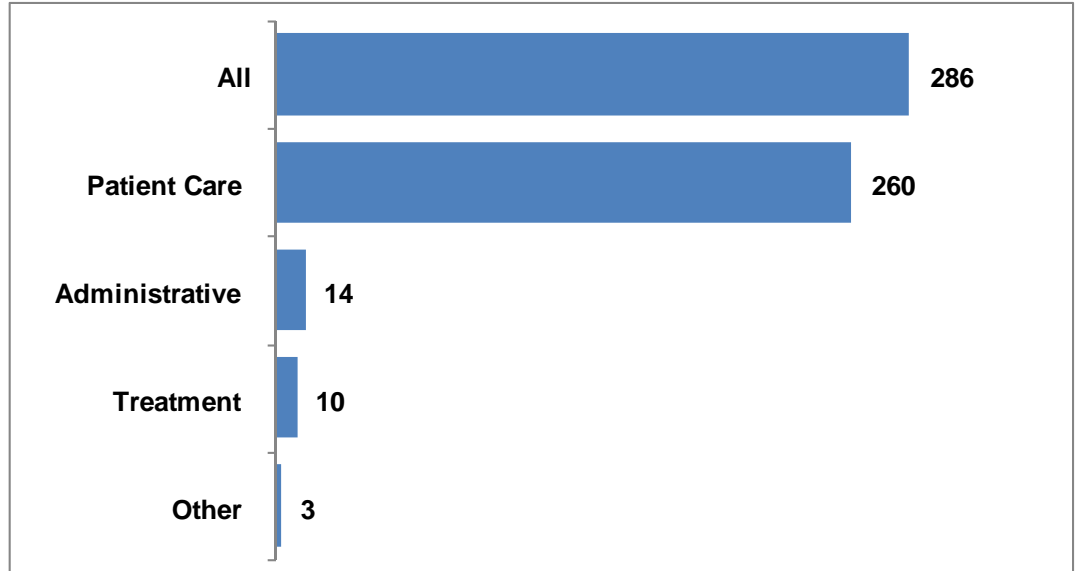
Exhibit 156: Percentage Distribution of Average Weekly Patient Care Encounters (3 sites) by Patient Care Activity
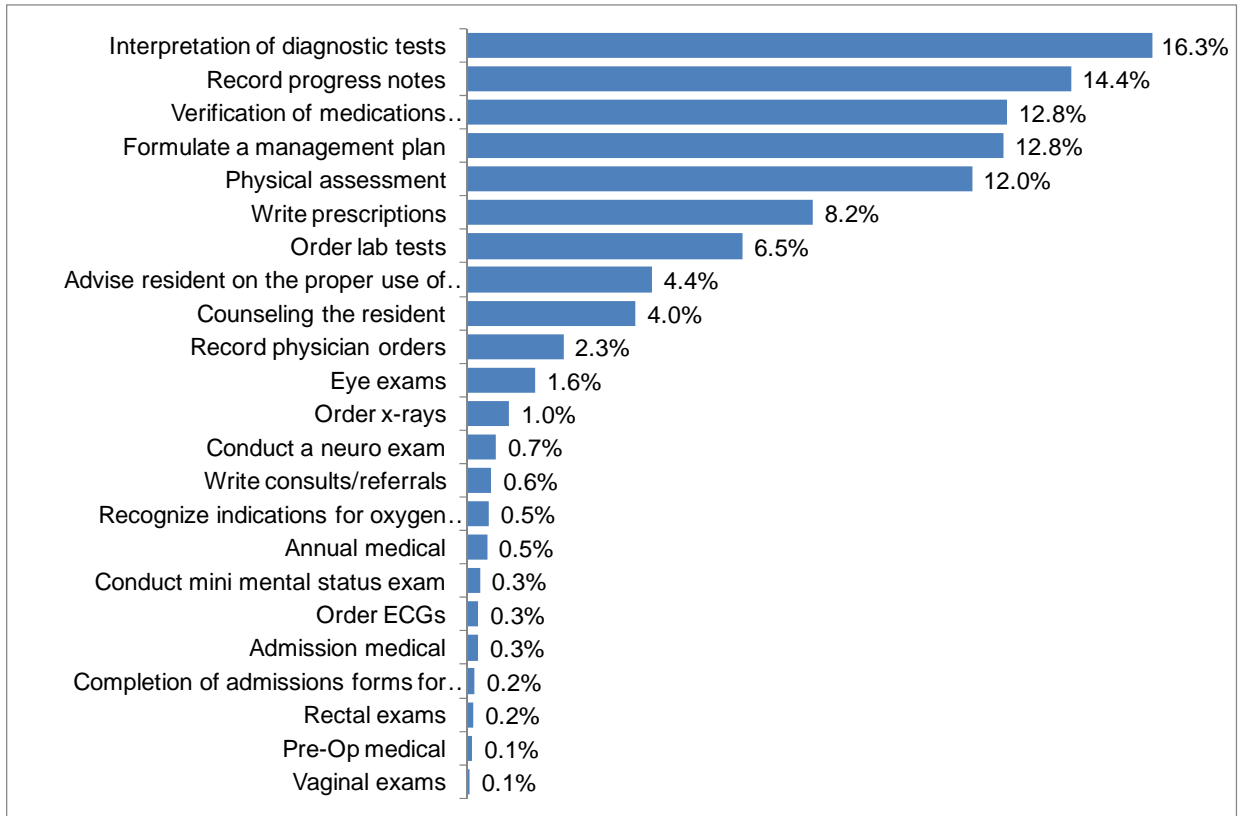
Patient Care Activity	Percentage
Interpretation of diagnostic tests	16.3%
Record progress notes	14.4%
Verification of medications..	12.8%
Formulate a management plan	12.8%
Physical assessment	12.0%
Write prescriptions	8.2%
Order lab tests	6.5%
Advise resident on the proper use of..	4.4%
Counseling the resident	4.0%
Record physician orders	2.3%
Eye exams	1.6%
Order x-rays	1.0%
Conduct a neuro exam	0.7%
Write consults/referrals	0.6%
Recognize indications for oxygen..	0.5%
Annual medical	0.5%
Conduct mini mental status exam	0.3%
Order ECGs	0.3%
Admission medical	0.3%
Completion of admissions forms for..	0.2%
Rectal exams	0.2%
Pre-Op medical	0.1%
Vaginal exams	0.1%

Exhibit 157: Percentage Distribution of Average Weekly Treatment Encounters (3 sites) by Treatment Type

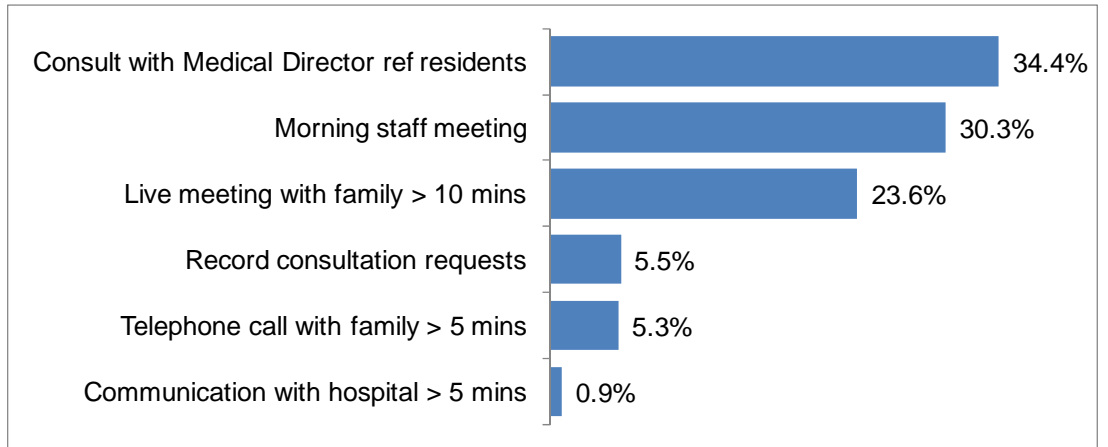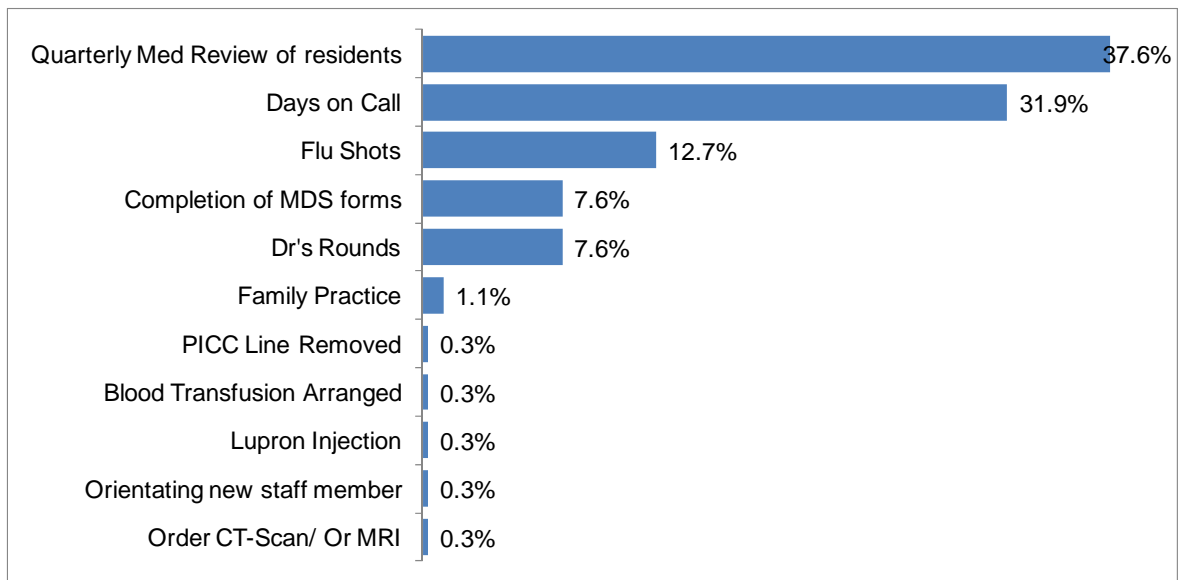| Treatment Type	Percentage
Foot care	44.9%
Perform wound care	40.5%
Removal of cerumen from ear canals	3.4%
Collect body secretions, fluids, or skin…	3.1%
Order transfer of resident to other health care…	3.0%
Steri Strip designated wounds	1.9%
Suture designated wounds	1.6%
Replace feeding G-tubes with a temporary…	0.4%
Perform small excisional biopsies	0.3%
Perform punch biopsies	0.3%
Urinary catheterization	0.2%
Doppler	0.2%
Immobilize suspected fractures as required	0.1%
Perform CPR	0.0%

Exhibit 158: Percentage Distribution of Average Weekly Administrative Encounters (3 sites)

Category	Percentage
Consult with Medical Director ref residents	34.4%
Morning staff meeting	30.3%
Live meeting with family > 10 mins	23.6%
Record consultation requests	5.5%
Telephone call with family > 5 mins	5.3%
Communication with hospital > 5 mins	0.9%

Exhibit 159: Percentage Distribution of Average Weekly Other Encounters (3 sites)

Category	Percentage
Quarterly Med Review of residents	37.6%
Days on Call	31.9%
Flu Shots	12.7%
Completion of MDS forms	7.6%
Dr's Rounds	7.6%
Family Practice	1.1%
PICC Line Removed	0.3%
Blood Transfusion Arranged	0.3%
Lupron Injection	0.3%
Orientating new staff member	0.3%
Order CT-Scan/ Or MRI	0.3%

Diabetes Clinic PA Encounter Reports

Activity data for the PAs employed in diabetes clinics were tracked using the electronic health record system in place in one of the participating sites. The system was modified to allow the PA in the other site to also access the system and track activities and patient age and gender.

The activity data reported below is based on the final 25 weeks of PA activity in the two diabetes clinic sites. Only data for those days where there was at least 120 minutes of PA activity time reported have been included in the analyses of daily activity.

One centre had data for 97 working days during the final 25 weeks, while the other had data for 52 working days. The PA in the first centre reported an average of 4.9 hours of activity per day, while the PA in the second centre reported an average of 4.5 hours of activity per day.

The following table shows the breakdown of reported time by broad category.

Exhibit 160: Distribution of Reported PA Activity by Activity Type

PA Activity	Time		% of Total Reported Time
	Minutes	Hours	
Consultation	18,385	306	41.2%
Complex Medical Specific Re-Assessment	12,600	210	28.3%
Other	8,070	135	18.1%
Insulin Therapy Support	4,085	68	9.2%
Chronic Disease Assessment Premium	1,450	24	3.3%
Grand Total	44,590	743	100.0%

More than 90% of the activity reported by the PAs in the diabetes clinics was activities performed in the presence of the patient.

Exhibit 161: Distribution of Reported PA Time by Supervision Status

Supervision Category	% of Reported Time
Patient Present, No Direct Supervision	63.4%
Patient Present, Direct Supervision	28.1%
No Patient Present, No Direct Supervision	8.5%
No Patient Present, Direct Supervision	0.1%

Potential OHIP Revenue Analysis

Long-Term Care

The physician assistant in the LTC homes completed an encounter report that captured their daily activities. Some of these activities, separately or together with other activities, corresponded to OHIP schedule of benefit codes. The table below shows the types of

activities that were captured in these reports, and the corresponding OHIP codes assigned to these activities.

Where more than one OHIP code could be assigned to an activity (e.g. wound care would correspond to multiple codes, depending on the size of the wound), the code with the minimum $ amount has been assigned to the activity. There were also instances that while most likely there is a corresponding OHIP code, there was not enough information to decide which OHIP code to use (e.g. immobilizing fractures depends on where the fracture is, and the activity does not specify that.)

Exhibit 162: Distribution of Reported PA Time by Supervision Status

Activity	OHIP code	Description of OHIP code	$
Patient Care			
Admission medical	W102	Admission Assessment- Type 1	$58.20
Annual medical	W109	Annual Physical Examination	$58.20
Pre-Op medical	W903	Pre-dental/pre-operative general assessment	$58.20
Completion of admissions forms for resident (Short Stay)	N/A		
Counselling the resident	K013	Counselling: individual care	$51.70
Conduct mini mental status exam	K032	Specific neurocognitive assessments	$51.70
Eye exams	A112	Periodic Oculo-visual Assessment- aged 65 years and above	$40.15
Physical assessment	W002	first 4 subsequent visits per patient per month	$31.25
Conduct a neuro exam	Part of W002	first 4 subsequent visits per patient per month	$31.25
Verification of medications (reconciliation)			
Vaginal exams			
Rectal exams			
Advise resident on the proper use of medication.			
Recognize indications for oxygen therapy			

Activity	OHIP code	Description of OHIP code	$
Formulate a management plan			
Order x-rays			
Order lab tests			
Order ECGs			
Write prescriptions			
Record progress notes			
Record physician orders			
Write consults/referrals			
Interpretation of diagnostic tests			
Treatments			
Collect body secretions, fluids, or skin scraping, swabs	N/A		
Removal of cerumen from ear canals	G420	Ear syringing and/or extensive curetting or debridement uni- or bilateral	$11.25
Perform wound care	N/A		
Steri Strip designated wounds			$20.00
Suture designated wounds			$20.00
Perform punch biopsies	Z113	Biopsy(ies) – any method, when sutures are not used	$29.60
Perform small excisional biopsies	Z116	Biopsy(ies) – any method, when sutures are used	$29.60
Foot care	N/A		
Doppler	N/A		
Urinary catheterization	Z611 (plus W002)	Bladder: Catheterization- hospital	$8.55
Order transfer of resident to other health care facility	N/A		
Replace feeding G-tubes with a temporary access via a Foley	Z520 (plus W002)	change of gastrostomy tube	$10.65
Immobilize suspected fractures as required	N/A (plus W002)		

Activity	OHIP code	Description of OHIP code	$
Perform CPR	Never reported		
Administrative			
Morning staff meeting	N/A		
Consult with Medical Director ref residents	N/A		
Communication with hospital > 5 mins	N/A		
Telephone call with family > 5 mins	N/A		
Live meeting with family > 10 mins	K002	Interview with relatives or a person who is authorized to make a treatment decision on behalf of the patient in accordance with the Health Care Consent Act, conducted for a purpose other than to obtain consent	$58.35
Record consultation requests	N/A		
Other			
Days on Call	N/A		
Quarterly Med Review (of residents)	W004	General re-assessment of patient in nursing home (per the Nursing Homes Act) Note: W004 may be claimed 6 months after Annual Health Examination (per the Nursing Homes Act)	$20.60
Order CT-Scan/ Or MRI	N/A		
Orientating new staff member	N/A		
Flu Shots	G590 (plus W002)	Injections or infusions: Influenza agent – with visit	$4.50
Lupron Injection	G538 (plus W002)	active immunication: unspecified agent - with visit (each injection)	$4.50
Blood Transfusion Arranged	N/A		
Dr's Rounds	N/A		
PICC Line Removed	N/A		
Completion of MDS forms	N/A		
Family Practice	N/A		

In analyzing the activities, the ones that are part of physical assessment (W002) were only considered if they generated extra visits above the maximum of 4 subsequent visits per month reimbursed by W002. These extra visits were assumed to be reimbursed with OHIP code W001 (additional subsequent visits (maximum 4 per patient per month)) at a rate of $20.60

Through the analysis, it was found that there is potential to bill for an average of $621 per working day if PAs were allowed to bill at a 100% rate of what the physicians bill for. This average billing potential significantly varied by location (from $168 to $884) and corresponded to an average of $3.90 per resident per working day (ranging from $1.20 to $9.20).

The current PA contract generally comprises of 52 weeks (5 working days per week) with 4 weeks of vacation per year, and 11 statutory holidays. With an average of 5 sick days per year, the number of working days per year is calculated around 224 days. At 75% compensation rate (consistent with most PA compensation models), the average billing rate (at 75%) of $466 over 224 working days per year would amount to potential average OHIP revenue of $104,384 per year (ranging from $28,224 to $148,512). Comparing the average figure of $89,750 with the annual salary and benefits of the PAs at around $96,000, it does seem that the PA role could be economically viable.

Diabetes Clinics

At the diabetes clinics, PAs were asked to record the following activities, as coded in the OHIP schedule of benefits:

Exhibit 163: Diabetes Clinic PA Activities and OHIP Billing Code

Code	Description	$ (OHIP SOB Oct 2010)
A135	Consultation	148.95
A131	Complex Medical Specific Re-Assessment	67.35
K029	Insulin Therapy Support	58.35
G500	Insulin Supervision	31.80
E078	Chronic Disease Assessment Premium	Add 50%

In analyzing the data it was observed that while the code "E078-Chronic Disease Assessment Premium" has to be used in conjunction with other codes to allow a 50% surplus to the base code reimbursement fee, in all instances this code was used in silo. So it was not known what the base activity was to add the 50% premium to the base reimbursement fee. As such, the average reimbursement fee for all the OHIP codes reported by any of the two facilities was calculated ($85.06 for Toronto, $74.18 for Windsor) and it was assumed that an instance of E078 reported would add 50% premium to the average reimbursement for each of the locations. So an E078 was deemed to be reimbursed by $127.59 for the Toronto clinic and $111.26 for the Windsor clinic.

The potential OHIP revenue per working day (at 100% compensation) was found to be $367. This figure varied significantly between the two clinics (from $104 in one to $629 in the other). At a compensation rate of 75%, and with a similar assumption of 224 working days per week, there is potential average OHIP revenue of $61,572 per year (variable from $17,472 in one clinic to $105,672 in the other). Comparing the average figure of $61,572 with the annual salary and benefits of the PAs at around $96,000, the PA role would not be economically viable by itself in this setting.

OHIP Revenue Analysis Summary

The table below shows both the 100% and 75% rates, the estimated days worked per year by a PA, the estimated salary and benefits cost of a PA, and then compares the potential revenue from OHIP with this actual cost. A positive number indicates that the annual revenue would exceed the annual PA cost.

Exhibit 164: Summary of PEPA Site Potential PA OHIP Revenue Analysis

PEPA Site	Estimated Daily OHIP Billing *		PA Worked Days per Year **	Estimated Annual OHIP Revenue		Estimated Annual PA Cost (Salary and Benefits)	Annual PA Revenue Minus PA Cost	
	100% Rate	75% Rate		100% Rate	75% Rate		100% Rate	75% Rate
LTC Average	$ 621	$ 466	224	$ 139,179	$ 104,384	$ 96,000	$ 43,179	$ 8,384
Diabetes Avg.	$ 367	$ 275	224	$ 82,096	$ 61,572	$ 96,000	$ (13,904)	$ (34,428)
* Based on review of reported activities and identification of activities billable via OHIP.								
** Assumes 5 working days per week, 4 weeks vacation, 11 statutory holidays.								

At 75% OHIP rates, on average the revenue for the PAs in LTC would exceed their annual cost, while on average the revenue for the PAs in the diabetes clinics would not be enough to cover the costs. However, for 3 of the 5 sites, the estimated PA revenue would cover the PA cost (the 2 extremely low revenue sites most likely reflect

incomplete data collection by one PA in LTC, and the under-utilization of the PA and poor coding of activity in one diabetes clinic).

Technical Appendix K - Physician Supervision Time Analysis

Initial Results (To January 1999)

Over the approximately 10 months where the supervising physician time survey was in place, the project received 610 completed time surveys from 55 individual hospital supervising physicians. 166 of these records were considered to be invalid for purposes of analysis because:

- Evaluation team follow up with physician indicated data quality problem (e.g. misunderstanding of distinction between direct and indirect supervision, cumulative tracking of supervision time, etc.)

- Greater than 12 hours of supervision time was reported for a single shift

- Greater than 1 hour of administrative time per day reported since prior time survey submission

- Greater than 4 hours of direct supervision time per shift (except if PA is providing intra-operative care as assist to surgeon)

This left 444 hospital time survey records to be included in the analysis. These records were then categorized according to the elapsed time since the supervising physician began their supervising role. Records for physicians supervising individuals formally trained as PAs (e.g. U.S. PAs, Canadian military PAs) were separately identified from records for physicians supervising international medical graduates (IMGs). The clinical area worked by the supervising physician was also coded.

Average Administrative and Supervisory Time

The following table shows the average reported daily administrative time (averaged over all days, 7 days per week) and the average daily direct and indirect supervision time (based on the time for the last shift worked prior to completing the survey).

Exhibit 165:   Average Daily Supervising Physician Time by Clinical Area
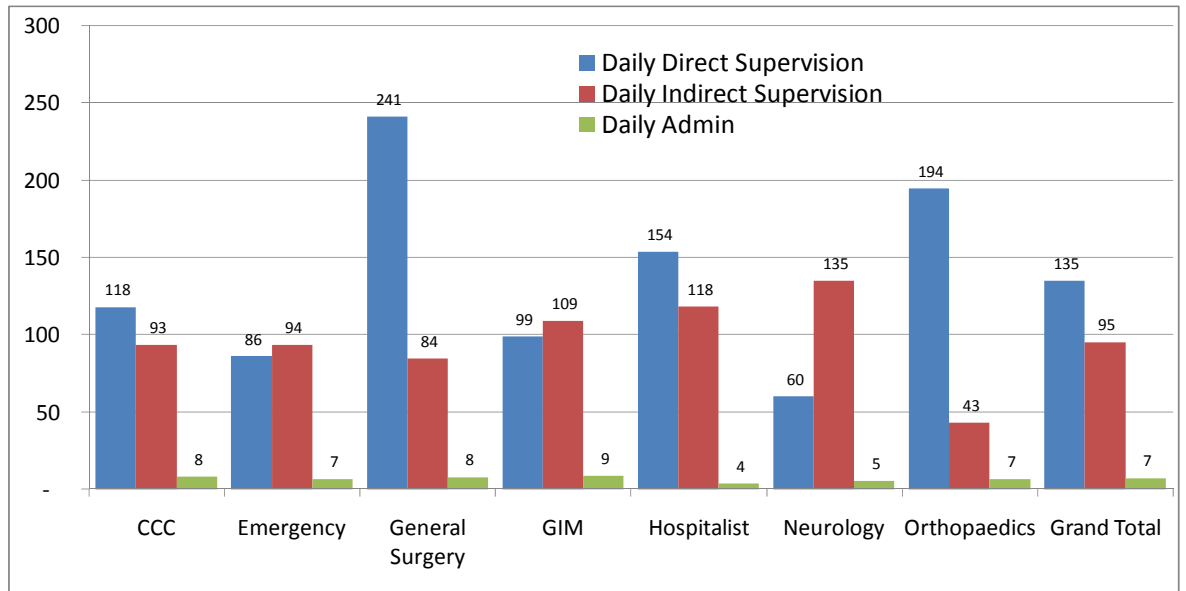
The average daily administrative time reported by the hospital-based supervising physicians was 7 minutes, with little variation across clinical area.

The average daily direct supervision time was 135 minutes per shift (i.e. 2 hours and 15 minutes) for all hospital-based supervising physicians, but was more than 3 hours for Orthopaedics and more than 4 hours for General Surgery. For both of these areas, the PAs sometimes work as surgical assistants, and because they work with the supervising physician during the operative procedures, the time was recorded as direct supervision time.

Daily direct supervision time was lowest for the PAs working in Neurology (60 minutes), while indirect supervision time was the highest.

The average daily indirect supervision time was 95 minutes per shift, and was lowest for the PAs working in Orthopaedics (43 minutes) and highest for the PAs working in Neurology (60 minutes).

On average, the supervising physicians provided 230 minutes of supervision per shift.

IMGs in PA Role and Formally Trained PAs

There were 324 survey records reported by physicians who were supervising an IMG and 120 records for physicians who were supervising a formally trained PA. The table below shows that both the direct and indirect supervision time was greater for supervising physicians who supervised an IMG in the PA role.

Exhibit 166: Average Direct and Indirect Supervision by PA Stream (all sites)

PA Type	Average Minutes per Shift		
	Direct	Indirect	Total
IMG in PA Role	152	96	248
Formally Trained PA	89	91	180
Total	135	95	230

 However, IMGs in the PA role were more likely to work in a surgical area, and more likely to provide intra-operative care, which inflates their direct supervision time. The following table excludes the records for PAs working in surgical programs, and is based on 218 IMG records and 120 records for physicians who were supervising a formally trained PA.

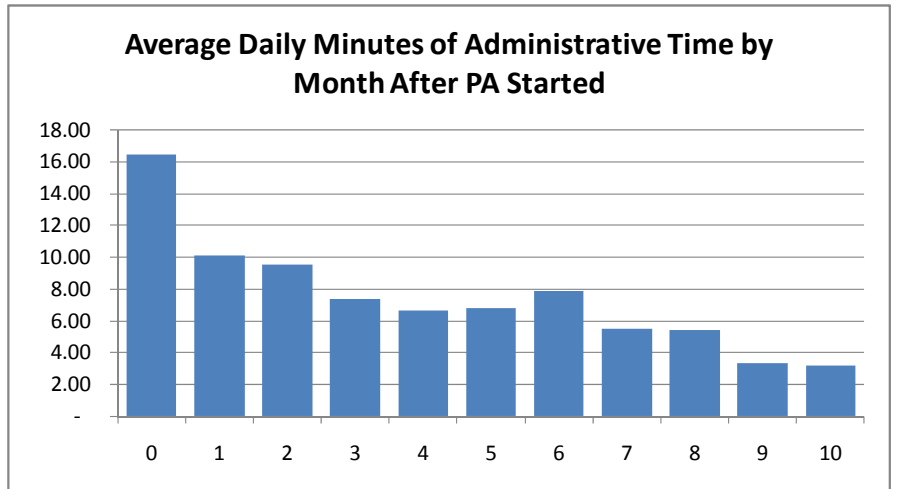**Exhibit 167: Average Direct and Indirect Supervision by PA Stream (excluding Surgical sites)**

PA Type	Average Minutes per Shift		
	Direct	Indirect	Total
IMG in PA Role	121	113	234
Formally Trained PA	89	91	180
Total	110	105	215

Excluding the surgical clinical areas, on average the IMGs functioning in the PA role received 54 minutes per day in physician supervision, 32 minutes more direct supervision, and 22 more minutes of indirect supervision.

Changes in Administrative and Supervisory Time over Time

The table on the following page shows the change in average daily administrative time according to the number of months elapsed since the supervising physician submitted their first survey. The data shows a consistent reduction in average administrative time, except for at 6 months, which for some supervising physicians corresponded with the October 2008 OMA supervising physician meeting, and is the time interval when the project conducted the first interview of supervising physicians.

Exhibit 168: Trend in Average Daily Administrative Time Spent by Supervising Physicians

Average Daily Minutes of Administrative Time by Month After PA Started

The following table shows that the average daily administrative time for supervising physicians has been consistently lower after the first 6 months.

Exhibit 169: Trend in Average Indirect Supervision Time per Shift Spent by Supervising Physicians

Average Minutes per Shift of Indirect Supervision by Month after PA Started
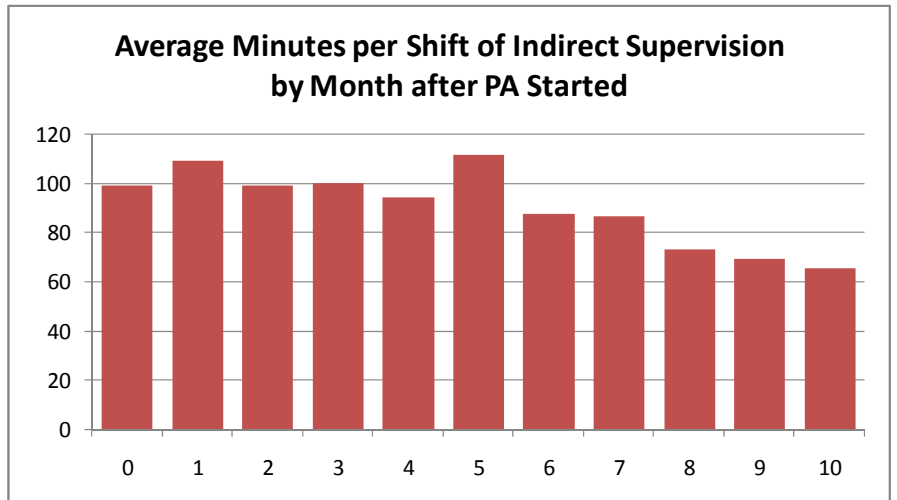
Similar trends in the average direct supervision time was not observed. After 7 months, the supervising physicians reported approximately 140 minutes of direct supervision time per shift.

Exhibit 170: Trend in Average Direct Supervision Time per Shift Spent by Supervising Physicians

Average Minutes per Shift of Direct Supervision by Month after PA Started
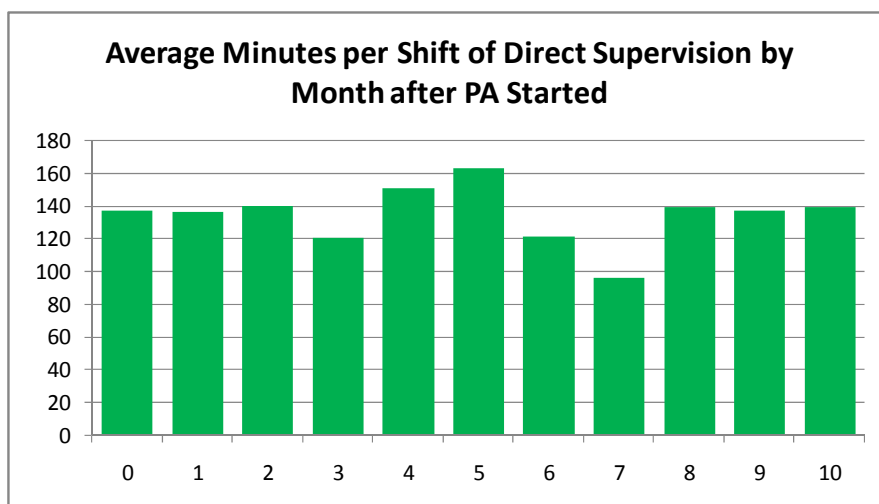
In conclusion, based on the sample of hospital supervising physician time survey data up until January 2009, direct supervision represented the largest commitment of physician time and stayed relatively constant over the first 10 months of work with the PAs. Both the average administrative time and the average indirect supervision time decreased over the first 10 months.

Supervising physicians who supervise formally trained PAs report less time spent on both direct and indirect supervision.

OMA OHIP Analysis - Comparison of Physician Services, Visits, and Fees

In January 2009, because of concerns about non-compliance and data quality, the project discontinued collection of bi-weekly estimates of administrative and supervision time from supervising physicians in the hospital demonstration project sites. Instead a time survey was introduced, that was completed by the physician assistants (i.e. not the supervising physicians).

The survey data was collected using Survey Monkey by the evaluation team and then forwarded to OHIP so that physician identifiers could be removed and replaced with an anonymized physician code corresponding to the physician code in the OMA copy of the OHIP database. The modified survey data file was then sent to the OMA economics branch, which completed the analyses presented below.

Purpose

The purpose of this analysis was to compare the number of services, visits, and fees for physicians participating in the PA Supervision project before and after the project was implemented. The before period includes all days in fiscal 2007/08, while the after period includes days in fiscal 2009/10 when the physicians supervised the PAs.

Data Sources

The analysis is based on two data sources: the OHIP claims data for fiscal years 2007/08 and 2009/10 and the PA Supervision Survey that spans the period April 9, 2009 to February 5, 2010.

The OHIP claims data provides information on three main outcomes of interest: the number of professional services and visits per day and the value of professional fees per day. The services include both fee-for-service and shadow claims. The visits are defined as physician-patient encounters on unique service dates, again using both fee-for-service and shadow claims. The fees per day are calculated by multiplying the total number of services per day by the July 1, 2011 Schedule of Benefit fee values. The use of fee values at a single point in time accounts for the fact that fees for some services were adjusted at different times.

The PA Supervision Survey contains information on the encrypted number of supervising physicians, the date of supervision, and the duration of supervision, in addition to a host of other variables. These data can be linked to the OHIP claims data based on the date of service and the physician encrypted number.

Descriptive Statistics

The full sample included 221 physicians who participated in the PA project. These physicians included 159 male physicians and 52 female physicians. Of physicians with some fee-for-service claims, 91 were family physicians and 99 were specialists. The sample of family physicians was distributed between 34 physicians in harmonized models (FHN and FHO) and 53 physicians in predominantly FFS models (CCM, FHG, and pure FFS). Most of the physicians working in the ED sites are not on a FFS model, and these non-FFS physicians were only included if they submitted shadow FFS claims. The majority of specialists were in three OHIP specialties: Internal Medicine (39), General Surgery (22), and Orthopedic Surgery (17). The sample physicians were distributed across all LHINs, with most physicians residing in three regions: Toronto Central (37), Champlain (32), and South East (28).

Exhibit 171: Summary Statistics for Sample Physicians

Number of MDs	211
Total Supervision Time (minutes)	83,748
Total Physician Supervision Days	986
Unique Supervision Days	182

Distribution by Sex	MDs
Female	51
Male	159
Missing	1

Distribution by LHIN	MDs
3501-Erie St. Clair	4
3502-South West	16
3503-Waterloo Wellington	15
3504-HNHB	1
3505-Central West	1
3506-Mississauga Halton	15
3507-Toronto Central	37
3508-Central	16
3509-Central East	1
3510-South East	28
3511-Champlain	32
3512-NorthSimcoeMuskoka	14
3513-North East	15
3514-North West	5
Missing	11

Distribution by OHIP Specialty

General Practice:	MDs
PEM-Harmonized (FHN,FHO)	34
PEM-Non-Harmonized (CCM,FHG)	11
PEM - Other	4
FFS	42

Specialists:	MDs
03-General Surgery	22
06-Orthopedic Surgery	17
08-Plastic Surgery	1
12-Emergency Medicine	2
13-Internal Medicine	39
18-Neurology	2
20-Obstetrics/Gynaecology	3
24-Otolaryngology	2
35-Urology	2
41-Gastroenterology	6
47-Respiratory Disease	1
60-Cardiology	2
Missing - No FFS Claims	21

Analysis Results

The exhibit below presents the summary statistics (means, standard deviations, and sample size) for services, visits, and fees on each day of week provided by participating physicians.

The results indicate that physicians provided about 21 percent more services per day (34 vs. 28), had about 21 percent more visits per day (23 vs. 19), and claimed about 15 percent more in fees per day ($1,664 vs. $1,441) on days when they supervised PAs in fiscal 2009/10 as compared to all days in fiscal 2007/08.

Exhibit 172: Change in Average Daily OHIP FFS Activity for Supervising Physicians

Activity Measure	FY2007 (Pre-PA)			FY2009[2] (with PA)			% Change in Mean Value
	Mean	St.Dev.	N	Mean	St.Dev.	N	
Professional Services per day[1]	27.52	26.17	40,786	34.35	29.44	985	25%
Visits per Day[1,3]	18.80	16.84	40,786	23.16	16.15	985	23%
Professional Fees per Day[1,4]	$ 1,441	$ 1,745	40,786	$ 1,664	$ 1,320	985	15%
Notes							
1. Includes both fee-for-service and shadow claims.							
2. Includes only days when physicians supervised PAs, as identified from the survey.							
3. Visits are defined as unique physician-patient-date encounters.							
4. Calculated using the July 2010 Schedule of Benefit fees and the number of professional services.							

After review of the initial results (above) the question was raised whether the apparent increase in SP productivity and billings was confined to the ED supervising physicians or also was seen for the supervising physicians on the inpatient units. The analysis was repeated with the ED and non-ED physician cohorts separated, and the results, shown in the following table showed that both groups experienced the increase in productivity and billings during the days when they were supervising PAs.

Exhibit 173: Change in Average Daily OHIP FFS Activity for Supervising Physicians, ED Physicians and Inpatient Acute Care Physicians

Survey Participants with <u>Emergency</u> Clinical Area							
Activity Measure	FY2007/08			FY2009/10[2]			% Change pre-PA to PA
	Mean	St.Dev.	N	Mean	St.Dev.	N	
Professional Services per Day[1]	29.0	22.2	12,808	35.5	18.8	193	22%
Visits per Day[3]	20.6	14.3	12,808	26.1	10.9	193	27%
Professional Fees per Day[4]	$1,169	$1,116	12,808	$1,378	$1,119	193	18%

Survey Participants with <u>Non-Emergency</u> Clinical Area							
Activity Measure	FY2007/08			FY2009/10[2]			% Change pre-PA to PA
	Mean	St.Dev.	N	Mean	St.Dev.	N	
Professional Services per Day[1]	26.8	27.8	27,978	34.1	31.5	792	27%
Visits per Day[3]	18.0	17.8	27,978	22.4	17.1	792	25%
Professional Fees per Day[4]	$1,566	$1,955	27,978	$1,734	$1,356	792	11%

NOTES

1. Includes both fee-for-service and shadow claims.
2. Includes only days when physicians supervised PAs, as identified from the survey.
3. Visits are defined as unique physician-patient-date encounters.
4. Calculated using the July 2010 Schedule of Benefit fees and the number of professional services.

Limitations and Conclusion

While this analysis suggests that physicians are more productive on days when they supervise PAs, these results must be interpreted with some caution.

First, the sample of supervision days in fiscal 2009/10 represents a very small fraction of all days that physicians practice (about 2.5 percent, or 985 days compared to 40,786 days). Therefore, the supervision days may not be representative of the physician practice in general. For example, physicians may work more hours on days when they supervise PAs than on other days, but this hypothesis is hard to verify because the OHIP claims data has no information on the hours worked. In addition, the type of services provided on the supervision days may not be representative of the physician daily practice if, as expected, the physicians arrange their practice on the supervision days to make the optimal use of their time with the PAs.

Second, a host of other factors changed between fiscal 2007/08 and fiscal 2009/10 that may affect how physicians practice. For example, one significant and potentially confounding factor is the 2008 Physician Services Agreement, which may have had an impact on physician practices independent of the PA Supervision Project.

In conclusion, then, this analysis suggests that the physician productivity and the activity of supervising PAs may be positively correlated, but it remains to be determined whether this correlation implies that supervising PAs necessarily increases physician productivity.