



SYNERGIA

Phase II of the Physician Assistant Demonstrations Evaluation Report

Report for Health Workforce
New Zealand

Dr Sarah Appleton-Dyer

Dr Adrian Field

Linden Dale-Gandar

Angela Boswell

Dr Matthew Wright

Faith Mahony

Grant Hanham

7th April 2015

Synergia Ltd

P.O. Box 147 168

Ponsonby

Auckland 1144

www.synergia.co.nz

ACKNOWLEDGEMENTS

We would like to acknowledge the support of the demonstration sites throughout this evaluation. We would not have been able to complete the evaluation without their ongoing enthusiasm and support. We would particularly like to thank those who provided us with access to quantitative data and/or took part in interviews. There was very constructive support for the evaluation from the physician assistants, doctors, nurses, managers, administrators and patients at the sites. We thank you all for your time and insights.

We would also like to acknowledge the support of the key stakeholders at Health Workforce New Zealand and the Phase II Physician Assistant Demonstration Advisory Group: Kate Baddock (New Zealand Medical Association), Iain Bell (Royal New Zealand College of Medical Practitioners), Cynthia Bennett (Counties Manukau District Health Board), Jenny Carryer (National Nursing Organisations), Lesley Clarke (New Zealand Medical Association), Antony Crane (Ministry of Health) and Kanny Ooi (Medical Council of New Zealand).

ACKNOWLEDGEMENTS	2
1. EXECUTIVE SUMMARY	6
2. INTRODUCTION	20
2.1 BACKGROUND.....	20
2.2 STRUCTURE OF THIS REPORT	21
3. UNDERSTANDING THE PHYSICIAN ASSISTANT ROLE.....	22
3.1 THE PHYSICIAN ASSISTANT ROLE IN PRACTICE	22
3.2 PHYSICIAN ASSISTANT EDUCATION AND TRAINING	22
3.3 CURRENT EVIDENCE ON THE CONTRIBUTION OF THE PHYSICIAN ASSISTANT ROLE	23
4. THE POTENTIAL CONTRIBUTION OF PHYSICIAN ASSISTANTS TO THE NEW ZEALAND HEALTH WORKFORCE.....	26
5. PHASE II OF THE PHYSICIAN ASSISTANT DEMONSTRATIONS.....	28
5.1 SETTINGS FOR PRACTICE.....	28
5.2 PHYSICIAN ASSISTANT SELECTION.....	29
5.3 THE ROLE OF HEALTH WORKFORCE NEW ZEALAND	30
5.4 PHYSICIAN ASSISTANT GOVERNANCE	30
6. EVALUATION APPROACH AND METHODS	31
6.1 EVALUATION AIMS AND OBJECTIVES	31
6.2 EVALUATION QUESTIONS	32
6.3 EVALUATION APPROACH	32
6.4 EVALUATION FRAMEWORK	33
6.5 MIXED METHODS DATA COLLECTION	36
6.6 DATA ANALYSIS	43
7. HOW HAVE PHYSICIAN ASSISTANTS INTEGRATED WITH PRACTICE ACTIVITIES AND SERVICES MODELS?.....	44
7.1 ROLE INTRODUCTION	44
7.2 UNDERSTANDING THE PHYSICIAN ASSISTANT ROLE BY COLLEAGUES.....	45
7.3 STAFF FEEDBACK ON THE INTEGRATION OF THE ROLE.....	46
7.4 PHYSICIAN ASSISTANTS' SCOPE OF PRACTICE.....	47
7.5 PHYSICIAN ASSISTANT ROLES AT SITES.....	48

8. WHAT WAS THE IMPACT AND CONTRIBUTORY VALUE OF THE PHYSICIAN ASSISTANT ROLE FOR PATIENT OUTCOMES, SERVICE QUALITY AND BUSINESS MODELS AT THE DEMONSTRATION SITES; WITHIN THIS, HAVE THE PHYSICIAN ASSISTANTS EXTENDED OR CHANGED THE PRACTICE MODEL?	50
8.1 GENERAL FEEDBACK FROM PHYSICIAN ASSISTANTS’ SITE COLLEAGUES ON CONTRIBUTION AND VALUE.....	50
8.2 SUPPORTING PATIENT FLOWS.....	52
8.3 PATIENT MIX AND COMPLEXITY	54
8.4 COST-EFFECTIVENESS	57
8.5 CONTRIBUTION TO WORKFORCE	59
8.6 BROAD SCOPE OF PRACTICE, ALLIED WITH SPECIALISATIONS AND INNOVATIONS	61
8.7 CONTINUITY AND TIME WITH PATIENTS.....	61
8.8 IMPACT ON PATIENTS	62
8.9 IMPACT ON NURSING AND JUNIOR DOCTORS	63
8.10 OTHER AREAS OF IMPACT OR VALUE.....	64
8.11 PRACTICE MODELS	64
9. WHAT FACTORS SUPPORTED OR CHALLENGED THE INTEGRATION OF THE PA ROLE INTO LOCAL PRACTICES AND WITH SPECIFIC PROFESSIONAL GROUPS?	69
9.1 PRESCRIBING	69
9.2 SCOPE OF PRACTICE.....	70
9.3 SUPERVISION AND REVIEW	71
9.4 ORIENTATION TO THE NEW ZEALAND HEALTH SYSTEM	75
10. WHAT ARE THE IMPLICATIONS AND/OR RISKS FOR THE FIT AND APPLICABILITY OF THE PHYSICIAN ASSISTANT ROLE WITHIN NEW ZEALAND, ARISING FROM THE EVALUATION FINDINGS?	77
10.1 QUALITY OF SUPERVISORY RELATIONSHIP	77
10.2 MANAGING AND UNDERSTANDING SCOPE.....	78
10.3 PHYSICIAN ASSISTANT SELECTION AND QUALITY OF DELIVERY	79
10.4 MATCH BETWEEN PHYSICIAN ASSISTANT SKILLS AND CLINICAL SETTINGS	79
10.5 VARIATIONS IN SITE PREPARATION AND UNDERSTANDING OF THE ROLE	80
10.6 CULTURAL FIT.....	81
11. WHAT ISSUES ARISE FROM THE DEMONSTRATIONS FOR THE POTENTIAL ESTABLISHMENT, TRANSFERABILITY AND SUSTAINABILITY OF THE PHYSICIAN ASSISTANT ROLE IN NEW ZEALAND? .	81
.....	

11.1	PHYSICIAN ASSISTANT RECRUITMENT FROM OVERSEAS	82
11.2	CONSIDERATIONS FOR DEVELOPING PHYSICIAN ASSISTANT ROLE IN NEW ZEALAND.....	83
12.	STRENGTHS AND LIMITATIONS.....	87
13.	CONCLUSIONS	89
14.	REFERENCES	93
	APPENDIX 1: PATIENT SURVEY DATA SUPPLEMENT.....	94
	APPENDIX 2: STAFF SURVEY	101
	APPENDIX 3: MIXED METHODS DATA INTEGRATION.....	110

1. EXECUTIVE SUMMARY

1.1 INTRODUCTION

This report presents an evaluation of the Phase II Physician Assistant (PA) Demonstrations commissioned by Health Workforce New Zealand (HWNZ) to understand the potential contribution of the PA role to the existing New Zealand health workforce. Synergia was commissioned to undertake an evaluation of these demonstrations, in four New Zealand clinical settings, between December 2013 and February 2015. Specifically, the sites included one rural emergency department and three primary care settings (two rural and one urban). This evaluation report focuses specifically on an analysis across all site findings and their implications for the PA role in New Zealand.

The aim of the PA evaluation is to determine the value and contribution of the PA role in the demonstration sites, and whether they offer a flexible, fit-for-purpose and sustainable addition to the existing health workforce in New Zealand.

1.2 UNDERSTANDING THE PHYSICIAN ASSISTANT ROLE

PAs are health professionals with a generalist medical education. They are able to work flexibly to extend the care of physicians and improve access to quality care (5). They work with a degree of autonomy but their scope of practice is defined by their relationship with their supervising physician (5,6). This relationship with a supervising physician is essential to the role of a PA (5,6). In this respect, PAs' ability to practice to the full scope of their ability and authority is based on their legally dependent relationship to physicians (7).

The PA role has been put forward as one of a potential suite of responses to health workforce challenges including current issues relating to the distribution and cost-effectiveness of the health workforce.

1.3 EVALUATION APPROACH AND METHODS

An evaluation framework guided the design and implementation of the evaluation, and included a range of implementation and outcomes measures. To ensure that the evaluation was also driven by appropriate theory, Synergia integrated the framework with the principles of Pawson and Tilley's Realistic Evaluation framework, and Rummier and Brache's Role Introduction Analysis framework.

To address the aim of the evaluation, this evaluation report is structured around the following evaluation questions:

1. How have PAs integrated with practice activities and service models?
2. What was the impact and contributory value of the PA role for patient outcomes, service quality and business models at the demonstration sites; within this, have the PAs extended or changed the practice model?
3. What factors supported or challenged the integration of the PA role into local practices and with specific professional groups?
4. What are the implications and/or risks for the fit and applicability of the PA role within New Zealand, arising from the evaluation findings?
5. What issues arise from the demonstrations for the potential establishment, transferability and sustainability of the PA role in New Zealand?

The evaluation adopted a mixed methods approach that draws on the value of quantitative and qualitative methods. Specifically, the evaluation involved:

1. Two sets of site visits to each of the demonstration sites to conduct key stakeholder interviews, supplemented by some telephone interviews; a total of 60 interviews were conducted.
2. Staff and patient surveys at each site; a total of 511 patients were surveyed and 65 staff were surveyed.
3. An analysis of routinely collected administrative and clinical data

These data sources were integrated to address the evaluation aim. The breadth of data collected for this evaluation is on a par with, and in many cases exceeds that collected in overseas studies. Note however that the evaluation has not been designed to compare the PA with other existing roles in the health workforce.

1.4 HOW HAVE THE PHYSICIAN ASSISTANTS INTEGRATED WITH PRACTICE ACTIVITIES AND SERVICES MODELS?

1.4.1 Role introduction

Induction activities were put in place to support the integration of the PAs, but there was some variation in the level of preparedness of host organisations for the PAs arrival.

An orientation for the PAs was facilitated by Gore Health and supported by Health Workforce New Zealand. Following the orientation, HWNZ also supported regular face-to-face opportunities for training and support for the PAs.

Suggestions from PAs for future settlement processes (if required) were:

- Information and briefings about the NZ health system, and clarifying pharmaceutical names to ease the transition between medical systems.
- A comprehensive orientation to the clinical setting and New Zealand health system.
- A central physician assistant coordinator that fielded inquiries and questions for the PAs both before and after their arrival in New Zealand.
- Increased opportunities to engage with a broader range of professional development and learning activities.
- Increased opportunities to engage with the wider health sector.

1.4.2 Understanding of the Physician Assistant role by colleagues

As when starting any new job, the PAs initially had to build relationships with colleagues and carve out a professional space. When PAs were first introduced to their individual practices, there was a learning period for existing staff to understand their role and scope. Once the PA role was understood, there appeared to be little challenge to the integration into existing practice. The staff survey also provides evidence on the successful integration of the PAs to their different clinical settings.

1.4.3 Physician Assistants' scope of practice

In alignment with international approaches to integrating the PA role, the PAs scope of practice was tailored to their skills and the patient profile at each of the clinical settings. Given the broad range of procedures that can be undertaken by a PA, it was the responsibility of the supervising physician to develop the PAs scope of practice in consultation with the PA. While determining this scope worked well across most of the settings, it has been challenging for one or two PAs who still consider themselves to be practising below their potential. For other PAs however, the clinical settings that they were placed in had actually broadened their scope of practice.

During the demonstrations all of the PAs had to approach their supervisory physician for prescriptions to be signed. This was sometimes challenging for both the doctors and the PAs.

1.4.4 Physician Assistants' roles at sites

PAs are trained to be extremely flexible about where and how they work in medicine. Among the seven PAs in New Zealand for the demonstration trials, the PA role is mostly characterised by a certain amount of independence to see and diagnose patients, with a supervisory physician available for support.

The roles implemented at the demonstration sites to date largely follow a drop-in model, whether it is in community-based primary care or ED. Overall, the PAs have slotted into and supported existing models of care rather than shifting or changing practice models.

1.5 WHAT WAS THE IMPACT AND CONTRIBUTORY VALUE OF THE PHYSICIAN ASSISTANT ROLE FOR PATIENT OUTCOMES, SERVICE QUALITY AND BUSINESS MODELS AT THE DEMONSTRATION SITES; WITHIN THIS, HAVE THE PHYSICIAN ASSISTANTS EXTENDED OR CHANGED THE PRACTICE MODEL?

1.5.1 General feedback from physician assistants' site colleagues on contribution and value

Overall, the colleagues of PAs at all the sites indicated that the PAs were making a valuable contribution to their clinical settings. For example, there was also a generally positive response from staff in the following areas:

- improved throughput of patients (96% agreed or strongly agreed)
- reduced the workload of existing staff (97% agreed or strongly agreed)
- adding something that is distinct from existing roles in the clinical setting (89% agreed or strongly agreed)

1.5.2 Supporting patient flows

A clear area of value offered by the PAs at each site was supporting delivery of patient volumes (particularly at the practice settings), and maintaining workflows; the quality of the service provided by the PAs was an important enabler of this.

During the course of the evaluation, the six PAs undertook over 30,000 patient consultations. Due to the nature of the site selection, the majority of these consults were in the general practice settings (comprising approximately 27,000 consults). Approximately 3,000 were in the emergency department (ED) setting in Gore.

1.5.3 Patient mix and complexity

In the qualitative discussions, a common theme was the ability of PAs to focus on the drop-in patients with acute issues, which was seen to allow doctors to focus on more complex conditions. Quantitatively, this was supported from one site where data from the three Hamilton practices were analysed using a Classification and Regression Tree (CART), (discussed in the method section).¹

¹ As noted in the method section, this analysis was only undertaken at the Radius practice because of the substantial changes in the practice environment occurring at Tokoroa.

Based on this analysis, consults undertaken by the supervising GP were significantly more likely ($p < 0.001$) to be associated with screening codes related to long-term conditions and complex co-morbidities than consults undertaken by the PA.

This does pose the question of whether these differences reflect the nature of the PA role, or are an outcome of the restrictions placed on the PA role for these demonstrations (e.g. restrictions on prescribing). The qualitative evidence and the insights from the international literature on the PA role suggest that this difference is more likely to reflect the restrictions in the demonstrations on the PA role, rather than the potential scope of a PA. Furthermore, some of the PAs were working with highly complex patients in the United States.

1.5.4 Cost-effectiveness

People in senior management roles in the three host organisations all pointed to the cost-effectiveness of the role, in terms of the PAs ability to deliver similar quality medical care (within the scope of the PA) at a lower cost than GPs or other doctors. These insights were supported by the interviews and the financial data available from Gore. For Gore, these cost benefits were also associated with the value of having a more sustainable workforce.

Behind this rationale is however an acknowledgement by interviewees that while a PA can offer effective clinical care for many patients at a lower cost, a PA still requires supervision and mentoring from doctors, and critically must be a competent PA.

1.5.5 Contribution to workforce

From the perspective of the future development of the PA role, the experience in regional and remote areas may be particularly pertinent. The contribution of PAs to rural practices was particularly noted in the Tokoroa site, where the practice was both shifting to a purpose-built integrated centre alongside Tokoroa hospital, with a new model of care, and which was beset in the past year by considerable difficulties in recruiting GPs. This is also in the context of an ageing workforce, where some local GPs had retired and replacements were difficult to find. The PA working at Gore had a substantial effect on the working hours of the other clinicians at the site, with interviewees suggesting that this led to a more sustainable and clinically safe workload.

1.5.6 Broad scope of practice, allied with specialisations and innovations

All PAs were seen to offer quality care to the patients in their clinical settings. The contribution of PAs across a broad scope of practice was seen to offer value across multiple settings.

The flexibility in their role was also valued, and notwithstanding the prescribing restrictions, they were thought to have a reasonable level of autonomy in their role.

1.5.7 Continuity and time with patients

A common theme across all sites was the continuity offered by PAs. Medical students and registrars were seen to only offer a short-term role at clinical settings, whereas the PAs will often be in place for longer.

While not seen in this demonstration, some of the PAs in primary care highlighted the potential for PAs to spend more time on the broader aspects of primary care, such as patient education and self-management. This may either be as a conscious decision in the model of care being followed, or simply as a result of the way that PAs are trained to work.

1.5.8 Impact on patients

From a patient perspective, the survey indicates that the PAs are supporting practice activities and models through delivering a level of care and support that was highly rated by nearly all of the patients seen by the PAs across the different sites. There were no statistically significant differences between the patient responses in terms of satisfaction of the care that they received from the PAs and the existing health workforce, and with satisfaction being high in both cases.

1.5.9 Impact on nursing and junior doctors

Most nursing respondents indicated there was no negative impact on nursing, and that the two roles were seen as complementing each other. In a few cases, some nurses indicated they had stopped doing some tasks they had previously undertaken, such as suturing, and a nurse at one of the sites indicated a concern that the autonomy of nurses at the site had been reduced.

There was a concern expressed by some interviewees that PAs have the potential to negatively impact on development of nursing. Key concerns raised were the growth of the PA role at the expense of the development of the nurse practitioner role, and undermining the holistic value of the nursing role.

The interviews also explored the impact of the PA on the training opportunities for junior doctors. The PAs had not affected the employment of junior doctors (despite some concerns of staff recorded in the survey, noted earlier), nor had it affected support for junior doctor training at any of the demonstration sites.

1.5.10 Other areas of impact or value

The PAs were seen by many interviewees to display an alternative career pathway that may be attractive for some to consider as a next stage in their careers, such as nurses, pharmacists or paramedics. The PAs had also brought new knowledge and skills to the practices. These skills and expertise tended to reflect the scope of role of the PA in the United States.

1.5.11 Practice models

Overall, the PAs have generally integrated with the business models of their host organisations, and worked in with the existing clinical structures and models at host sites. For the most part, the practice models have generally not changed.

A key exception was at the Tokoroa practice where a temporary walk-in clinic was established that was run by a PA over the peak season of winter months.

1.6 WHAT FACTORS SUPPORTED OR CHALLENGED THE INTEGRATION OF THE PA ROLE INTO LOCAL PRACTICES AND WITH SPECIFIC PROFESSIONAL GROUPS?

1.6.1 Prescribing

The lack of prescribing rights was the most commonly cited challenge to the integration of the PA role at the different settings, and particularly at the practice settings. Allowing PAs to prescribe was also the most frequently cited recommendation for the future development of the role in New Zealand in the staff survey (Appendix 2).

The need for doctors to sign scripts also meant that consults were sometimes interrupted, which was not an ideal process for the doctors, the PAs or the patients. The interviews also suggested that integration would be supported if PAs were able to sign for ACC, WINZ forms, labs and other referrals.

1.6.2 Scope of practice

Understanding the PAs scope of practice also posed challenged to integration of the PA role, at least initially. The notion of “not a nurse but not quite a doctor” was difficult for some to understand.

However, the transition time to understand the role and scope of the PAs did not appear to take long and the PAs were soon well integrated into their clinical settings and perceived to be a valued member of the team. This may also suggest that if PAs were to become a more common feature of the health system, these issues of understanding scope may become less noticeable over time.

The interviews also identified the relationships between the scope of the PAs, doctors and nurses. Overall, the scope of the different health professionals was considered to compliment and align well to one another.

1.6.3 Supervision and review

All PAs have supervisory arrangements in place at the pilot sites, but these varied from site to site. This mix of supervision was designed to meet HWNZ’s requirements for immediate support and

advice and retrospective supervision. During the evaluation, no issues of clinical safety were drawn to our attention.

On average, the quantitative analysis suggests that the PAs were requesting prescriptions to be signed for 11 to 24 patients per day (depending on the site). The qualitative analysis suggests that the supervising GPs and the PAs found this process frustrating. The potential impact on patients' in terms of the need to wait for prescriptions or having their GP consultation interrupted is also far from ideal. Overtime, each site indicated that they developed processes to reduce this burden. The quantitative analysis suggests that despite this frustration there appears to be no overall effect on GP efficiency in terms of patients per hour.

The interviews with supervising physicians revealed general satisfaction with the PAs contribution to their site, and the quality and safety of the work performed, which was seen to be appropriate to their role.

The interviews at the site visits identified the supervisory relationship as both a key challenge and a success factor for the integration of the PA role. Interviewees at a range of sites noted that supervising PAs is different to teaching junior doctors, with the need to be able to give PAs permission to apply their practice.

With the unregulated role of PAs, and the responsibility for patient care residing with the supervising doctor, some degree of caution by the supervision GPs is understandable.

Where relationships have been successfully established, there is a tendency for growing levels of delegation to occur; one PA spoke of this developing organically rather than directly negotiated.

1.6.4 PA oversight by the supervising GPs

As an indicator of the oversight provided by the supervising GP, we identified patients who had a consultation recorded from both the supervising GP and PA on the same day.

Initially when one of the PAs first started working, the majority of their patients were also seen by the GP, with an average of 61% of PAs patients between March and August 2012 (with an average of 97% in April 2012). Over time this proportion dropped to a more consistent average of 20% in the months between December 2013 and December 2014. This was reflected in the qualitative evidence where both the PA and the supervising GP noted the shift in the level of supervision over time.

1.6.5 Orientation to the New Zealand health system

When the PAs initially came to New Zealand, their role was new to the existing workforce and patient populations. The PA was also exposed to a very different health system that the one they were trained in. These factors sometimes challenged the integration of the PA into the different

clinical settings. Initially, both patients and healthcare professionals can be hesitant to understand and accept their role.

Overall, the patients were satisfied with seeing the PAs and any issues appeared to be related to specific personalities rather than the care of the PA. The patients' satisfaction with the care received from the PAs is also reflected in the patient survey (Appendix 1).

The intention to host a PA at a site that was yet to be established (Taneatua) was also a key challenge to the integration of one of the PAs. This resulted in the PA being moved several times throughout the demonstrations making it difficult for them to settle and establish their role. This highlights the importance of introducing new roles into practices and settings that are already well-established.

1.6.6 Physician assistant support, training and experience

The initial orientation support from the existing health workforce, and the ongoing support and training from HWNZ, were key factors in supporting the integration of the PAs into the New Zealand health system. The background and experience of the PAs were also cited as factors that supported their orientation and settlement in New Zealand.

1.7 WHAT ARE THE IMPLICATIONS AND/OR RISKS FOR THE FIT AND APPLICABILITY OF THE PHYSICIAN ASSISTANT ROLE WITHIN NEW ZEALAND ARISING FROM THE EVALUATION FINDINGS?

1.7.1 Quality of supervisory relationship

The collaborative relationship between GPs and PAs is a potential challenge to the fit and applicability of the PA role within NZ. Some supervisors will need resources and guidance to support them in taking on the role of a PA supervisor, and PAs by the same token also need to understand that the development of this relationship will take time as the role is so new.

The PA supervisory role was generally seen as different to that required for a junior doctor, particularly where the PAs have an established track record of experience in their field.

1.7.2 Managing and understanding scope

The environment into which PAs are placed is also important. The clinical setting needs to be able to recognise that PAs have boundaries to their scope, and therefore the types of the cases that they are able to work with. Allowing PAs to manage their scope of practice is important for integrating the role.

1.7.3 Physician assistant selection and quality of delivery

The PAs were specifically selected for their skills and experience, and with expectations that they could be leading the development of the PA role in New Zealand. This will continue to be an important factor in the ongoing fit of PAs to the New Zealand environment.

The qualitative feedback indicates no concerns have risen regarding patient safety; from a quality and safety point of view, the PAs selected are reported to be working within their competence.

1.7.4 Match between physician assistants and clinical settings

There needs to be a good match between the clinical settings, models of care and the skills and experiences of the PA, to maximise the potential value of the PA role. This was illustrated by the influence of the practice setting on the scope and practice of some the PAs. For example, a placement in primary care for one PA meant that established emergency department skills were less to the fore.

Compared to PAs in overseas jurisdictions, particularly the US, the scope of practice for the demonstration PAs was more limited. This was most evident in prescribing.

1.7.5 Variations in site preparation and understanding the role

The evaluation identifies the importance of a robust orientation process and preparation for the PAs. The variations in preparation by some sites limited the initial impact of role. Staff at some of the sites suggested that better education around the site of the PA role, as well as to patients, would have been helpful.

1.7.6 Cultural fit

The cultural fit of PAs was raised as an issue in some sites which has implications for future recruitment and orientation. This was not so much about the cultural competence, but about the hierarchical structure that PAs work within the US, compared to a more egalitarian interpersonal culture in the New Zealand environment.

1.8 WHAT ISSUES ARISE FROM THE DEMONSTRATIONS FOR THE POTENTIAL ESTABLISHMENT, TRANSFERABILITY AND SUSTAINABILITY OF THE PHYSICIAN ASSISTANT ROLE IN NEW ZEALAND?

1.8.1 Physician assistant recruitment from overseas

Some potential issues for consideration in recruiting overseas-based PAs include the following:

- Flexibility to adapt to New Zealand culture, including the work cultures

- Match to lifestyle and areas of interest
- Experience with cultural diversity prior to coming to New Zealand, which was seen by many as supportive for PA settlement and in dealing particularly with Māori and Pacific populations; and alongside this, support in understanding the particular cultural context of New Zealand

We also acknowledge that while experience with cultural diversity and cultural competency training through the PA programme in the States is a useful quality in new recruits, this does not equate to cultural competence. Recruitment from overseas would still require an induction and settlement process to understand the unique challenges of the New Zealand health context, and particularly Māori health and their unique position as tangata whenua.

Clarity of the work environment, including limitations on prescribing rights and more consistent orientation at sites would also be helpful for supporting integration.

1.8.2 Considerations for development the physician assistant role in New Zealand

If the PA is to develop into a 'homegrown' role, feedback from the sites suggests that the following issues will need to be considered:

- Workforce need and key areas of development
- Regulation and medico-legal issues
- Professional development
- Training base
- Advocacy and networking

These are discussed in more detail in the full report. We acknowledge that this is an area of much contention, in particular the implications of the PA role for the development of existing professions.

1.9 STRENGTHS AND LIMITATIONS OF THE EVALUATION

When reviewing the findings from this evaluation it is important to consider the strengths and limitations of the design. The evaluation presented here presents a comprehensive evaluation design that draws on multiple data sources to identify the perspectives and experiences of the PAs, doctors, nurses, managers, business owners, administrators and patients. Unlike previous evaluations, the strength of the evaluation design is also further bolstered through the integration of this evidence with the findings from the existing administrative and service data.

When assessing the quality of mixed methods designs it is also important to review the individual data collection methods and procedures. The specific strengths and limitations of each data set are discussed in Section 12.

We also acknowledge that the evaluation was designed to provide insight into the PA role at a specific sample of sites across New Zealand. The evaluation was not designed to explore aspects of regulation, establishing training programmes or other steps that might be considered for a longer term approach to integrating the role. In this respect, the evaluation offers insights and considerations that warrant further exploration by HWNZ, the Advisory Group and the wider sector in light of any policy decisions or development of the role.

1.10 CONCLUSIONS

The role integration and realistic evaluation frameworks have supported the evaluation in identifying a number of key factors and considerations that warrant consideration when understanding the value and contribution of the PA role.

Drawing on the insights from the mixed methods data integration conducted to date, the findings also suggest that:

1. The primary care/ED PA demonstrations were relevant and useful for understanding the potential value and contribution of the PA role across a range of clinical settings.
2. The data currently available for the evaluation suggests that the PA role has fitted into and supported current models of care and provided an acceptable level of care for patients at the different settings.
3. Available qualitative and quantitative data suggests that introduction of the PA role in primary care settings has led to a shift in the types of patients seen by GPs, with the data suggesting that GPs were more likely to see patients with more complex care needs than PAs.
4. PAs were seeing a similar number of patients per hour to GPs, although GPs were seeing patients with more complex care needs. The data suggests that the PAs have reduced locum costs, reduced the workload of existing staff and supported patient throughput.
5. The PAs were accepted by the majority of patients. Nearly all patients were happy with the care they have received from the PAs, and satisfaction was similar to that of other health professionals.
6. Within the context of PAs seeing some 30,000 patients, no issues of clinical safety were drawn to our attention.

7. Clinical settings looking to explore the value of the PA for their site need to carefully consider the selection of a PA based on their skills, expertise and potential fit. Clinical settings need to provide a level of orientation and support that facilitates the integration of the PA and their contribution.
8. The PA role has the potential to be exported to other clinical settings across New Zealand. This potential however, needs to be driven by the needs of different sites and contexts, as well as the skills and experience of the PA. When there is a good match between the needs of the health care setting and the PA skills and expertise, the potential value and contribution of the PA role is maximised. This was particularly well illustrated at the Gore and Radius demonstration sites. When introducing the role at different types of clinical settings formative evaluation would be useful for supporting integration and understanding the contribution of the role.
9. The findings also suggest that clinical settings that might benefit from the PA role should to consider the gaps or shortages within their current workforce and ensure that the scope of the PA addresses these gaps while minimising impact on the role of other healthcare professionals, in addition to the business case for PA recruitment.
10. The key stakeholders involved in this evaluation suggested that regional and remote areas were likely to be settings that would particularly benefit from the PA role due to the challenges of recruitment. The benefits and value identified by the urban practices involved in this evaluation however, suggest that urban areas may also find value in the PA role.
11. The sector needs to consider the implications, risks and contributions of the PA role to the current health workforce. Specifically, the evaluation highlights the importance of:
 - a. Quality and experience of the PAs coming in from the United States.
 - b. The match between the PAs skills and experience and the needs of the clinical setting.
 - c. Orientation to the New Zealand health system for PAs from outside of New Zealand.
 - d. Supervision.
 - e. Ongoing support and professional development for PAs.
 - f. Exploring what is required for PAs to be able prescribe or to become regulated in New Zealand.
 - g. Exploring the value and costs of establishing a New Zealand based training programme.

When reviewing the findings and potential implications of the Phase II demonstrations, it is important to acknowledge that some of the potential implications and issues for consideration are

long term processes. These insights will need to be reviewed with the sector to further understand the potential contribution and value of the PA role to the New Zealand health workforce, and strategies to address any potential negative impacts on other parts of the health workforce.

The current demonstration sites' employers are very keen to maintain the PA role at their settings. From a patient safety and acceptability perspective, the evaluation has not received any evidence to suggest that the PAs should not remain at their current sites. This coupled with the evidence on the integration, contribution and acceptance of the role by most patients and health professionals indicates some key aspects of the potential fit, value and sustainability of the PA role to the New Zealand health workforce.

2. INTRODUCTION

2.1 BACKGROUND

This report presents an evaluation of the Phase II Physician Assistant (PA) Demonstrations commissioned by Health Workforce New Zealand (HWNZ) to understand the potential contribution of the PA role to the existing New Zealand health workforce. Synergia was commissioned to conduct the evaluation between December 2013 and February 2015. This report focuses specifically on the across site findings and their implications for the PA role in New Zealand.

PAs² are health professionals with a generalist medical education that allows them to work in a variety of settings. PAs work under the supervision of a doctor who is responsible for the care of patients and tailors the PA's scope of practice according to their skills and the patient profile (1). The PA profession was developed in the United States in the 1960s to address workforce shortages. The role has recently been adopted in the Netherlands, Canada, the UK and parts of Australia.

Physician assistants (PAs) were initially trialled in New Zealand to explore their feasibility to help address workforce shortages in the health sector, particularly an ageing workforce and a demand-supply gap. PAs were seen as an option that could potentially address supply issues and the cost of care. However, the workforce situation in New Zealand and internationally has since changed noticeably since the initial trial in 2011. From a situation of medical workforce supply shortages, there has in recent years been a shift to a low vacancy environment where the workforce pressures are less generalised than previously. The challenge, and the potential role of PAs in this environment, becomes more one of addressing the distribution of the medical workforce, rather than general supply.

In these circumstances, there are two key potential contributions of the PA role. Firstly, in geographic areas where workforce shortages remain, and are likely to continue to do so in the future; this is particularly relevant in many regional and remote areas in New Zealand. Secondly, value continues to be seen in PAs in contributing to a more financially sustainable health system.

The initial trial of the PA role was undertaken at Middlemore Hospital in Counties Manukau District Health Board (CMDHB) in 2012. An evaluation of the trial conducted by an Australian Consultancy firm yielded some positive findings, but also highlighted the limitations of the role in the current

² A note on nomenclature: the term Physician Assistant is used throughout this report, which is the established title in the US, and initially in the New Zealand demonstration trials. The Physician Assistant and Physician Associate titles are used internationally and interchangeably, and we note that the Physician Associate title is preferred for the further development of the role in New Zealand.

regulatory environment (2). Furthermore, aspects of the evaluation were criticised, including that the level of evidence available may not have supported the attribution given to the PA role, and the inability to generalise to other healthcare settings.

A second wave of demonstrations, based in primary care and rural settings was subsequently initiated in 2013. This involved importing American-trained, experienced PAs who have been working in various settings across NZ. Seven PAs have been working in the demonstration sites with three placed at Radius Medical group in Hamilton, two were placed at a Tokoroa practice, one placed with Raukura Hauora o Tainui, and one with Gore Hospital.

This second phase of demonstrations has been evaluated by Synergia and is the focus of this report. Specifically, this evaluation aims to determine the value and contribution of the PA role in the demonstration sites, and whether they offer a flexible, fit-for-purpose and sustainable addition to the existing health workforce in New Zealand.

The evaluation draws on the principles of Realistic Evaluation (3), a role integration framework (4) and adopts a mixed methods approach to provide a comprehensive insight into the implementation and contribution of the PA role at the different settings.

This report draws on analysis of the following data that were collected and available for the evaluation:

- Interview data from two sets of visits to each of the demonstration sites.
- A patient survey.
- A staff survey.
- Analysis of quantitative data from the clinical settings.

2.2 STRUCTURE OF THIS REPORT

Following this introduction, this report will provide an overview of the PA role and a summary of the evidence of the implementation and achievements of the role in previous evaluations. This is useful for providing the context and a measure by which to evaluate the implementation and achievements of the current New Zealand trial. This will be followed by a deeper insight into the aims and objectives of this evaluation and the methodology used. The results section will then draw on the multiple methods used in this report to address the evaluation aims, objectives and questions. This will be followed by strengths, limitations and conclusions.

3. UNDERSTANDING THE PHYSICIAN ASSISTANT ROLE

3.1 THE PHYSICIAN ASSISTANT ROLE IN PRACTICE

PAs are health professionals with a generalist medical education. They are able to work flexibly to extend the care of physicians and improve access to quality care (5). They work with a degree of autonomy but their scope of practice is defined by their relationship with their supervising physician (5,6). This relationship with a supervising physician is essential to the role of a physician assistant (5,6). In this respect PAs ability to practice to the full scope of their ability and authority is based on their legally dependent relationship to physicians (7).

The connections between the PA's scope and that of their physician have also meant that they are able to work throughout all practice areas (6). Duties within the physician assistant's scope include physical examinations, diagnosing and treating common illnesses, ordering and interpreting tests, prescribing medicines, and assisting in surgery (6). In general practice settings, they often address patients with acute conditions allowing physicians to see more complex and long-term cases (8,9). In hospital departments, physician assistants are able to provide continuity of care for patients and reduce wait times (10,11). They often assist by taking control of pre-admission and out-patient clinics (11) as well as being able to assist with surgeries (12).

The role of physician assistants originated in the United States in the 1960s, where it was seen as an opportunity for military paramedics to take their skills into civilian settings, working with the oversight of practicing physicians (5,13). In their review of the history of the PA role, Piemme et al (2014) suggest that there are some 100,000 PAs certified in the US (7). Since then, the role has been established in a range of countries including Australia, England, Scotland, Canada, Ireland, The Netherlands, South Africa, Kenya, Ghana, Nicaragua, Thailand and Taiwan (13,14). Most of these countries addressed physician assistants to support the quality of care, improve service efficiency, and to help counter workforce shortages (13). Training programmes for PAs have emerged in these countries to support the development of locally-sourced and trained PAs (13).

3.2 PHYSICIAN ASSISTANT EDUCATION AND TRAINING

PAs are trained in full time accredited programmes that typically last about 25 months. The training curriculum is describe as being similar to that experienced by medical students, in a concentrated period and combining both classroom content and clinical training (8). The postgraduate

qualification combines academic study and work placements, with a focus on clinical and communications skills.

The first year is generally devoted to rigorous, intensive classroom and laboratory training. The second year of training is spent in a series of closely supervised clinical rotations in a variety of medical and surgical specialties. Most PA programmes require applicants to have previous health care experience and some college education before taking part in the PA training. Subsequently those who train as a PA often have several years' experience in other health care roles, including nursing, paramedic or allied health (7). As with all health professionals, PAs are regulated at the state level. However, all PAs are required to graduate from accredited PA programmes, and to pass a national certifying examination, in order to practice.

Currently PA education and training programmes are largely based in the United States, although closer to New Zealand, a training programme is established at James Cook University in Townsville, which supports the development of the PA role in Queensland. This programme involves one and a half years of full time study. PA training is also currently offered in six higher education institutes across the UK. These courses require students to have a high level bachelor's degree in biological or health sciences.

The majority of the PAs involved in the current trial were trained at MEDEX Northwest, the University of Washington School of Medicine's Physician Assistant Program. This programme provides a broad, competency-based curriculum that focuses on primary care with an emphasis on underserved populations. The PAs involved in the current demonstrations were also selected for their skills and expertise with a minimum requirement of three years' experience working as a PA in the United States.

3.3 CURRENT EVIDENCE ON THE CONTRIBUTION OF THE PHYSICIAN ASSISTANT ROLE

PA trials and demonstrations have been evaluated in Canada, England, Scotland, Australia, The Netherlands, and the United States (13,14). These evaluations have provided some useful insights into the acceptance of the PA role by other staff and patients, as well as the impact of physician assistants on quality of care, access and efficiency. A summary of these evaluations is provided in Table 1. The evidence from these evaluations is then used to describe the current evidence on the contribution of the PA role to different healthcare systems and contexts. It is worth noting that the scope of this evaluation (encompassing site visits, qualitative interviews, clinical data analysis,

patient surveys, and staff surveys) compares very favourably with the studies explored here, with most of the international studies being of relatively smaller scale to this evaluation.

Patient satisfaction with PAs was high across all trials. An evaluation of PAs across four settings in Queensland found that 91% of patients were very satisfied and 6% were fairly satisfied with the quality of care they received from the physician assistant (11). However, many other evaluations have not directly asked a sample of patients about their view on the role. Perceptions of patient satisfaction come from healthcare staff which may introduce bias into the results. In addition, it does not allow for satisfaction to be quantified and easily compared to that of other health professionals.

There appear to be no concerns over the quality of care that physician assistants provide, and the growth of the PA role in overseas jurisdictions can be seen to support the view that PAs are clinically safe. In an evaluation in the United States, quality was measured using inpatient mortality, ICU transfers and readmissions data. In most evaluations quality was assessed qualitatively through staff interviews. Both methods found the use of physician assistants helped improve overall quality of care for patients. Staff mentioned the work of physician assistants themselves was of high quality. Quality of care from the overall team with a PA team member tended to be talked about in terms of increased access to care which is correlated to improved patient outcomes (9-11).

Access to healthcare increased in the evaluations in which this was measured (9-12). This mostly involved data on patient wait times. However it is to be expected that access would increase with the addition of another health professional regardless of their profession. The ability to attribute this improved access directly to the characteristics of the physician assistant role is limited. The evaluations do tell us that previous trials have found that the PA role can support the workload of doctors by reducing the need for overtime and enabling doctors to see more complex patients.

Table 1: Evidence from international physician assistant trials

PA evaluation	Key methods	Patient satisfaction	Quality of care	Access to care	Efficiency
Bohm et al. (2010). Experience with physician assistants in a Canadian arthroplasty program.	PA daily diary. Self-administered questionnaire for surgeons (n=4), residents (n=6), nurses (n=10) and patients (n=25). Throughput and wait time data from health authority waitlist database.	Patients expressed very positive opinions		Median wait times decreased from 44 weeks to 30 weeks compared to previous year.	42% increase in throughput. Saved 204 hours of supervising physician time.
Woodin et al. (2005). Evaluation of US-trained PAs working in the NHS in England.	Face-to-face interviews (n=21). Activity data	Good patient satisfaction with the role.		Improved access and waiting times.	
Farmer et al. (2009). Evaluation of PA's to NHS Scotland	Individual and group interviews with PAs, stakeholders, and patients. Monthly feedback forms. Work activity data.	Patients were satisfied.	Practice was safe.		Cost-effectiveness depends on the role they take
Urbis. (2010). Evaluation of the Queensland PA pilot - final report.	Staff surveys (n=99). Patient surveys (n=94). Interviews (n=120) of PAs, staff, patients and external stakeholders. Supervisor quarterly progress reports. Available service data at sites.	91% patients very satisfied.	PAs provided safe and quality care across IOM domains.	ED presentations and waiting times decreased.	Doctor overtime 18% decrease.
Roy et al. (2008). Implementation of PA/hospitalist service in an Academic Medical centre.	Retrospective cohort study with 992 on PA service and 4202 on traditional service. Data on length of stay, cost of care, inpatient mortality, ICU transfers, readmissions, and patient satisfaction.	No difference in patient satisfaction compared to traditional service.	No change in inpatient mortality, ICU transfers or readmissions.		Cost of care 3.9% lower, adjusted length of stay 5% higher.
Impact on patient flow after the integration of NPs and PAs in 6 Ontario Eds.	Retrospective review of health records data.			1.6 times more likely to be seen in wait time benchmarks, 44% less patients left without being seen.	30.3% lower length of stay.
Simkens et al. (2009). The PA in general practice in the Netherlands	Before and after case study. Data from electronic health records.	Patient list increased by 1.2%.	Types of consultations for GP changed and differed between PA and GP. PA did more acute appointments and women's health.	Patient contacts per 1000 patients increased 17%.	PA had contact with 40% fewer patients than a GP.

Various approaches have been taken to measure the efficiency of the PA role. Cost-effectiveness is largely determined by the role the PA undertakes as well as the way in which it is measured. Different trials and different reviews have different perspectives on the cost-effectiveness of PAs (14). An evaluation of physician assistants in a Canadian arthroplasty program found they led to a 42% increase in throughput of hip and knee replacements (12). However, when analysing costs they found the cost of hiring the PAs to be similar to the savings from reduced surgical assist fees (12). This essentially made the role cost-neutral compared to using a surgical assistant. A trial in Scotland estimated that a PA would cost £15,000 more if they worked in the role of a practice nurse and would save from £43,000 if they worked like a 'general' doctor (8).

Overall, evaluations of international PA trials have struggled to use a methodology robust enough to identify the efficiency and cost-effectiveness of a PA or make generalizable conclusions (13). They also struggle to easily attribute increased value to the role of the PA rather than the addition of another type of health professional. In the real world the availability of comparison groups is difficult. As a result, many evaluations have used qualitative methods to attribute value to the PA role. While these perspectives have value they still lack the objectivity that can be found from quantitative methods. Even when quantitative methods are used the role of the PA is often evaluated within a limited scope making it difficult to fully quantify the contribution of the PA role to the health system. For example, many trials have stated that the inability for PAs to prescribe has posed a major barrier to realising the full potential of PAs (2,8,9,11). We anticipated that a mixed methods approach would be important for recognising some of these limitations and to provide a comprehensive insight into the introduction of a new role to the health care system.

4. THE POTENTIAL CONTRIBUTION OF PHYSICIAN ASSISTANTS TO THE NEW ZEALAND HEALTH WORKFORCE

The New Zealand health system aims to ensure that high quality health care is available freely for all New Zealanders (15,16). The New Zealand Public Health and Disability Act 2000 legislates into the health system the goals of:

- Improving health and disability outcomes for New Zealanders,
- Reducing disparities,
- Including a community voice, and
- Facilitating access to information to assist with delivering health and disability services (17).

The New Zealand health care system is a large and complex system with a mix of public and private ownership (15,16). The main source of funding comes from the public sector.

Recently, the incoming briefing to the Minister of Health identified the current challenges facing the health system as:

- Changing health needs and burden of disease to an increase in long-term conditions.
- The growing impact of emerging infectious diseases globally (eg Ebola).
- Rapid advancements in technology, developments in personalised medicine and associated changes in public expectations.
- An ageing population and workforce.
- Constrained funding environment for the foreseeable future.
- Sustainability challenges as health consumes a greater proportion of government expenditure.

These challenges and their potential costs have led to an increased focus on keeping populations well through early prevention and intervention of long-term conditions (15). This requires greater integration of services across the health and social sectors, and an increased investment in primary and community care. The Ministry of Health suggests that such shifts will also involve changes to the workforce including the potential for new roles (15). Robust information and evidence will be needed to guide workforce planning, and the commissioning of the physician assistant demonstrations is designed to support this process.

The PA role has been put forward as one of a potential suite of responses to health workforce challenges including current issues relating to the distribution and cost-effectiveness of the health workforce.

PAs are seen as being able to address workforce distribution issues in New Zealand. There are pockets of areas, particularly rural and semi-rural areas which struggle to attract physicians and are likely to remain this way. There are also some shortages in general practice settings. PAs provide an option to increase the clinical workforce in these areas. It is hoped that as physician extenders they will increase the access to medical care without increasing the number of physicians. They provide an opportunity to develop a new care pathway that makes optimum use of skills across the spectrum of care, increase productivity and free up general practitioners and specialists for more focused roles. This may have the additional benefit of making rural practice more attractive to some physicians.

PAs are seen as potentially contributing to a more financially sustainable health system. The salary of a physician assistant is lower than that of a physician in other jurisdictions (13). They can also offer a cheaper option to locums, in areas that struggle to recruit health professionals. We note however that the pay structures that currently apply for the PA trials in New Zealand may not reflect future organisational payscales.

The current PA demonstrations sit within a context of a growing openness to workforce innovations, which include new configurations of services and new workforce roles. Means by which these can be achieved include:

- Developing new care pathways with different workforce configurations
- Investing in technology to support new ways of working
- Regional and national collaboration to support and mentor less skilled staff
- Making greater use of patients' own resources, including self-care skills, and whānau/family care.

In this context, the development of the PA role is seen by its supporters as an opportunity to develop a new care pathway that makes optimum use of skills across the spectrum of care, increase productivity and free up general practitioners and specialists for more focused roles. Some of these potential benefits or contributions are likely to be context dependent. It is likely therefore, that different health care contexts across New Zealand will have different motivations for deciding whether to introduce PAs, given that alternative approaches exist.

5. PHASE II OF THE PHYSICIAN ASSISTANT DEMONSTRATIONS

5.1 SETTINGS FOR PRACTICE

To further understand the contribution of the PA role across a broader range of contexts and clinical settings in New Zealand, Health Workforce New Zealand (HWNZ) introduced a second wave of demonstrations based in primary care, ED, and rural and semi-rural settings.

Specifically, the Phase II demonstrations were spread across four host organisations, with a mixture of geographic and demographic characteristics:

- **Gore:** a rural emergency department setting, hosted by Gore Health Trust; a rural community owned, 20 bed primary care facility, providing an integrated range of health services in Southland. The PA works predominantly in the Emergency Department, although they also support the ward. The PA is clinically supervised from Southland Hospital (Invercargill) and has additional supervision and support from on-site or on-call Medical Officers.
- **Tokoroa:** Two PAs were initially in a small general practice. This practice merged with two other practices in the town in early 2014, and transitioned to a new integrated primary health care centre co-located with Tokoroa Hospital, and hosted by Midland Health Network. The PAs are supervised by on-site GPs.

- **Hamilton:** Working across three practices with mixed population groups, and all in drop-in clinics, hosted by Radius Health Ltd. The PAs are supervised by GPs at each of the practices:
 - Rototuna Medical Centre is an accident and medical centre, offering both appointment and drop-in services. It is located in a relatively affluent and rapidly growing suburb on the north-eastern edge of the city.
 - K’aute Family Medical Centre has a low-access-funded family medical centre in the central city area, serving a large Maori and Pasifika population, and offers free services to patients that are accessible without prior appointments.
 - Davies Corner is an accident and medical clinic on the eastern side of the city, which also offers both appointment-based and drop-in services. It serves a mixed patient population, with approximately half the enrolled population living in quintile four or five areas.
- **Raukura Hauora o Tainui:** Based (initially) at a high needs practice in Huntly. The PA also spent time with Radius Health Ltd and was subsequently seconded to Ngai Tūhoe, a Maori provider in an isolated and rural area with high health needs. The PA was supervised by GPs on site at each of these clinical settings, although at Tūhoe the GP is not present full-time.

Site selection was designed to explore the PA role in a range of contexts, as well as being based on sites’ willingness to participate.

5.2 PHYSICIAN ASSISTANT SELECTION

Initial criteria for PA selection at the demonstration sites included:

- PAs with at least three years’ experience, and an identity established in their role. The intention was not to hire PAs at the start of their career.
- Leadership qualities, demonstrating values of the profession
- A good fit with the practices.

In practice, a broad mix of PAs were recruited, with one at the beginning of her career and already resident in New Zealand, while the others had experience spanning three to ten years in the role. Most were recruited with the assistance of Professor Ruth Ballweg Senior Advisor for Advocacy, Health Policy and Global Development at the University of Washington School of Medicine. Professor Ballweg is an international leader in the PA field and Director of PA Program.

The PAs at the demonstration sites offer a breadth and depth of background and experience. Two came to the PA role from other health care backgrounds, including one as an x-ray technician, and another as a nurse. Some PAs had worked in large practices with multiple physicians and other PAs.

They had access to advanced imaging technology, as well as medical specialists who worked on-site. Another PA worked independently as the only medical professional available in rural settings. Two PAs have previous experience working in ED, while another dealt with complex conditions working at an HIV/AIDs clinic.

5.3 THE ROLE OF HEALTH WORKFORCE NEW ZEALAND

HWNZ is supporting the sector to implement the trials, through a range of steps including:

- Developing a Governance Document, which includes role of the other professional bodies, supervisory requirements, and a practice plan (discussed below)
- Facilitating the appointment of PAs, through taking part in interviews, supporting the relationship with international PA expert (Ruth Ballweg), and funding sites to support with such areas of expenditure as travel, visa and relocation costs.
- General project coordination
- Funding professional development for the PAs.

HWNZ's long term intention is that if the role is to be adopted in New Zealand, it requires the leadership of the sector. HWNZ has made no commitment to further support employers of PAs, such as in the funding of training.

5.4 PHYSICIAN ASSISTANT GOVERNANCE

A cornerstone of the PA pilots is the supervisory relationship between each PA and his or her supervising doctor. As a foundation for the supervisory process, a Governance Document was prepared by HWNZ. Currently, there is no specific regulation regarding the PA role in New Zealand. In the absence of a statutory regulatory process, the Governance Document is intended to “ensure that a non-statutory approach provides the necessary standards, processes and mechanisms to protect the public and instil public confidence.”

Key aspects of the governance document, which flow through into the PA-doctor relationships in practice, include:

- The medico-legal responsibility of patient care and performance of PA lies with the supervising doctor; a “decision to delegate” means that doctors are responsible for ensuring

that a person working under delegation has the appropriate skills, expertise and competence to perform any duties delegated to them.

- Doctors determine the scope of duties and responsibilities of the PA.
- Individual PAs are responsible for ensuring that they work within the agreed parameters of the guidelines and that they provide high quality professional care to the patients in accordance with the agreed boundaries.
- Supervising doctors are responsible for ensuring they carry out their agreed roles as supervisor with reasonable care and skill and in accordance with professional standards.
- A supervisor must be available for consultation with the PA at all times (note this can be offsite; overnights at Gore for example, the PA can be the only medically trained person in the ED).
- PAs are not able to sign prescriptions or to complete paper work or claims for Accident Compensation Corporation or Work and Income New Zealand.

In addition, the governance document includes processes where breakdown of supervisory relationships occur; the scope of practice and delegation; prospective, concurrent and retrospective supervision; and performance management.

6. EVALUATION APPROACH AND METHODS

To understand the value of the PA role across the broader range of contexts and settings HWNZ commissioned Synergia to undertake an evaluation of the Phase II PA demonstrations.

6.1 EVALUATION AIMS AND OBJECTIVES

The aim of the PA evaluation is to determine the value and contribution of the PA role in the demonstration sites, and whether they offer a flexible, fit-for-purpose and sustainable addition to the existing health workforce in New Zealand.

The evaluation objectives are to explore:

- The relevance of the Phase II PA demonstration.
- The effectiveness of the PA role in the demonstration sites.
- The efficiency of the PA role in the demonstration sites.
- The impact of the PA role on patients in the demonstration sites.

- The potential exportability of the PA role beyond the demonstration sites.

Outside the scope of the evaluation are the following:

- The possible demand for PAs in the future workforce.
- Comparison of the PA role with any other health care practice role.
- Consideration of appropriate remuneration.
- Recommendations for policy.

6.2 EVALUATION QUESTIONS

From these aims and objectives, we have developed five overarching evaluation questions in consultation with HWNZ and the Advisory Group:

1. How have PAs integrated with practice activities and service models?
2. What was the impact and contributory value of the PA role for patient outcomes, service quality and business models at the demonstration sites; within this, have the PAs extended or changed the practice model?
3. What factors supported or challenged the integration of the PA role into local practices and with specific professional groups?
4. What are the implications and/or risks for the fit and applicability of the PA role within New Zealand, arising from the evaluation findings?
5. What issues arise from the demonstrations for the potential establishment, transferability and sustainability of the PA role in New Zealand?

These evaluation questions will be used to frame the results section of the report to ensure that the evaluation approach and methods fully addresses the evaluation aim and objectives.

6.3 EVALUATION APPROACH

The evaluation adopted an approach that was designed to:

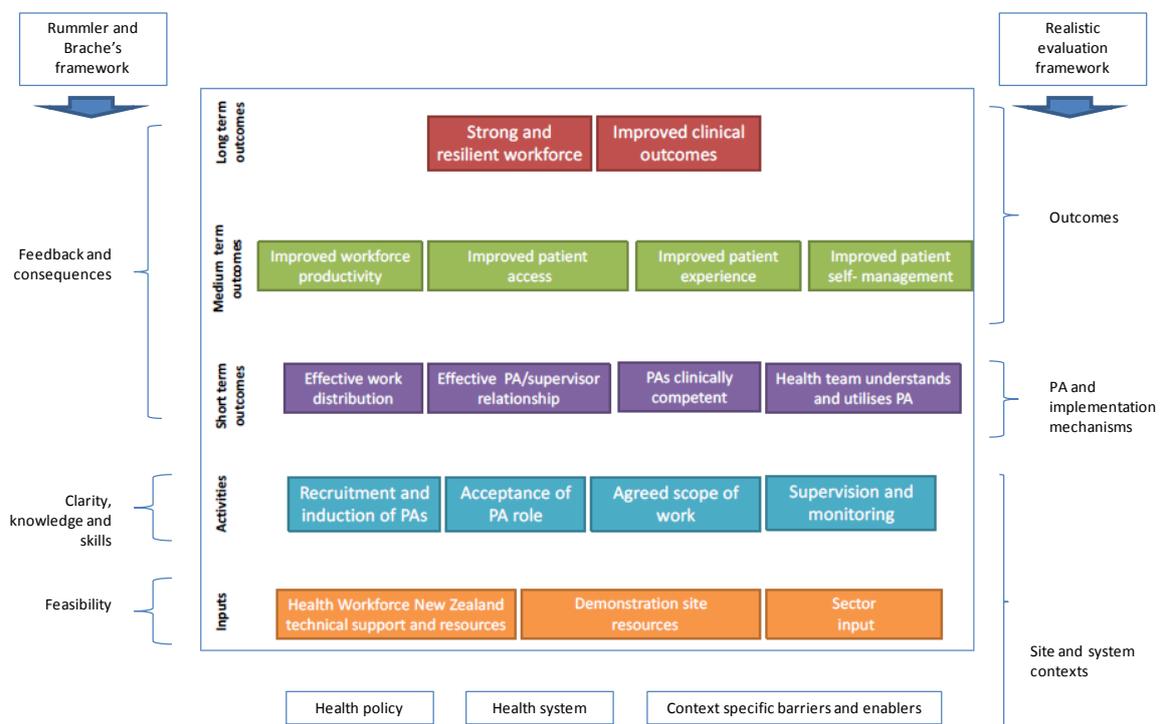
- Reflect stakeholder interests through engagement with the Advisory Group, which includes representation from the Royal New Zealand College of General Practitioners (RNZCGP), the Medical Council, National Nurses Organisations and the New Zealand Medical Association. For example, the Advisory Group will support the finalisation of the evaluation report.
- Recognise the diversity of the demonstration site settings and their influence on the integration and value of the PA role.
- Explore the potential implications of introducing the PA role in New Zealand.

- Be guided by relevant evaluation theories and frameworks.
- Conduct a process and outcome evaluation to address the evaluation aim, objectives and questions.

6.4 EVALUATION FRAMEWORK

An evaluation framework guides the design and implementation of an evaluation. The framework used for phase II of the PA demonstrations draws on the original results framework developed for the evaluation. This framework was presented in the RFP for the evaluation of Phase II of the PA demonstrations. To ensure that the evaluation was also driven by appropriate theory Synergia integrated the PA results framework with the principles of Pawson and Tilley’s Realistic Evaluation framework, and Rummler and Brache’s role introduction analysis framework.

Figure 1: An overarching results and evaluation framework for phase II of the physician assistant demonstrations

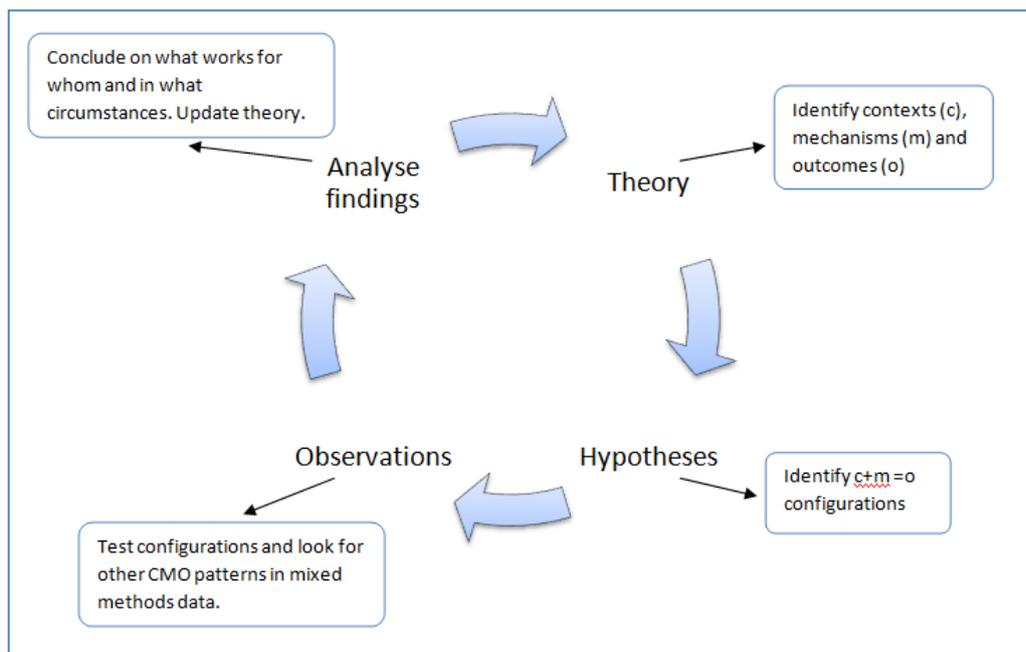


6.4.1 Integrating the physician assistant results framework with a realistic approach

This evaluation draws on the principles of Realistic Evaluation (3). Evaluations adopting this approach aim to understand *what works, for whom, and in what circumstances?*

Realistic evaluation looks for regularity in outcomes and mechanisms, but equally it looks to understand the role of context and explore differences. The approach begins by developing theories on how different mechanisms (e.g. physician assistant skills and experience) produce outcomes (both intended and unintended) under specific, contextual circumstances (e.g. variations in demonstration sites and existing practice; Figure 2).

Figure 2: The realist evaluation cycle (Adapted from Pawson & Tilley, 1997)



This approach was designed to provide greater understanding of the relationships between the inputs, activities and outcomes identified in the PA results framework. More importantly, it allowed the evaluation to identify the impact of individual PA and site characteristics on the activities and outcomes of the demonstrations.

For example, an evaluation of PA roles in the UK found that PA skills and experience were important mechanisms of change. The influence of local need and work setting also impacted on outcomes. It is important therefore, that the similarities and differences of each demonstration site are used to understand the relationship between inputs, activities and contexts in achieving the outcomes

identified in the PA results framework. This is especially important for recognising the cultural and geographical variations in health services in New Zealand.

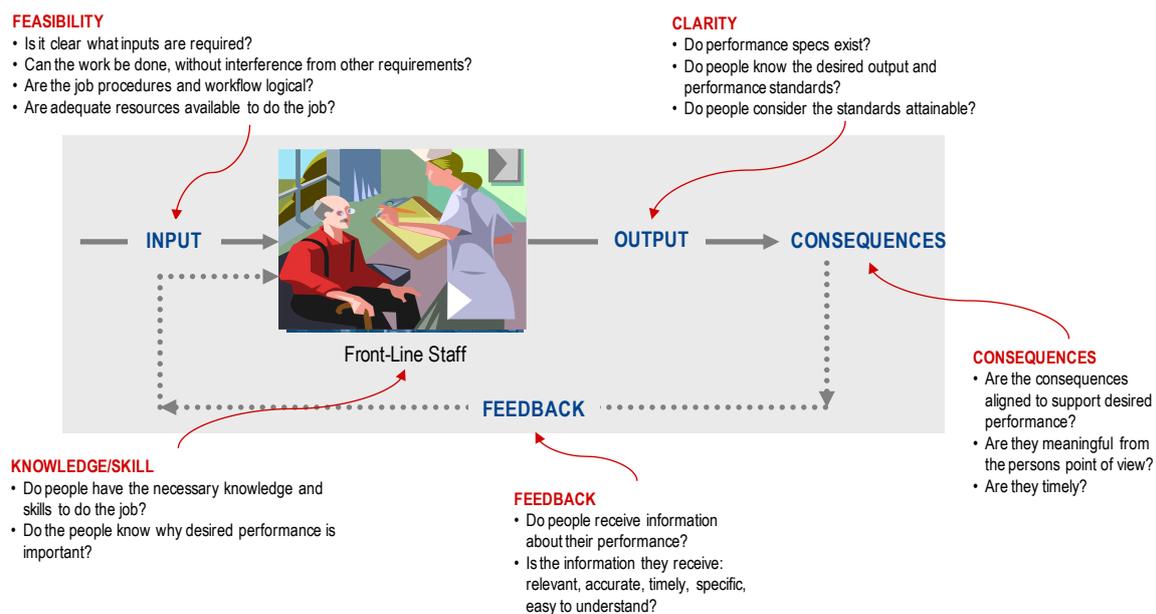
6.4.2 Integrating a framework to understand the value and performance of the PA role

A critical feature of the pilots is the introduction of the PA as a new role within primary care settings. How that role is introduced, and the factors that supported performance in the role and patient outcomes, will be a critical part of understanding the experience of the pilots in such areas of focus as effective work distribution, practice relationships, workforce productivity, patient access, patient experience and self-management support.

In previous evaluations, we have found the framework adopted by Rummier and Brache (Figure 3) is very useful in understanding the performance of people within an organisation, particularly when a new role is introduced. This framework was important for evaluating the implementation (process) and consequences (outcomes) of the PA role.

This framework (Figure 3) offers a comprehensive approach to understanding the goals, design and management of PA roles in the demonstration sites. This has supported the evaluation to identify the ways in which different aspects of the PA demonstrations support or challenge the value and performance of the PA role (contribution analysis).

Figure 3: Rummier and Brache framework for assessing the integration of new roles



Drawing on the evidence gathered through the evaluation and the existing literature will support the evaluation, HWNZ and other key stakeholders in understanding the implementation, impacts, value and potential contribution of the PA role.

6.5 MIXED METHODS DATA COLLECTION

The evaluation framework was used to guide the data collection to identify:

- The ways in which PAs engage with existing practice and the activities that they undertake.
- The impact of PA skills, interests, experience and cultural competence on their effectiveness.
- The impact and contributory value of PAs on demonstration sites practice.
- The fit and applicability of the PA role within New Zealand.
- The factors that support and/or challenge the integration of the PA role into local practices and with specific professional groups.
- The impact of PAs on service quality and improvement.
- Considerations for PA training programmes in New Zealand.
- What is required to support transferability and sustainability of the PA role?

The evaluation adopted a mixed methods approach that draws on the value of quantitative and qualitative methods. Specifically, the evaluation involved:

- Two sets of site visits to each of the demonstration sites to conduct key stakeholder interviews, supplemented by some telephone interviews; a total of 60 interviews were conducted.
- Staff and patient surveys at each site; a total of 511 patients were surveyed and 65 staff were surveyed.
- An analysis of routinely collected administrative and clinical data

These data sources were integrated to determine the value and contribution of the PA role in the demonstration sites, and whether they offer a flexible, fit-for-purpose and sustainable addition to the existing health workforce in New Zealand. The breadth of data collected for this evaluation is on a par with, and in many cases exceeds that collected in overseas studies. Note that this is not an economic evaluation, which with the time and resources available would have added a significant layer of complexity to the approach.

6.5.1 Site visits and key stakeholder interviews

Site visits were conducted at five of the six phase II demonstration sites in December 2013 and October 2014. Site visits were not possible at Ngai Tūhoe in Taneatua as the practice was not established at the time of the first site visits and had only been up and running for three months prior to the second set of site visits. We were able to conduct telephone interviews with the practice manager and the PA at this site in December 2014.

In total, sixty interviews were conducted through the site visits and telephone interviews. The site visit interviews and telephone interviews with Ngai Tūhoe were conducted by the evaluation team which included a physician (Table 2; Table 3).

Table 2: December 2013 site visits and interviews by demonstration site and health professional

Site/host organisation	PAs	Supervising GPs/Medical Officers	Managers/Administrative	Nursing	Total Interviews
Gore Hospital	1	2	1	2	6
Radius Medical (Davies Corner, K'aute Pacific and Rototuna)	4	3	3	2	12 (1 interview with small group)
Tokoroa (Midland Health Network)	2	2	3	1	5 (2 interviews with small group)
Raukura Hauora o Tainui	[Not available at time of site visits]				
Overall Totals	7	7	7	5	23

Table 3: September 2014 site visits and interviews by demonstration site and health professional

Site/host organisation	PAs	Supervising GPs/Medical Officers	Managers/Administrative	Nursing	Total Interviews
Gore Hospital	1	2	1	1	5
Radius Medical (Davies Corner, K'aute Pacific and Rototuna)	3	2	2	3	10
Tokoroa (Midland Health Network)	2	2	3	0	7
Overall Totals	6	6	6	4	22

A nurse researcher conducted telephone interviews with nursing staff across five of the six sites. Specifically, an additional 13 interviews (5 at Radius, 5 in Tokoroa, and 3 in Gore) were conducted by telephone with nursing staff at three sites by a nurse evaluator in November 2014.

The interviews were designed to explore:

- Relevance, design and preparation of the PA demonstrations.
- Scope of practice and supervision.
- Integration into current practice.
- Perceived impacts and benefits.

6.5.2 Patient surveys

A paper survey was developed for patients to describe their experience with the PA. The survey was designed to determine the patients' acceptance and satisfaction of the care that they received from the PAs at the different sites. Specific, the survey invited patients to identify their agreement or disagreement with the following statements:

- I felt listened to
- I was involved in decisions about my treatment and care
- My questions were answered in a way that I could understand
- I was told what to do if my problems or symptoms continue or get worse
- I have trust and confidence in the health professional
- The health professional that I saw was friendly and approachable
- The health professional respected my culture and beliefs
- The health professional was knowledgeable about my condition and how to treat it
- I would be happy to be treated by the same person again

Each clinical setting kindly agreed to give out the survey to all patients who were seen by other medical professionals (e.g. GPs and nurse practitioners at the primary care demonstration sites, or Medical Officers at the ED demonstration site), to ensure the results of the PA survey have some form of comparison. This was not designed to make comparisons between PAs and specific health professionals but to provide a baseline of satisfaction to compare patients' satisfaction with PAs to.

The survey was distributed to the patients by the health professionals at five of the six sites, as Ngai Tūhoe had not long been established during the patient survey data collection period. The patient survey was collected during the fourth week of each month for a period of five months (June to October 2014). In total 511 surveys were completed by patients across the five sites (Table 4).

Table 4: Patient surveys completed across five of the six Phase II demonstration sites

Site	Number
Davies Corner	119
Gore	43
K'aute	105
Rototuna	159
Tokoroa	85
Total	511

The survey was distributed by the health professional that spent the most time with the patient. Each health professional identified their role at the top of the survey before handing the survey to the patient to complete. Unfortunately this component of the survey was not always completed. Once completed the surveys were placed into a sealed box at the reception desk. Nearly half of the returned surveys were of patients that had seen a physician assistant (Table 5).

Table 5: Patient surveys received and relating to types of health professionals

Health Professional	Number
Physician Assistant	220
Doctor	137
Nurse	19
Nurse Practitioner	10
Doctor & Nurse	1
Role not identified ³	124
Total	511

The patient survey data supplement in Appendix 1 provides further information on the patients that completed the survey and its key findings. These findings are also used to address the evaluation questions in Sections 6 to 10. Note that the number of patient surveys received provides an adequate sample for the purposes of this evaluation, and in fact well exceeds that of many overseas studies.

³ Role not identified refers to surveys that were completed but where the role of the health professional seeing the patient was not recorded by the professional who handed the survey form to the patient. No obvious discrepancies were found between these patients and others where the role was recorded.

6.5.3 Staff survey

Clinical and support staff at the demonstration sites were invited to take part in an online survey in November 2014. The survey was designed to identify staff perceptions of:

- The contribution of the PAs they worked with,
- The impact of the PA role at their clinical setting, and
- The potential role for PAs in the New Zealand health workforce.

The survey was disseminated by key contacts at five of the six demonstration sites. These key contacts had supported the evaluation team throughout the PA evaluation. The evaluation team drafted the email invites and 1 week, last two days and final day reminders to support the dissemination of the survey.

A total of 65 staff surveys were collected from the five demonstration sites. Staff were asked which clinical site they came from, their role at the site, and with which physician assistants they mostly worked. One of the respondents indicated they were a physician assistant. However, they did not continue to complete the survey and this response has been excluded leaving 64 responses.

The majority of staff responses came from Rototuna and Gore had the least responses (Table 6).

Table 6: Staff completing the survey by demonstration site

Clinical Site	Responses
Rototuna – Hamilton City	23
Midlands Network – Tokoroa	16
Davies Corner – Hamilton City	14
K’aute Pasifika – Hamilton	9
Gore ED	3
Total	65

Most of the staff who completed the survey identified themselves as nurses or GPs (Table 7). There was also a range of other clinical and non-clinical staff that completed the survey, including reception staff, supervising GPs, administrative staff and managers.

Table 7: Staff completing the survey by role

Role	Responses
Nurse	19
GP	15
Reception	8
Supervising GP	6
Administration	4
Managers	4
Medical Care Assistant	3
Other	2
Medical Officer	1
Nurse Practitioner	1
Total	63

The staff survey data supplement in Appendix 2 provides further information on the staff that completed the survey and its key findings. These findings are also used to address the evaluation questions in Sections 6 to 10.

6.5.4 An analysis of routinely collected administrative and clinical data

The evaluation team engaged with five of the six demonstration sites (the three Hamilton practices, Tokoroa and Gore; i.e. not including the Taneatua practice) to secure existing management, administration, and financial information data to explore the overall impact of the PA at the higher, demonstration site-level. As many of the PAs were in place for a considerable period of time before the start of the evaluation, it was more effective to make use of existing systems rather than introduce additional data collection processes.

For the general practice sites, data was extracted from their existing patient management systems (PMS) and administrative databases. At the core of the analysis was an anonymised consultation-level dataset which was matched to various databases, such as work rosters and labs, specialist referrals and prescriptions ordered. This allowed the evaluators to analyse the activities of the PA and the impact on the practice and its workforce.

For the Emergency Department site, data from Southern DHB's patient database was used to examine the activities of the PA, as well as administrative and financial data to measure the impact of the PA.

While there was some variation across the PA sites due to the availability of data, most of the analysis covered the period from 1 January 2012 to 1 December 2014.

These datasets allowed the evaluation to explore, firstly, **the activities of the PAs and how the role compares to other clinicians working in the same setting**. This analysis only focused on the period after the PA had joined the site. This analysis was undertaken across all five demonstration sites.

Specific measures included:

- The numbers and volumes of patients seen by a PA.
- The types of patients seen in terms of general demographic measures such as ethnicity, age, and gender.
- The clinical profiles of patients, using screening codes (e.g. for vitals and CVD risk assessments) were used as a proxy for clinical profiles at the population level.
- The types of activities related to/as a result of consultations, such as the proportion of prescriptions, labs, or specialist referrals ordered (specific details about what was ordered was outside the bounds of this analysis).

Secondly, the analysis explored the **impact of PAs on practices and the other clinicians**. This was primarily a pre/post analysis that compared the one year period directly before, with the one year period directly after the PA entered the practice. Due to the different starting times of each of the PAs, this pre/post time frame varied for each practice. Specific measures included:

- Changes in volumes of patients' seen and patient throughput (e.g. patients seen per hour).
- Pre and post changes in the types of patients seen by other clinicians (i.e. non-PA) in terms of general demographics and clinical profiles (using screening codes as a proxy).
- Changes in the workforce, in particular hours worked and workforce mix.
- Changes in activities such as the proportion of prescriptions, labs, or specialist referrals ordered.

For the Tokoroa site, in addition to the implementation of the PA role, there were other substantial changes to the practice and model of care. This invalidated any analysis of the impacts of the PA role listed above. These changes included a shift of the practice to a new PHO prior to the implementation of the PA role (causing issues with data completeness), an addition of a phone-based triage system during or soon after the implementation of the role, and a consolidation of three practices into one practice during the course of the evaluation period. For this reason, when examining the impact of the PA role on practices, the analysis will only cover the three Hamilton-based primary care practices. The Tokoroa site is included in the analysis of patient and staff survey data, site visits and key stakeholder interviews.

All analysis was at an aggregate level to prevent identification of individual patients.

6.6 DATA ANALYSIS

6.6.1 Analysis of core data sources

Prior to the integration of each of the data sources obtained in this report, the data sets were individually analysed using methods traditionally associated with that approach:

- Key stakeholder interviews were thematically analysed using the data domains and evaluation questions to frame the analysis. At the same time, the evaluation team were also open to new themes or insights that had not been anticipated through the evaluation design.
- The patient and staff surveys were analysed using descriptive statistics to provide an overview of the key findings. When appropriate inferential statistics were used to explore significant differences. This was typically done using non-parametric tests due to the sample size and type of data.
- The routinely collected administrative and practice level data was analysed using a combination of descriptive analysis and statistical and machine learning methods (as appropriate). In particular, to explore differences in patient screening profiles between PAs and other clinicians, a Classification and Regression Tree (CART) analysis was performed. This is a machine learning methods that uses statistical modelling on large datasets to create a decision tree based on co-occurrence relationships between specific groups or measures. The CART analysis is particularly effective at rapidly identifying clusters of categories (for this analysis, screening codes) which commonly occur together and display a statistical difference between (in this case) clinicians.

6.6.2 Mixed methods data analysis and integration

Evaluations involving quantitative and qualitative data sources can be integrated to provide greater insight and understanding of an initiative (18). Integration moves beyond data triangulation to confirm the existence of phenomenon across a number of data sources. Integration focuses on a specific variable of interest or evaluation question to comprehensively assess both quantitative and qualitative data.

In this evaluation, it has enabled the analysis to look within and across sites to identify findings common to all sites, as well as those that are unique to specific contexts. The analysis also enables the evaluation to identify the contribution of each data source to the evaluation questions. The integrated analysis is further strengthened by assessing the evidence underpinning the evaluation.

For example, quantitative data on the impact of the PA role can be assessed alongside qualitative data on its impact.

The mixed methods data analysis has drawn on six key data domains to facilitate integration.

Specifically, these domains are:

- Patient experience and impact
- Clinical contribution
- Health service and workforce impact
- Financial impact on demonstration sites
- Physician assistant integration and development
- Contextual contributors

The analysis of the data across these key domains was then used to address the key evaluation questions. It is these key questions that are used to share the integration of the different data sets and their contribution to the evaluation.

7. HOW HAVE PHYSICIAN ASSISTANTS INTEGRATED WITH PRACTICE ACTIVITIES AND SERVICES MODELS?

This section uses the multiple data sets collected during the evaluation to address the evaluation questions. Specifically, this section draws on the interview data, the patient and staff survey to identify how PAs have integrated with practice activities and service models.

7.1 ROLE INTRODUCTION

There was some substantial variation in the level of preparedness of host organisations for the PAs arrival. For example, the two Tokoroa PAs arrived without local representatives of either the practice or host organisation being aware that they were in New Zealand, and no accommodation was ready. In contrast, all of the other settings had accommodation and transport organised for the arrival of the PAs.

In Gore, all relevant staff were informed of what the PA role was, and how the role would fit into the medical community. They put an article in the local paper welcoming the PA to the town and explaining what the role was.

An orientation for the PAs was facilitated by Gore Health and supported by Health Workforce New Zealand. The orientation introduced the PAs to the New Zealand medical system, including ACC and

WINZ. However, not all of the PAs arrived in time to access to this more formal orientation process. A more consistent approach to orientation at each site would have supported the integration of all of the PAs.

Following the orientation, HWNZ also supported regular face-to-face opportunities for training and support for the PAs. These meetings provided a highly valued opportunity for the PAs to connect with and support one another. In terms of training needs however, some of the PAs would have liked more opportunities to attend professional development opportunities targeted at doctors and nurses. Two of the PAs felt that this would have also supported their integration and connection with the wider sector.

During the first set of site visits, most of the PAs felt relatively settled. They felt that they were fitting into their new communities and making friends. In the second set of site visits in September 2014, three of the PAs were planning to return to the United States. One PA was unsure if they would stay, and three were committed to remaining in New Zealand.

Suggestions from PAs for future settlement processes (if required) were:

- Information and briefings about the NZ health system, and clarifying pharmaceutical names to ease the transition between medical systems.
- A comprehensive orientation to the clinical setting and New Zealand health system.
- A central physician assistant coordinator that fielded inquiries and questions for the PAs both before and after their arrival in New Zealand.
- Increased opportunities to engage with a broader range of professional development and learning activities.
- Increased opportunities to engage with the wider health sector.

Whilst the evaluation is primarily focused on the role (as opposed to the demonstration trials), these learnings are important in the sense that overseas recruitment could continue to be a component of the PA role development in New Zealand.

7.2 UNDERSTANDING THE PHYSICIAN ASSISTANT ROLE BY COLLEAGUES

As when starting any new job, the PAs had to build relationships with colleagues and carve out a professional space. The PA role is a collaborative one. However, some uncertainty surrounding the PA role meant that this collaboration was not always straightforward:

“Mainly because what exactly do they do? What can’t they do? It was trying to define that. And I think it’s a bit like nurse practitioners, they all have a different role. My understanding is that they work closely with the doctors.” (nurse)

When PAs were first introduced to their individual practices, there was a learning period for existing staff to understand their role. This is well illustrated through the relationship between some of the supervising physicians and the PAs. Supervisors and PAs need to establish how to have an effective collaborative relationship. The PA has to learn a new health system, and the physician has to feel comfortable handing over a level of responsibility to the PA. The nature of this more collaborative supervisory relationship was challenging for some physicians. This challenge is also likely to be exacerbated by the supervising physician being responsible for the conduct and practice of the PAs in the current demonstrations (discussed further in Section 8).

The broad scope of practice of PAs and its association with their supervising doctor did pose some initial challenges to the integration of the role. Once the PA role was understood, there appeared to be little challenge to the integration into existing practice. This process was most efficient when the sites prepared for the arrival of the PA.

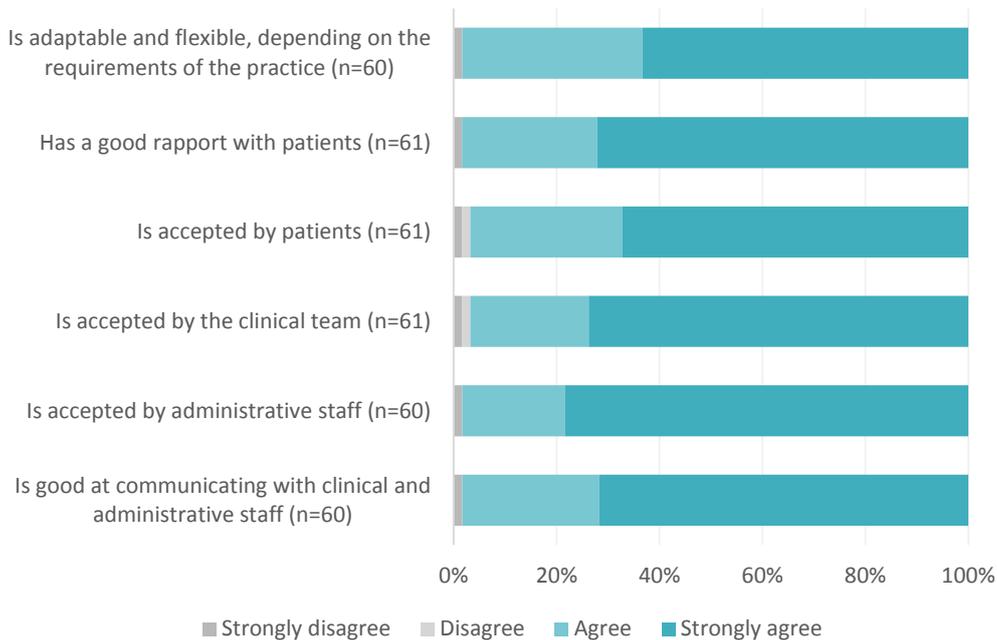
Sites with more than one PA had the advantage of using the learnings gained from the first integration process (i.e. where one PA had arrived ahead of other recruits). PAs individual preparation for practicing in New Zealand also supported the integration process.

7.3 STAFF FEEDBACK ON THE INTEGRATION OF THE ROLE

Once the role is understood, the staff survey provides evidence on the successful integration of the PAs to their different clinical settings. Specifically, the staff survey indicates that most of the staff either agreed or strongly agreed that the PAs that they worked closely with:

- are adaptable and flexible, depending on the requirements of the practice (98%).
- have a good rapport with patients (98%).
- are accepted by patients (98%).
- are accepted by the clinical team (97%).
- are accepted by administrative staff (98%).
- are good at communicating with clinical and administrative staff (98%; Figure 4).

Figure 4: Staff agreement with the statements “the physician assistant that I work most closely with.....



The integration of the PA role at the different sites is also reflected in the staff survey question that asked participants to provide “any final comments on the PA role”. The most frequent comments (N=7) reflected the following themes:

- Enjoyment of working with the PAs
- PAs as valuable members of the team
- Excellent contribution of the PAs (see Appendix 2).

7.4 PHYSICIAN ASSISTANTS’ SCOPE OF PRACTICE

In alignment with international approaches to integrating the PA role, the PAs scope of practice was tailored to their skills and the patient profile at each of the clinical settings. Given the broad range of procedures that can be undertaken by a PA, it was the responsibility of the supervising physician to develop the PAs scope of practice in consultation with the PA. While determining this scope worked well across most of the settings, it has been challenging for one or two PAs who still consider themselves to be practising below their potential. For some of the PAs however, the clinical settings that they were placed in had actually broadened their scope of practice:

“For me on a personal level it’s been a really big plus, just because it’s really sort of broadened my scope of practice. Because in the United States we don’t have too many GP practices that are mixes with an A&E... So the scope of practice is actually quite broad here. So that’s been a huge plus for me.” (PA)

The collaborative nature of the PA role and their training was also associated with their ability to develop their own scope of practice with their supervising doctor, and to be able to be clear about their limitations. For example, the PAs and the doctors often indicated that the PAs would ask for help when needed:

“[PA] is on the ball, knows straightaway, I need to get [doctor], I need to get another doctor who’s working on the floor in straightaway.” (doctor)

The PAs also engaged with staff at the different settings to help them to understand their role and scope:

“In the beginning some of the nurses, who weren’t used to working with us.... they used to have a lot of questions about what PAs are and our role, and so it was a lot of education. And in terms of doing more in our scope of care, I think sometimes people would try to schedule with me something really complicated, with heart failure, and dialysis, and blood pressure’s dropping. And it’s not that PAs don’t do that, because in certain places in the States they do....but it’s just not my comfort level.” (PA)

During the demonstrations all of the PAs had to approach their supervisory physician for prescriptions to be signed. This was sometimes challenging for the doctors and the PAs. This notion is explored more in Section 8.

7.5 PHYSICIAN ASSISTANT ROLES AT SITES

PAs are trained to be extremely flexible about where and how they work in medicine. Their training allows them to integrate into practices, and “help to take the load” in providing needed health care services. Among the seven PAs currently in New Zealand, the PA role is mostly characterised by a certain amount of independence to see and diagnose patients, with a supervisory physician available for support.

The roles implemented at the demonstration sites to date largely follow a drop-in model, whether it is in community-based primary care or ED. At Radius Group in Hamilton, the staff interviewed indicated that the three PAs are practicing in a role that is similar to a doctor, seeing drop-in patients

in the same manner as practising GPs. They are able to choose patients from the queue based on their assessment of competence for the issues being presented.

In Tokoroa, the two PAs work primarily with drop-in patients, and tend to take on acute patients rather than those with long-term conditions. Patients with long-term conditions are more usually seen by the GPs and a nurse practitioner at a nearby clinic that has a long-term condition specialisation. This focus on acute patients for the PAs was also related to the restrictions on prescribing. PAs did not have prescribing rights during the trial and this meant that they tended to see more acute patients rather than those with long-term conditions. At the time of the second set of site visits in September 2014, Tokoroa Medical Centre had moved to an appointment based system with appointments being made through the Midland call centre in Hamilton. While this initially resulted in the PAs and other health professionals being booked with some patients that they were not best suited to treat, the system is now triaging patients to the appropriate health professional.

At both the Tokoroa and Hamilton sites, some patients ask for a PA by name when making appointments. For example, the female PA at Tokoroa Medical Centre was often requested for women's health needs.

"I've been doing some of the women's health, like IUD placements, I don't think anyone else in the clinic does that. And so sometimes those get scheduled into my appointment book as well." (PA)

At the Gore site, the PA is working in an ED setting, and is the key point of contact for patients ahead of doctors. The PA is always supported by a Medical Officer either on site or on call (after hours). In addition, the PA also supports the ward work, which is mostly patient follow-up.

Overall, the PAs have slotted in and supported existing models of care rather than shifting or changing practice models. The only example of an initial shift was the role of the PAs in setting up a drop-in clinic in Tokoroa Medical Centre during the winter months. This was generally seen to work well, but required some adaptation as it progressed: for example, it was realised that patients who were repeatedly using the clinic needed to be seen by a GP for more complex or recurring issues. This reflected the lack of triage processes around the drop-in approach.

8. WHAT WAS THE IMPACT AND CONTRIBUTORY VALUE OF THE PHYSICIAN ASSISTANT ROLE FOR PATIENT OUTCOMES, SERVICE QUALITY AND BUSINESS MODELS AT THE DEMONSTRATION SITES; WITHIN THIS, HAVE THE PHYSICIAN ASSISTANTS EXTENDED OR CHANGED THE PRACTICE MODEL?

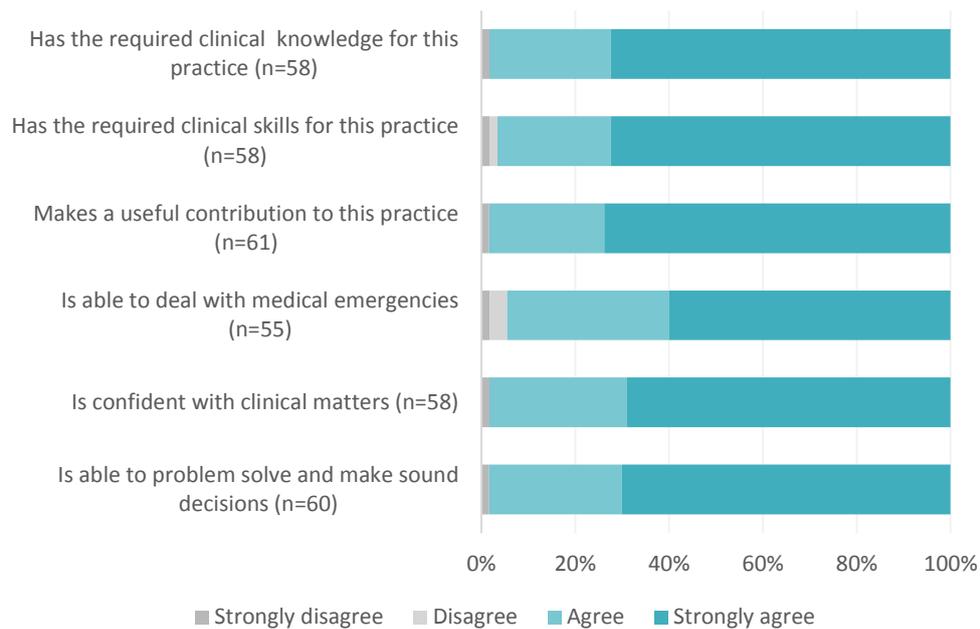
Across a range of areas, the physician assistant role and contribution was clearly valued and appreciated across all the sites. It is worth noting that of those who were interviewed among clinical and administrative leadership at all sites (including supervising doctors, and practice/hospital management), there was comprehensive support for continuing the PA role and addressing the regulatory or recruitment barriers.

8.1 GENERAL FEEDBACK FROM PHYSICIAN ASSISTANTS' SITE COLLEAGUES ON CONTRIBUTION AND VALUE

Overall, the colleagues of PAs at all the sites indicated that the PAs were making a valuable contribution to their clinical settings. Almost all staff who took part in the online surveys either agreed or strongly agreed that the PA they work most closely with:

- have the required clinical knowledge for their clinical setting (98%)
- have the required clinical skills for their clinical setting (97%)
- make a useful contribution to the clinical setting (98%)
- are able to deal with medical emergencies (95%)
- are confident with clinical matters (98%)
- are able to problem solve and make sound decisions (98%)

Figure 5: Staff survey responses to the statements “the physician assistant.....

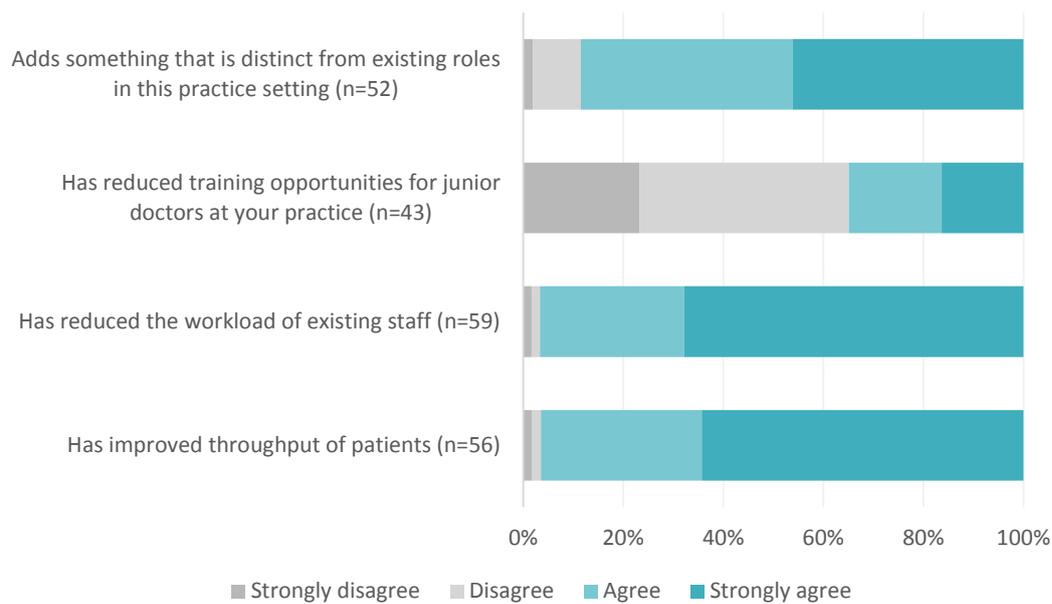


In terms of the impact that PAs had made in their clinical settings, there was also a generally positive response from staff in the following areas:

- improved throughput of patients (96% agreed or strongly agreed)
- reduced the workload of existing staff (97% agreed or strongly agreed)
- adding something that is distinct from existing roles in the clinical setting (89% agreed or strongly agreed)

In addition, 65% of staff *disagreed* that the physician assistants they work closely with had reduced training opportunities for junior doctors at their clinical setting. Whilst this indicates that this issue is of more concern to staff than other issues, there is no evidence to suggest that employment decisions were made that would reflect this concern. Leadership at the sites remained committed to supporting the development of junior doctors.

Figure 6: Staff survey responses to the statements “the physician assistant....”



8.2 SUPPORTING PATIENT FLOWS

A clear area of value offered by the PAs at each site was supporting delivery of patient volumes, and maintaining workflows; the quality of the service provided by the PAs was an important enabler of this. Comments from interviewees included two staff in a drop-in setting:

“A good pair of hands for us to obviously see more patients in the day” (doctor)

“It just facilitates the flow so much better. It saves the GPs a lot of time. They’re very competent and apart from the signing of the scripts there’s very little they can’t do.” (nurse)

This was particularly important in allowing sites to better respond to unmet demand, particularly low acuity work:

“That’s the gap they fill, the unmet demand. So traditionally, you know, you fill up with your GP ... But what we’ve done is made the GP appointments more meaningful by giving them a bit more time.” (administrator)

While all had initial challenges with the New Zealand care environment, such as the different medications and processes, all were seen to be working effectively in their clinical settings. The alignment of PAs with a medical model was seen by some respondents in administration and doctor roles to both support doctors in clinical settings and to complement the other members of the clinical team. One nurse manager indicated a valued contribution to the practice:

“Medically they've got a great grounding and I haven't come across anything they can't deal with... The PA role has worked incredibly well, they have a really good knowledge base. If patient just wants to be seen the PA can get through the numbers really well. They ask questions if they're unsure. They fit more in the doctor's role and they will delegate tasks to nurses just like the doctors do but tend to want to be more hands-on, for example if it's a dressing they review it regularly and suggest dressings that improves continuity of care (nurse)

During the course of the evaluation, the six PAs undertook over 30,000 patient consultations. Due to the nature of the site selection, the majority of these consults were in the general practice settings (comprising approximately 27,000 consults). Approximately 3,000 were in the emergency department (ED) setting in Gore.

There was considerable variation in the volume of patients seen by each PAs each month, ranging between 117 per month to 645 patients per month. Based off the qualitative findings, this variation was likely to be due to the site context and setting (e.g. high turnover walk-in general practice vs regional ED) and the experience of the respective PA (the less experienced PA tended to output lower volumes).

Unsurprisingly, in the primary care settings the patient volumes correlated strongly with the average number of patient seen per hour. There was wide variation among the PAs, ranging from an average of 2.7 patients per hour to an average of 4.4 patients per hour (data taken from across the course of the evaluation). As with patient volumes, the differences in patients per hour roughly aligned with the qualitative findings about context of the practice (e.g. high turn-over walk-in consultations) and the experience of the PA.

The PA in the ED site contributed a substantial portion of the overall volumes of the ED, accounting for 28% of all the patients seen in the ED over the course of the evaluation. This proportion is comparable to the full time Medical Officer, and higher than a number of the other doctors working at the ED.

Overall, at general practice sites, female PAs and female GPs tended to see a higher proportion of female patients than male GPs and male PAs (and vice versa). This could indicate that some female patients were preferentially picking a female practitioner regardless of whether it was a PA or GP (and vice versa for males). This was not the case for the Gore ED, where proportions were similar; this likely due to there being only one MO/PA in the ED at any time. At one of the practices there was no gender effect, whether between female GPs, male GPs, or the female PA. This could be due to the nature of the practice, which is a free walk-in clinic.

In the primary care settings the PAs tended to see a slightly younger cohort of patients compared to the GPs in the same clinic. All PAs in primary settings tended to see fewer patients aged over 45, and particularly fewer patients aged over 65. In particular, the PA in a walk-in practice who had a focus on acute patients tended to see a higher proportion of younger patients, even compared to the other PAs.

Overall, PAs tended to see slightly more Maori patients than GPs in the same clinic, and slightly fewer European/Other patients. This was less pronounced than the differences in other demographic measures. Across all ages the PAs had proportionally more Maori patients than GPs on average. In the two drop-in clinics, this difference was most pronounced in patients under 5 years old. This may reflect that nature of the Hamilton demonstration sites where the PAs were primarily seeing drop-in patients without appointments, as opposed to GPs who were seeing a mix of drop-in and appointments.

8.3 PATIENT MIX AND COMPLEXITY

It was important that this evaluation examined any differences in the types of patients seen by PAs and Supervising GPs at a clinical level – for example were PAs seeing more complex patients with long term conditions and co-morbidities, or more acute conditions and issues?

In the qualitative discussions, a common theme was the ability of PAs to focus on drop-in patients with acute issues, which resulted in the doctors seeing patients with more complex conditions. This was generally seen as an important contribution.

The generally acute role supported a focus in some practices on more complex conditions by GPs. It was noted by some interviewees that in some cases this did add to the pressure for GPs, by creating a more constant flow of complex cases, and reduced the variety of patients they were seeing.

To obtain a quantitative indication of the extent to which this was occurring, an analysis was undertaken of a selection of screens and tests ordered as a consequence of a consultation. While the individual screens may not directly state whether a patient is more or less complex, at a population level they give a useful indication of the types of patients that a clinician is examining.

A Classification and Regression Tree (CART) analysis was performed using data from the Hamilton practices (discussed in the method section).⁴ Based on this analysis (figure 7 below) there are two broad groups of screening codes where a significant difference emerged between the PAs and Supervising GPs. PAs were significantly more likely ($p < 0.001$) to be associated with screening codes related to taking vitals. The screens more closely associated with PA consultations included pulse, oxygen percentage, respiratory rate, temperature, and Kessler scores (psychological distress in the last 4 weeks).

Consults undertaken by the supervising GP were significantly more likely ($p < 0.001$) to be associated with screening codes related to long-term conditions and complex co-morbidities. The screens more closely associated with supervising GP consultations included diabetes screens (HBA1c, feet checks, retinal screens, annual review), creatinine/albumin levels, cholesterol, HDL and LDL, CVD risk assessments, warfarin monitoring, BMI, smoking status, and anxiety/depression.

Within these two broad categories there were a number of sub-categories which varying degrees of co-occurrence. For example PAs were more likely to take a pulse than supervising GPs, while supervising GPs were particularly more likely to order a diabetes-related HBA1c and Albumin/creatinine ratio.

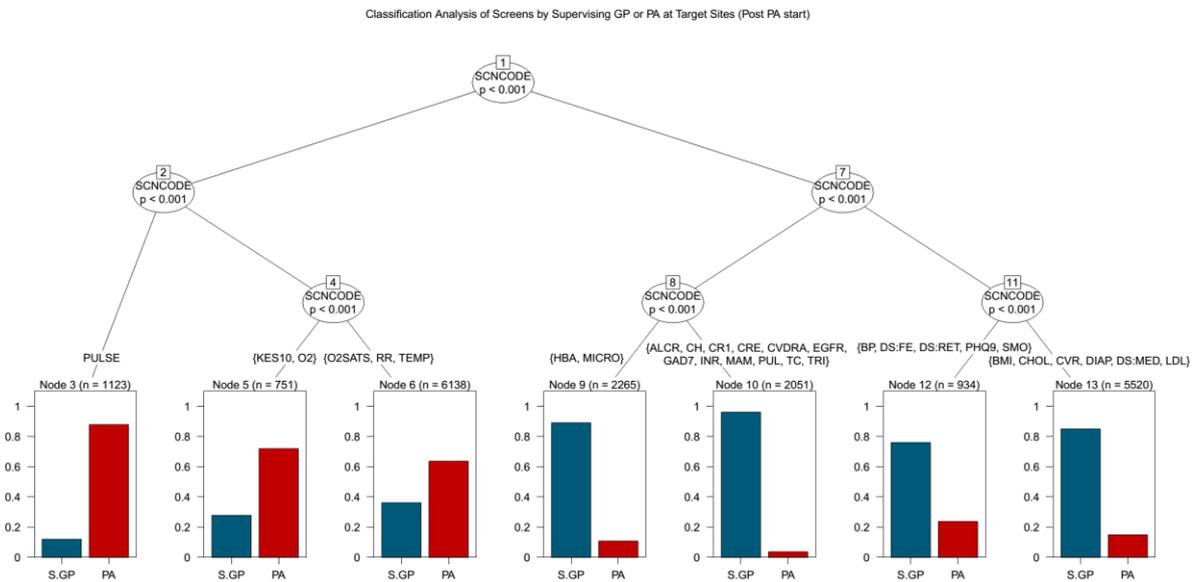
It should be noted that there could be differences in the way practitioners are recording screening data. For example, GPs may be taking vitals and not recording them in the patient management system, while PAs may have been more vigilant at entering vitals into the system. This is less likely for the measures associated with long term conditions and complex co-morbidities. For example, if a CVD screen is undertaken and records a high risk then all practitioners should enter it into the system. This may mean GPs and PAs are undertaking similar vitals measurements which are not reflected in the data, however it is unlikely that PAs are undertaking the screens relating to long term conditions and not recording those in the system.

This then poses the question of whether these differences reflect the nature of the PA role or the restrictions on PA prescribing in the demonstrations. The qualitative evidence and the insights from the international literature on the PA role suggest that this difference is more likely to reflect the restrictions in the demonstrations on the PA role, rather than the potential scope of a PA. For example, before coming to New Zealand some of the PAs in the current demonstrations were

⁴ As noted in the method section, this analysis was only undertaken at the Radius practice because of the substantial changes in the practice environment occurring at Tokoroa.

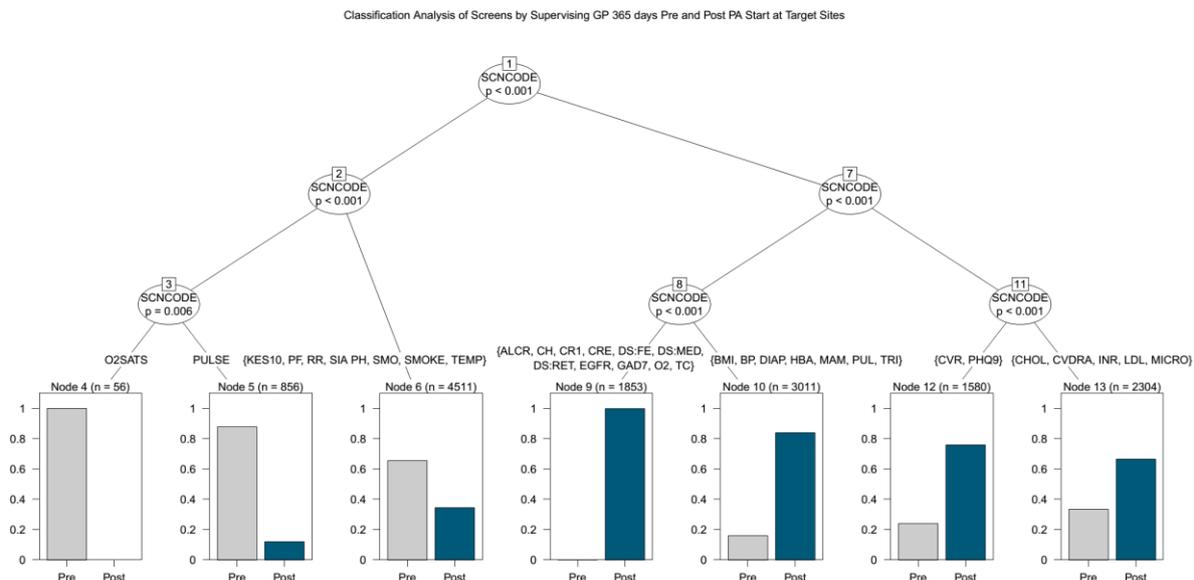
working with highly complex patients in the United States.

Figure 7: CART analysis of screening data comparing Supervising GPs and PAs



Using the same analysis, we compared the consults undertaken by the Supervising GP in the year before the PA joined the practice (Pre) and the year after the PA had joined the practice (Post). In the Post-PA period, Supervising GP's consults were statistically more likely to be associated with screens related to long-term conditions, and less likely to be associated with acute screens and vitals. While we acknowledge that this indicator has some limitations, the significant differences in the analysis pre and post the arrival of the PAs gives some support to the suggestion that supervising GPs are working on the more complex cases since the arrival of the PAs, at least in these Hamilton practices.

Figure 8: CART analysis of screening data comparing Supervising GPs pre and post PA integration



This analysis does not indicate that the PAs were unable to care for the more complex patients. In the qualitative interviews, stakeholders indicated that the PAs were assigned to the more acute patients to improve overall patient flow.

The focus of PAs generally away from patients with long-term conditions was partly seen by the PAs as a product of their inability to prescribe. Often, long-term conditions patients also had a history of prescriptions from their usual GPs, and for the PAs to offer alternative medications was seen by them to be unnecessary. It was simply seen as better for the usual GPs to continue to offer care, and to focus on low acuity health concerns of patients, such as coughs and colds, suturing, and complicated dressings. It was noted by some PAs however that their role can support long-term condition management, because of the time they are able to devote to patients, but that this simply hasn't been able to be utilised in the Phase II demonstrations to the degree that it is in the US.

8.4 COST-EFFECTIVENESS

People in senior management roles in the three host organisations all pointed to the cost-effectiveness of the role, in terms of the PAs ability to deliver similar quality medical care (within the scope of a PA) at a lower cost than GPs or other doctors. One primary care respondent observed:

“If you look at the value you get from PAs in terms of salary and the income that they generate, from a business point of view they’re an excellent alternative for GP owners to still service the patients, but for better value on their return.”

Behind this rationale is however an acknowledgement by interviewees that while a PA can offer effective clinical care for many patients at a lower cost, a PA still requires supervision and mentoring from doctors, and critically must be a competent PA. The recruitment and selection processes therefore need to be robust to ensure quality selection of PAs.

At Gore the interviews indicated that the PA is operating at a similar level as a medical officer for lower costs. This is supported by Gore’s financial data, which indicates that the PA is operating for approximately \$55,000 per year less than the costs of a medical officer, and substantially less than if they had to rely on locums to always cover a shift. These cost benefits were also associated with the value of having a more sustainable workforce:

“As well as savings to our bottom line, we also have a more sustainable workforce and a... safer roster.” (manager)

At one site, the PAs explicitly fitted within a business model that was targeted at using the lower costs of PAs to enable higher salaries to doctors, and in so doing to create more competitive conditions to attract doctors (in an environment where staff salary costs were seen to be increasing at a higher rate than funding to practices was increasing):

“Like all other primary healthcare businesses, our business revolves around seeing a set number of patients – four patient visits per year at a subsidised cost. And our idea behind hiring the physician assistants was to lower the overall cost per patient consultation or patient interaction, with the idea that we could then increase the wages of the doctor so that we would be more competitive.”

One comment from the staff survey also noted the value of integrating the PA within their existing health team in terms of profitability and safety:

“With a GP, NP, PA, Nurse, Admin and Social worker working together as a team, we estimate a population of 6000 patients can be profitably and safely managed in terms of primary care with minimal or no patient co-payment utilizing existing funding systems. We have used this pilot project to test various components of such a service successfully.”

One doctor interviewed questioned the extent of cost-effectiveness value, saying in his experience junior doctors would see as many patients in a day.⁵

8.5 CONTRIBUTION TO WORKFORCE

8.5.1 Recruitment in regional and remote areas

From the perspective of the future development of the PA role, the experience in regional and remote areas may be particularly pertinent. The contribution of PAs to rural practices was particularly noted in the Tokoroa site, where the practice was both shifting to a purpose-built integrated centre alongside Tokoroa hospital, with a new model of care, and which was beset in the past year by considerable difficulties in recruiting GPs. This is also in the context of an ageing workforce, where some local GPs had retired and replacements were difficult to find. The PAs were seen to be filling an important role in maintaining the ability of the practice to meet needs locally.

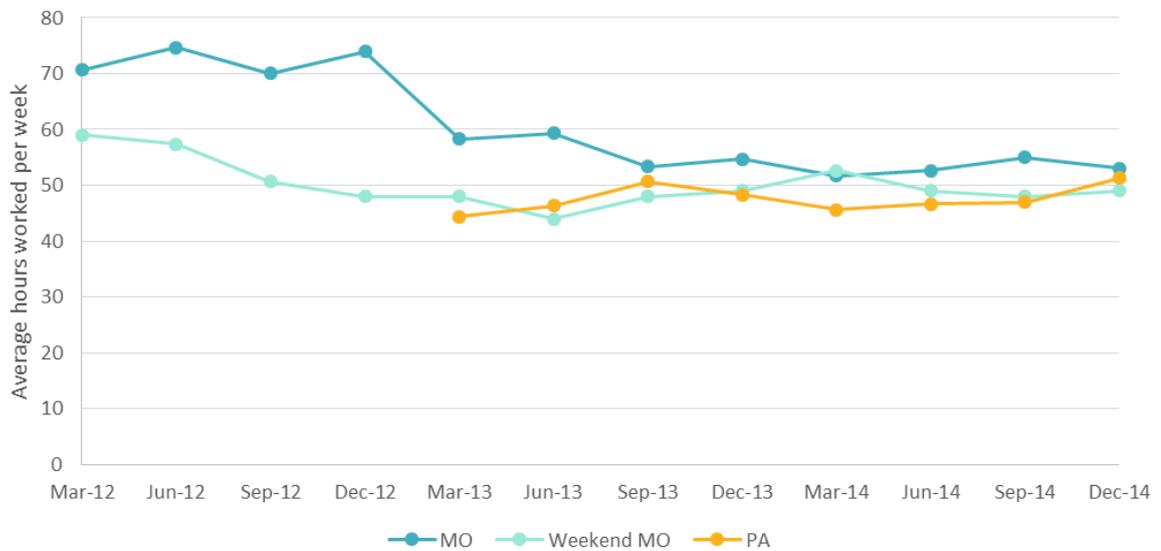
“It’s addressing the workforce issues which are very well demonstrated in Tokoroa in terms of the challenges we have to the recruitment to the area. In the last two years I’ve made around 24 job offers and got two GPs. So it’s really, really challenging.” (administrator)

8.5.2 Impacts on other doctors’ working hours

The PA working at Gore had a substantial effect on the working hours of the other clinicians at the site. Since the PA started working at Gore, the average hours worked per week for MOs reduced from 72.3 hours per week to 54.8 hours per week. The hours of the weekend MOs reduced from 53.8 hours per week to 48.5 hours per week.

⁵ A detailed cost-effectiveness analysis is outside the scope of this evaluation. We note, in relation to this comment, that the longer-term costs and benefits of junior doctors as they move through pay scales that are likely to be higher than those of PAs, should be considered.

Figure 9: Average hours worked per week (Gore ED)



This was corroborated by the qualitative data where the PA at Gore was described as reducing the burden on the existing medical officers, providing a safer roster and supported the sustainability and continuity of the workforce:

“When the PA started, we were able to reduce the hours the medical officers were working. They then reduced to an average of four days and one night (reducing from 70 hours to 47 hours) with the weekend MO’s having Saturday nights off (reducing from 63 to 48 hours). The roster is now more maintainable, allowing our medical officers regular time off and reduces patient risk from tired and overworked doctors. This has greatly reduced the pressure and stress on our medical officers and has ensured the long term sustainability of our workforce. It has also reduced our reliance on locums”

At Radius, initially the PA had no effect on the average hours worked by the supervising GPs. However, during the course of the demonstration all of the supervising GPs showed a decrease in the average amount of time they spent undertaking patient consultations each week. In qualitative interviews the practice manager at these sites indicated that supervising GPs were given blocks of time to focus on supervising the PAs. This approach was favoured by the GPs and also supported the signing of prescriptions. This may explain the reduction in the supervising GPs working hours.

8.6 BROAD SCOPE OF PRACTICE, ALLIED WITH SPECIALISATIONS AND INNOVATIONS

All PAs were seen to offer quality care to the patients in their clinical settings. The contribution of PAs across a broad scope of practice was seen to offer value across multiple settings.

“I think [the PA is] quite accurate and he does have a broad spectrum of knowledge. I think patients do appreciate when he can identify more sinister things rather than just tummy pain.” (doctor)

For some this is as a result of both their previous health careers (including nursing, x-ray technicians, sexual health and mental health) prior to training as PAs, and also because of the PA training itself offers in supporting a broad scope of practice.

The flexibility in their role was also valued, and notwithstanding the prescribing restrictions, they were thought to have a reasonable level of autonomy in their role.

8.7 CONTINUITY AND TIME WITH PATIENTS

A common theme across all sites was the continuity offered by PAs. Medical students and registrars were seen to only offer a short-term role at clinical settings, whereas the PAs will often be in place for longer.

“Registrars are typically there for that day and they’re moving on to do something bigger in their lives. So they’re not going to be an established component of an organisation for the most part.” (physician assistant)

While not seen in this demonstration, some of the PAs in primary care highlighted the potential for PAs to spend more time on the broader aspects of primary care, such as patient education and self-management. This may either be as a conscious decision in the model of care being followed, or simply as a result of the way that PAs are trained to work. One PA highlighted that this was a core part of her practice in this United States:

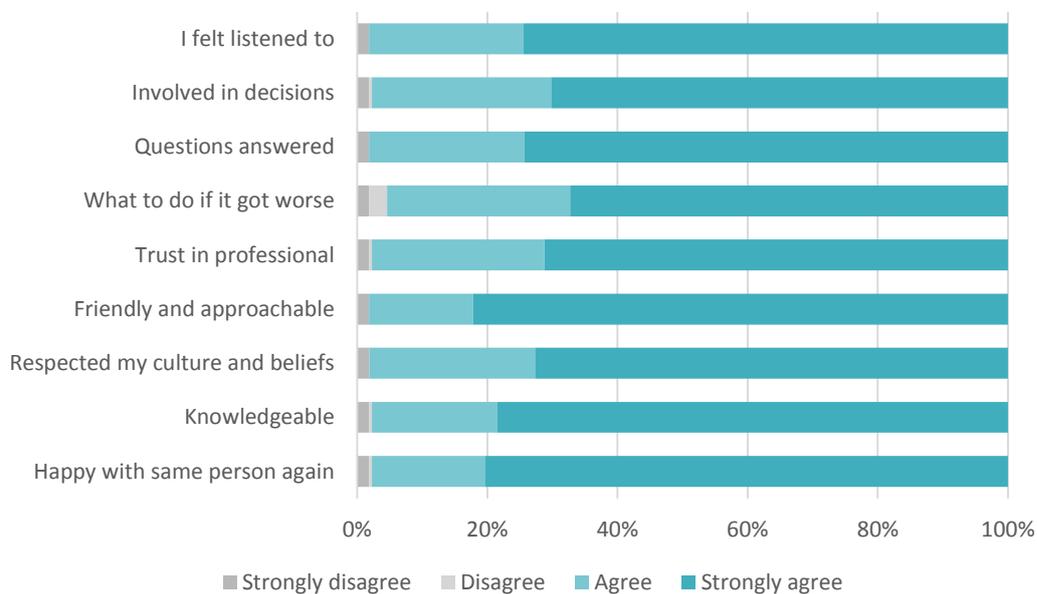
“In the States a lot of people will say well you know, my PA spends more time with me than the doctor does. They talk to me, they explain things to me more. And I think that’s one of the differences in how I practice versus how some of the others might practice. Because that was a very strong push when I came from, was patient education and explaining.” (physician assistant)

This does however suggest that cost effectiveness may be more nuanced than simply more patients at a lower cost; in some cases it may be fewer patients but still at a lower cost per patient (due to the lower salaries of PAs). It also indicates that expectations of cost-effectiveness and productivity need to be carefully planned and tested in practice to ensure fit with business models.

8.8 IMPACT ON PATIENTS

From a patient perspective, the survey indicates that the PAs are supporting practice activities and models through delivering a level of care and support that was highly rated by nearly all of the patients seen by the PAs across the different sites (Figure 10). There were no statistically significant differences between the patient responses in terms of satisfaction of the care that they received from the PAs and the existing health workforce, and with satisfaction being high in both cases.

Figure 10: Patient perceptions of the care received from the physician assistants across five of the demonstration sites



Feedback from staff indicated that in high-demand sites, this was partly a result of having someone to see them in a timely manner, or who may not have been otherwise available. For example:

“The patients are grateful that they can get seen, usually in a more timely fashion because of the PAs and a lot of them relate very well to our PAs.” (doctor)

However there was also a growing base of patients who would specifically request a PA who they had developed a relationship with. One site, for example, reported some initial reluctance by patients to see a PA, but PAs are similarly now being requested by patients at that site.

8.9 IMPACT ON NURSING AND JUNIOR DOCTORS

8.9.1 Nursing

Most nursing respondents indicated there was no negative impact on nursing, and that the two roles were seen as complementing each other; one noted that “if anything we appreciate the reduction in time from triage to treatment.” The PAs were seen to be beneficial to the clinical settings overall, and worked well with nursing staff, although there were some personality clashes noted.

In a few cases, some nurses indicated they weren’t now doing some tasks they did previously, such as suturing, and one indicated a concern that at one site the autonomy of nurses had been reduced.

There was a concern expressed by some interviewees that PAs have the potential to negatively impact on development of nursing. Key concerns raised were the growth of the PA role at the expense of the development of the nurse practitioner role, and undermining the holistic value of the nursing role, as indicated in the example below:

“My main consideration is on nursing as a profession ... I honestly think New Zealand is too small. And the work that they do can be done more holistically with a well-trained nurse workforce. I think there are actually people more than capable of doing it. It’s just changing funding models and gaining acceptance from medical colleagues around it. ... I’m really pro-nursing and I really struggle to see where nursing can’t fill the roles that they do.” (nurse practitioner)

8.9.2 Junior doctors

The interviews also explored the impact of the PA on the training opportunities for junior doctors. The PAs had not affected the employment of junior doctors (despite some concerns of staff recorded in the survey, noted earlier), nor had it affected support for junior doctor training at any of the demonstration sites.

When asked about the potential impact of PAs on these training opportunities many of those who were interviewed saw the PAs as being ideal for supporting the training of junior doctors in some areas of expertise, and in one instance, were already giving help in this regard:

“I think [name] would be really good at training junior doctors such as in wound care and suturing. People like [name], physician assistants, tend to stick to the rules and do things properly..... So that kind of role would actually be very good at teaching people how to do things properly.” (doctor)

“[PA] has often participated in the orientation and training of fourth and fifth year medical students who come in for exposure to general practice environments. This has helped in reducing the workload of the teaching GP and also provided a more team lead approach to their orientation”

8.10 OTHER AREAS OF IMPACT OR VALUE

Across many sites, the PAs were seen by many interviewees to display an alternative career pathway that may be attractive for some to consider as a next stage in their careers, such as nurses, pharmacists or paramedics.

In some instances, the quality of note-taking was seen as superior to that of many GPs, both by the PAs and by some other staff. This was seen to be a result of the USA system within which they were trained, and which demanded extremely detailed notes, but which were nevertheless valued.

The PAs had also brought new knowledge and skills to the practices. This was shared with other staff at the clinical settings and was described as a benefit of the demonstrations during the interviews. These skills included experience and expertise in the treatment of sexually transmitted diseases, radiography and suturing. These skills and expertise tended to reflect the scope of role of the PA in the United States. While the introduction of new skills and knowledge is not unique to the PA role, it was identified as a key benefit during the site visits.

8.11 PRACTICE MODELS

8.11.1 Alignment with business models

Overall, the PAs have generally integrated with the business models of their host organisations, and worked in with the existing clinical structures and models at host sites. For the most part, the practice models have generally not changed, with the PAs operating in their clinical settings in a similar capacity to doctors.

A key exception was at the Tokoroa practice where a temporary walk-in clinic was established that was run by a PA over the peak season of winter months. It is worth noting that the practice was able

to see an additional 900 patients over a 3-month period, in addition to what they would have normally seen. This was considered to be as a result of the clinic.

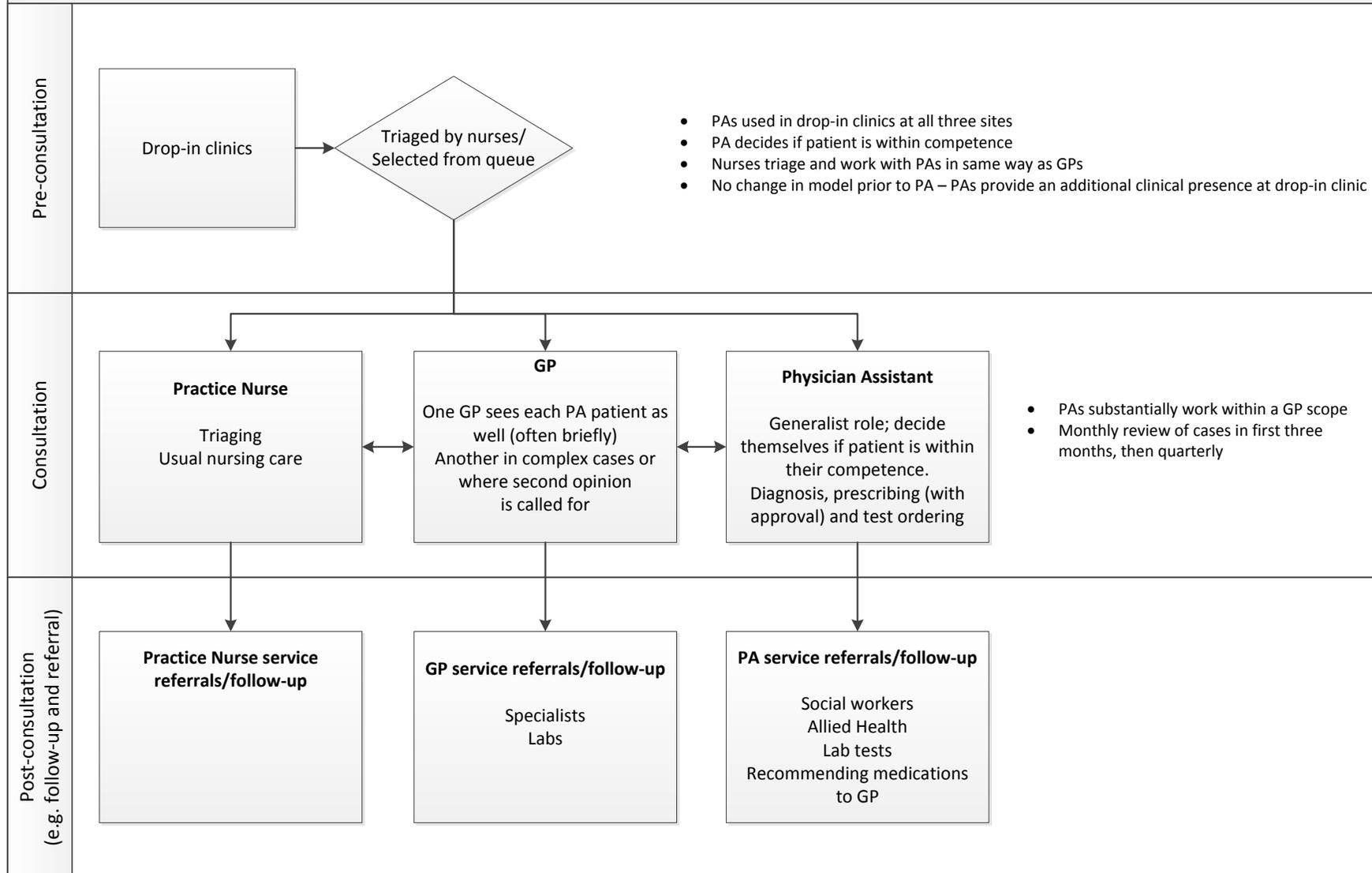
It is noted that the PAs were working in an environment that is more constrained than other jurisdictions, particularly the US, where prescribing is possible. It is possible that prescribing rights may permit more independent practice and with that, more innovation of practice models; against this is the role of the PA as an extension of a physician, which may serve to extend practice models rather than redefine them.

8.11.2 Patient pathways within practice models, and roles of PA

In the diagrams on the pages that follow, we set out the patient pathways at each site. These reinforce our observation that the PAs have tended to work in with models of care in each clinical setting, than extend the models. This is consistent with the PA role as one that works alongside the doctors, albeit in a more limited role.

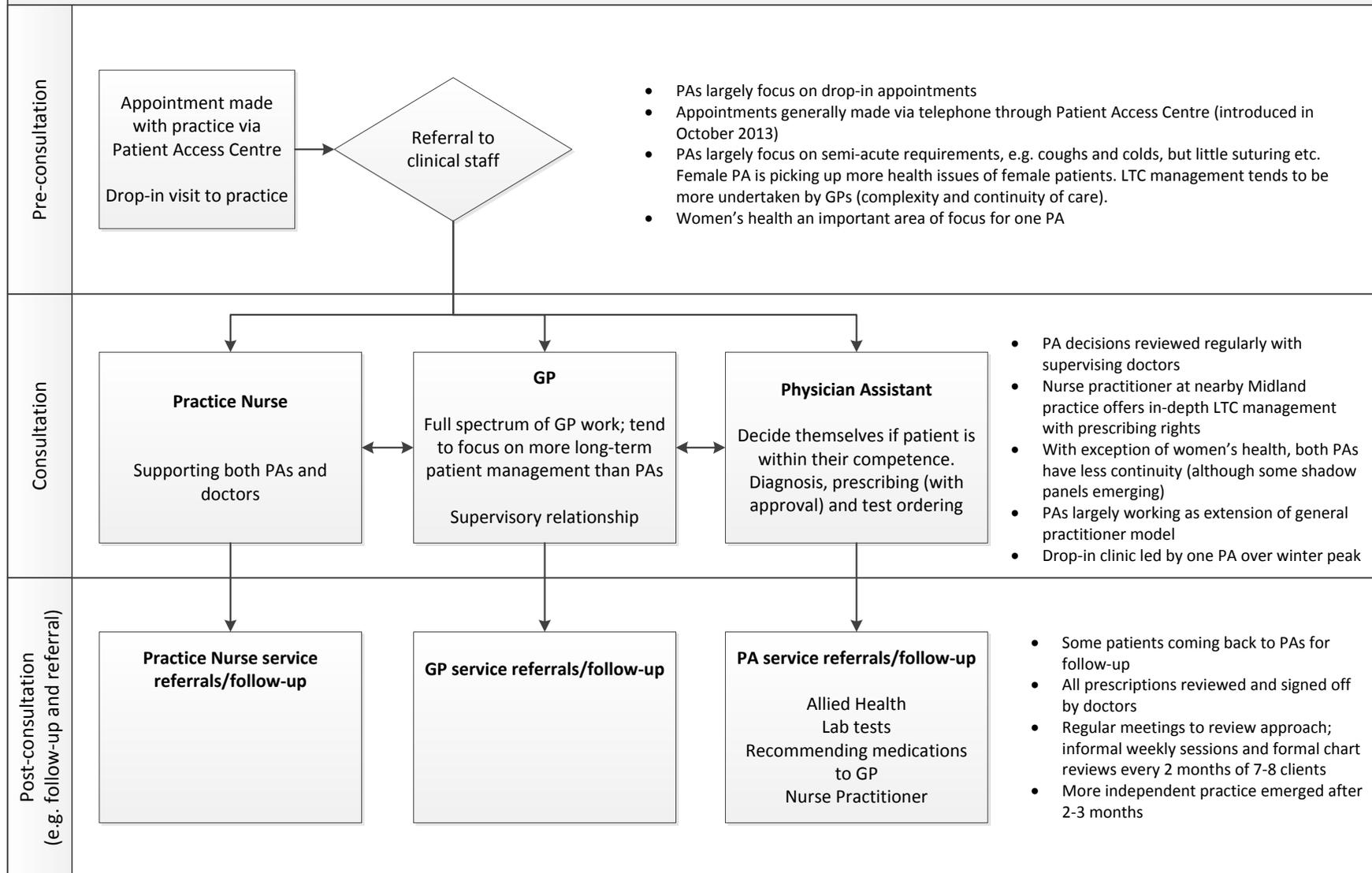
Process mapping: Radius (Hamilton) PA Trial Sites – Current implementation of PA role – Patient journey perspective

Site visits December 2013



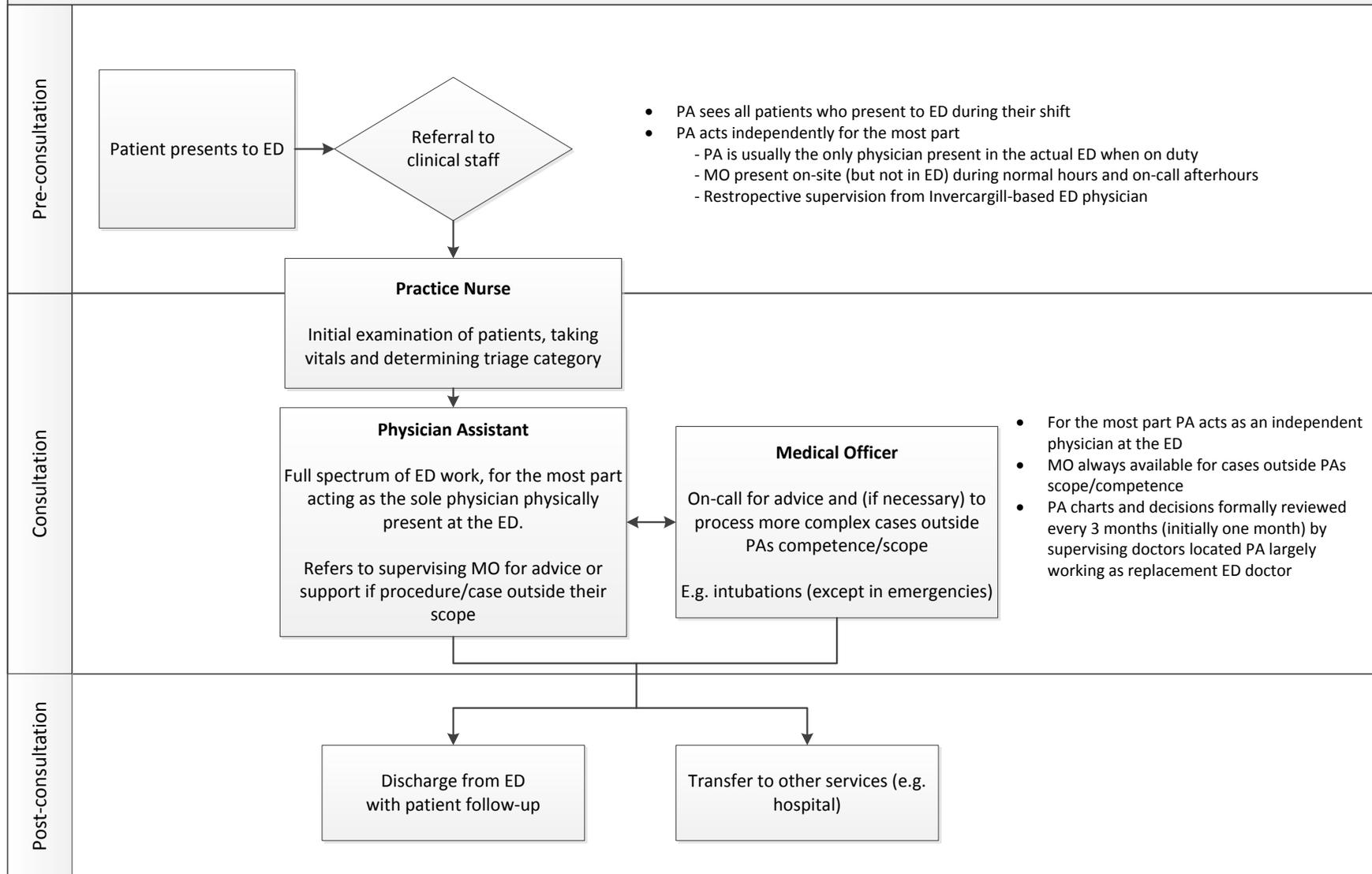
Process mapping: PA Tokoroa Trial Site – Current implementation of PA role – Patient journey perspective

Site visits December 2013 and September 2014



Process mapping: PA Gore Trial Site – Current implementation of PA role – Patient journey perspective

Site visits December 2013



9. WHAT FACTORS SUPPORTED OR CHALLENGED THE INTEGRATION OF THE PA ROLE INTO LOCAL PRACTICES AND WITH SPECIFIC PROFESSIONAL GROUPS?

This section uses the mixed methods data integration to identify the factors that supported or challenged the integration of the physician assistant role into local practices and specific professional groups.

9.1 PRESCRIBING

The lack of prescribing rights was the most commonly cited challenge to the integration of the PA role at the different settings, and particularly at the practice settings. This was frequently noted in the interviews. Allowing PAs to prescribe was also the most frequently cited recommendation for the future development of the role in New Zealand in the staff survey (Appendix 2).

Prescribing was more of a challenge for some PAs than others. For example, the supervising doctors had different approaches to reviewing the PAs prescribing and this was sometimes a cause of frustration and was certainly more time consuming:

“You know we’ve been competent in prescribing for so long and now to have to explain to someone else, why we’re doing what we’re doing and why we’re prescribing this. Some of the older doctors might have their set ways about “well no I like to use this”. And it may not always be evidence based. So it’s just.... it’s time-consuming.” (PA)

This experience however did shift over time as the other health professionals got to know and trust the PA:

“I just keep suggesting things and every once in a while they go “okay, alright you can do that”. I think as they’re getting to know me they’re starting to realise that I do have a lot of experience, and they’re maybe starting to trust me a little bit more. But definitely the first month was really challenging.” (PA)

The need for doctors to sign scripts also meant that consults were sometimes interrupted and this was not an ideal process for the doctors or the PAs:

“A lot of time is spent ... waiting outside doors to get prescriptions signed. Which can impact on the workload of the person doing the signing, depending what the staffing levels are like. For [the PAs] it must have been really frustrating to have to be hanging around the doctor’s door waiting for the doctor to sign something ... and the patients have to sit in the waiting

room for a few minutes and wait while that process happens. So that is a little bit of a stumbling block but, it's only an inconvenience of probably a few minutes while you catch a GP." (nurse practitioner)

The trust and knowledge of the PA role and capabilities has also reduced the burden of this process and the willingness of doctors to sign prescriptions. The interviews also suggested that integration would be supported if PAs were able to sign for ACC, WINZ forms, labs and other referrals.

9.2 SCOPE OF PRACTICE

Understanding the PAs scope of practice also posed challenges to integration of the PA role at the different settings. The notion of "not a nurse but not quite a doctor" was difficult for some to understand. Initial requests for PAs to work out of their scope of practice were also challenging. For example, when one of the PAs pushed back they felt that this impacted on their perceived value or contribution at the setting.

There was also a difference in professional culture, as PAs are trained to work in a collaborative relationship, and to seek advice and support from physicians. This is an integral part of their professional practice. However, some PAs felt that some health professionals perceived this to indicate a lack of experience or knowledge.

However, the transition time to understand the role and scope of the PAs did not appear to take long and the PAs were soon well integrated into their clinical settings and perceived to be a valued member of the team. This may also suggest that if PAs were to become a more common feature of the health system, these issues of scope understanding may become less noticeable over time.

The interviews also identified the relationships between the scope of the PAs, doctors and nurses. Overall, the scope of the different health professionals was considered to compliment and align well to one another. The medical training of the PAs aligned well to that of the doctors and they were often described as "speaking the same language". At the same time, the PAs were also described as have a good collaborative relationship with the nurses:

"They worked really well alongside us, ... if you got somebody with a lacerated finger they would... have a look at it first and then they'd come along and just suture it up if it needed suturing. But she would also, if she had time, she would finish that dressing off. So if we had somebody else come in... we knew that we could leave her to do that whilst we got on with the next person. And she would complete that patient....so they could be discharged." (nurse)

In terms of the specific scope of nurses and PAs, most of the nurses indicated that the roles were complimentary and that the PA role had no negative impact on nursing and that the PAs had provided benefits:

“They aren’t threat to us, nurses love them, they’ve come alongside the nurses really well.”
(nurse)

However, as indicated earlier, some nurses suggested that the introduction of PAs has the potential to impact on the development of nursing and the nurse practitioner role in particular.

9.3 SUPERVISION AND REVIEW

9.3.1 Experiences of supervision

All PAs have supervisory arrangements in place at the pilot sites, but these varied from site to site. In Gore, the PA makes the decision on when to seek the advice and support of the onsite or on call Medical Officer, usually when they are unsure or wanting to check things over. The interviewees suggested that advice is generally sought on cases of triage 1 and 2 (threats to life). Retrospective supervision is provided by a doctor from Southland Hospital in specialist emergency medicine. This mixed of supervision was designed to meet HWNZ’s requirements for immediate support and advice and retrospective supervision. The evaluation evidence provides no indication of any increased risks to patient safety.

The PA requires another doctor or nurse to sign prescriptions at Gore. During daytime hours, if the PA determines that a prescription medication is necessary, they presents the patients history of present illness to the Medical Officer (MO) in house who then makes an assessment as to the appropriateness of the request. If deemed that the patient requires a prescription, the MO then provides a prescription for the patient.

In the evening, or during a period when a MO is not in the facility there are two possible options available. If the patient requires only one or two doses of a medication after departure from the A/E, nursing staff under standing orders may provide the medication from the hospital stock. If it is determined that the patient will need a medication beyond the standing order for a short term supply, then the patient is requested to return the following day to retrieve a prescription after the PA has consulted with the MO in the manner described above. This has thought to have generally not been a major inconvenience as the pharmacies in Gore are open for business only during daytime hours; thus, the patient only has to make one additional stop a short distance away from the local pharmacy.

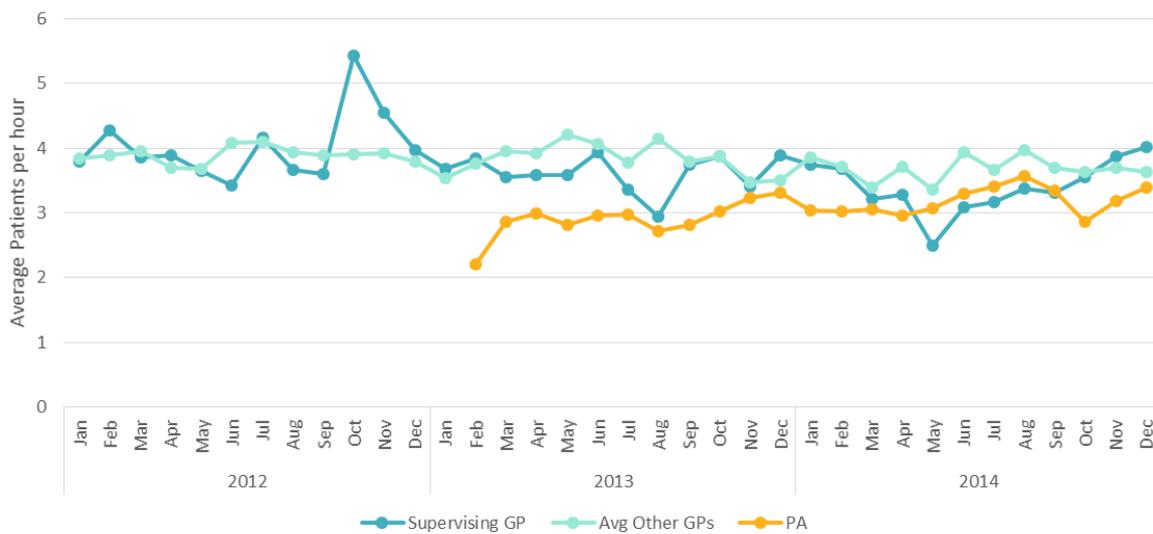
As far as medical charts, the PA completes and signs medical charts as per any other medical provider who has been given privileges to provide medical care in the facility. All charts go through the typical QA/QI process which involves peer review by MO's, nursing, and administrative staff. The PA has been granted authority to provide medical care in the hospital based on local hospital guidelines and the original HWNZ pilot outline.

At Radius Group in Hamilton, all three PAs require the sign-off for prescriptions and some forms for their patients; in practice this means either waiting until the supervisor is free to sign a form, or to interrupt the GP. PAs at these clinics seek doctors' support in situations where advice was thought necessary, usually when a patient is very unwell. All PAs at Radius currently have mutually constructive relationships with their supervising GPs, although two of these had difficult initial relationships. With both, their supervising GPs were unwilling to delegate and ultimately both were reassigned to new supervisors where more collaborative relationships have developed.

In Tokoroa (Midland Health Network), the supervisory arrangement is similar to the Radius sites, with sign-off required from either of the supervising GPs; the more usual approach is for forms to be slipped under the door of the GP and returned once viewed. One GP tended to be more 'hands-on' than the other, but constructive relationships were established with both GPs. One PA mentioned that if more feedback was required the more 'hands-on' GP would tend to be consulted. In addition, the PAs have a review meeting with supervisors every three weeks.

On average, the quantitative analysis suggests that the PAs were requesting prescriptions to be signed for 11 to 24 patients per day (depending on the site). The qualitative analysis suggests that the supervising GPs and the PAs found this process frustrating. The potential impact on patients' in terms of the need to wait for prescriptions or having their GP consultation interrupted is also far from ideal. Overtime, each site indicated that they developed processes to reduce this burden. The quantitative analysis suggests that despite this frustration there appears to be no overall effect on GP efficiency in terms of patients per hour, as indicated in the example graph below.

Figure 11: Example of trends in PA and GP patients per hour



The PAs were required to keep detailed clinical records, which can take up a significant amount of time. Some PAs attributed this to the demands of the supervisory systems. Others however said this was fairly standard practice for them in the US, particularly given the litigious environment there.

Retrospective supervision is undertaken by the supervisors of each of the PAs. The supervisors review a sample of randomly selected cases (approximately 10% of all cases seen; this approach reflects typical standards when auditing medicine). When asked about these reviews none of the supervisors interviewed identified any challenges of safety issues with the care provided by the PAs.

The interviews with supervising physicians also revealed general satisfaction with the PAs contribution to their site, and the quality and safety of the work performed, which was seen to be appropriate to their role.

9.3.2 Reflections on the supervisory relationship

The interviews at the site visits identified the supervisory relationship as both a key challenge and a success factor for the integration of the PA role. Interviewees at a range of sites noted that supervising PAs is different to teaching junior doctors, with the need to be able to give PAs permission to apply their practice.

In this context, a doctor who is experienced at teaching a junior doctor may not always be suitable for a PA, as the evidence from these discussions is that the relationship needs to evolve into one of delegated autonomy where some independence and collaborative working becomes the norm.

When the PAs initially come to New Zealand, it can be hard for them to adjust to the hesitancy of

both patients and healthcare professionals to understand and accept their role. If the role were to be developed further in the New Zealand health system this issue is likely to reduce.

In the situations where the initial supervisory relationship was not successful, there was clearly a wish by the supervising doctor to retain strong oversight of all decisions made; this was detrimental to the relationship with PAs and seen by practice management as an inefficient use of skills and resources.

With the unregulated role of PAs, and the responsibility for patient care residing with the supervising doctor, this degree of caution is understandable.

- In this environment, the PAs need to be able to prove their competence, once trust is developed, supervising doctors can transition from concurrent supervision to more retrospective supervision.
- This can be a source of frustration for PAs, and indicates that the PA role will not be a universal fit for potential supervisors, even those that have a passion for training junior doctors.

Where relationships have been successfully established, there is a tendency for growing levels of delegation to occur; one PA spoke of this developing organically rather than directly negotiated. It is also notable that in some areas of established expertise, such as suturing and HIV/AIDS treatment, supervising doctors have acknowledged the PAs expertise and will turn to them for advice or undertaking procedures.

Consistency of supervision was also identified as a key factor that supported the integration of the PA role:

“What worked was having one constant senior GP who covers them, there was a lot less confusion, if they moved around they found it more difficult.” (charge nurse)

This consistency also supported the doctor and PA in developing trust and an understanding of one another. The governance documentation also supports the development of the PAs' scope of practice, and it is at these early stages that expectations, experience and capability can inform the PAs scope.

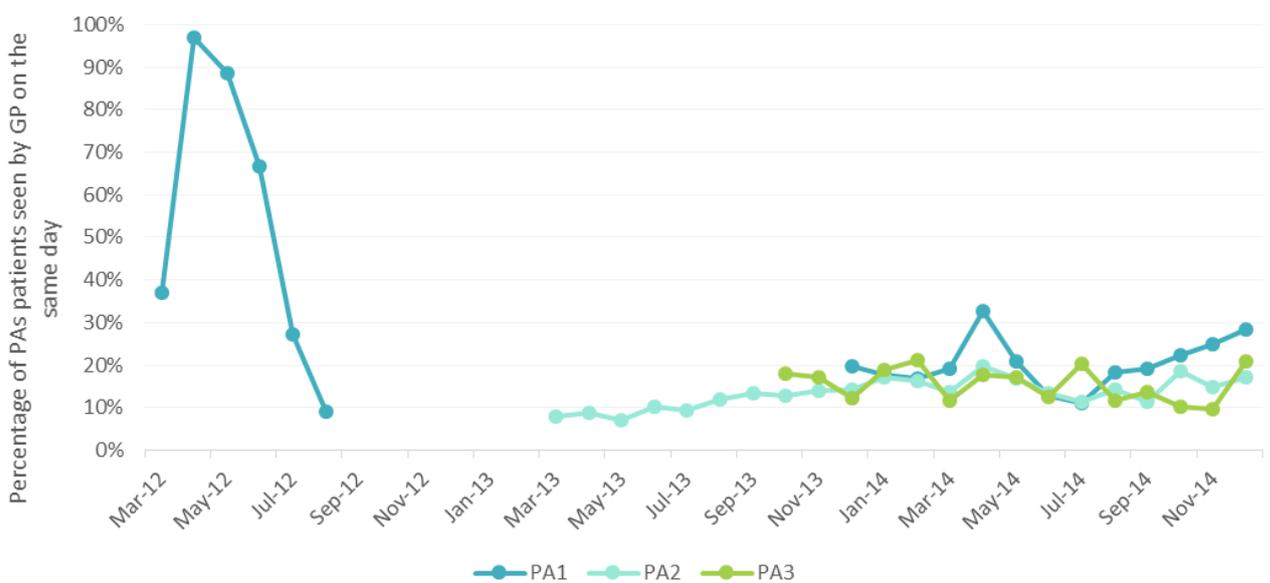
9.3.3 PA oversight by the supervising GPs

As an indicator of the oversight provided by the supervising GP, we identified patients who had a consultation recorded from both the supervising GP and PA on the same day. There was a marked difference in the pattern of oversight between the PAs in the Radius practices.

Initially when one of the PAs first started working, the majority of their patients were also seen by the GP, with an average of 61% of PAs patients between March and August 2012 (with an average of 97% in April 2012). Over time this proportion dropped to a more consistent average of 20% in the months between December 2013 and December 2014. This was reflected in the qualitative evidence where both the PA and the supervising GP noted the shift in the level of supervision over time. This suggests an organic growth in delegated autonomy between the GP and the PA.

This average proportion of the PA's patients seen by the GP on the same day was still higher than the average for the other two Radius practices, which were both relatively stable at around 13% and 15%. This may reflect the level of experience of the PA compared to the others and/or the level of oversight the GP preferred to provide.

Figure 12: Average proportion of patients seen by GP and PA on the same day



9.4 ORIENTATION TO THE NEW ZEALAND HEALTH SYSTEM

9.4.1 Establishment in clinical settings

When the PAs initially come to New Zealand, their role is new to the existing workforce and patient populations. The PA is also exposed to a very different health system. These factors sometimes challenged the integration of the PA into the different clinical settings. Initially, both patients and healthcare professionals can be hesitant to understand and accept their role:

“Initially it was a little difficult, patients were dubious. If this isn't a real doctor why do I want them seeing me? Now we have tons of patients to come in and ask for the physician assistant.”(charge nurse)

Overall, the patients were very happy to see the PAs and any issues appeared to be related to specific personalities rather than the care of the PA:

“There may be a couple of people that don't want to use them again, but you get that with anything. We've got alerts on our screens for patients that don't want to see particular GP's as well. So on the whole I'd say that's not an issue. ... I think they basically know that they're not doctors, that they're physician assistants and we try to explain that to them. But they're all very..... very happy with the system. As long as they're seen and treated I think they're quite happy.” (nurse)

The patients' satisfaction with the care received from the PAs is also reflected in the patient survey (Appendix 1). The survey also indicated that nearly all of the patients that were seen by the PAs would be happy to be seen by them again in the future.

Some of the PAs experienced some difficulties in understanding the different support and referral systems in New Zealand. One PA for example, was overly cautious in their referrals to a specific service. This highlighted the importance of ensuring a full orientation and ongoing support for the PAs.

The intention to host a PA at a site that was yet to be established (Taneatua) was also a key challenge to the integration of one of the PAs. This resulted in the PA being moved several times throughout the demonstrations making it difficult for them to settle and establish their role. The late start for the PA at this site also made it difficult to collect useful practice level, patient and staff survey data. This highlights the importance of introducing new roles into practices and settings that are already well-established.

9.4.2 Physician assistant support, training and experience

The initial orientation, support from the existing health workforce and the ongoing support and training from HWNZ was a key factor in supporting the integration of the PAs into the New Zealand health system.

The background and experience of the PAs were also cited as key factors that supported their orientation to the New Zealand health system. The PA training ensures that PAs are exposed to a range of clinical settings. This coupled with the experience of the PAs with diverse clinical settings supported them in adapting to the New Zealand health care system. The PAs often described their

previous experiences with adapting to different contexts and needing to quickly learn new IT systems and processes.

10. WHAT ARE THE IMPLICATIONS AND/OR RISKS FOR THE FIT AND APPLICABILITY OF THE PHYSICIAN ASSISTANT ROLE WITHIN NEW ZEALAND, ARISING FROM THE EVALUATION FINDINGS?

As noted in earlier chapters, the PAs were seen to make a valued contribution in demonstration settings. Reflecting back over the two years, a range of considerations arose for the overall fit of the PAs in the clinical settings.

10.1 QUALITY OF SUPERVISORY RELATIONSHIP

The collaborative relationship between GPs and PAs is a potential challenge to the fit and applicability of the PA role within NZ. Some supervisors will need resources and guidance to support them in taking on the role of a PA supervisor, and PAs by the same token also need to understand that the development of this relationship will take time as the role is so new.

The quality of the supervisory relationship emerged as a key factor in the settlement and contribution of PAs at each setting. Notably, at least three PAs had difficult supervisory relationships in their initial placements, and all had to be shifted to new supervisors. In the situations where the initial supervisory relationship was not successful, there was clearly a wish by the supervising doctor to retain strong oversight of all decisions made; this was detrimental to the relationship with PAs and seen by practice management as an inefficient use of skills and resources.

A perspective that was offered by one interviewee on this was that not all doctors will embrace supervision of any kind, and within those that do, not all will embrace the flexible supervisory relationship that the PA role requires. It was also noted though that while some will never be suited to supervision, a good number can be supported into such roles.

A central learning from the sites about the supervisory relationship was the need for clear boundaries and flexibility within those boundaries. Common to established relationships was a degree of close supervision initially, followed by a degree of independence with decision-making as trust developed. Nevertheless, with some PAs, a relatively tight level of supervision continued, with

one doctor insisting on seeing each (even if only to greet). However, even in this case, the PA reported that independence of her practice had grown significantly over time.

Other qualities suggested by one doctor, for both the doctor and the PA, included:

“I think there needs to be an open mind... that accepts the role and wants to move forward. Then [the doctor] needs to have patience and enthusiasm to guide further PAs. Basically wanting to actually make it work. Otherwise, otherwise it wouldn't... [I need a PA to be] passionate and keen on medicine, [and] demonstrates knowledge... and can accept criticism and accept suggestions.”

The PA supervisory role was generally seen as different to that required for a junior doctor, particularly where the PAs have an established track record of experience in their field. Junior doctors were often thought to require more sustained supervision than PAs.

10.2 MANAGING AND UNDERSTANDING SCOPE

The environment into which PAs are placed is also important. The clinical setting needs to be able to recognise that PAs have boundaries to their scope, and therefore the types of the cases that they are able to work with. Allowing PAs to manage their scope of practice is important for integrating the role. The fit of PAs within settings is also supported by openness of PAs to ask questions (such as about different terminology between New Zealand and the US).

In practice, PAs clarity of the boundaries of their scope gave confidence to staff about the quality and contribution of PAs. A number of interviewees observing PAs (both nurses and doctors), spoke positively of PAs making decisions about what was within or outside their competence:

“We actually talked about one patient that was collapsing and he said go and get [doctor] and I did and when I went back I asked him why he stepped back. He said I know my grounds and I know when to stop and when to call in another doctor. So to me that gave me a sense of security as a nurse manager that I had a good team to work with.” (nurse)

“I've been most impressed. They know when they're out of their depth and they're quite happy to say it.” (doctor)

Where relationships were successfully established, there was a tendency for growing levels of delegation to occur; one PA spoke of this developing organically rather than directly negotiated. It is also notable that in some areas of established expertise, such as suturing and HIV/AIDS treatment,

supervising doctors acknowledged the PAs' expertise and turned to them for advice or for undertaking procedures.

10.3 PHYSICIAN ASSISTANT SELECTION AND QUALITY OF DELIVERY

The PAs were specifically selected for their skills and experience, and with expectations that they could be leading the development of the PA role in New Zealand. This will continue to be an important factor in the ongoing fit of PAs to the New Zealand environment. Their clinical and interpersonal skills, and commitment to the profession itself, were all important factors in their selection. The qualitative feedback indicates no concerns have risen regarding patient safety; from a quality and safety point of view, the PAs selected are reported to be working within their competence.

It was noted by one interviewee that the medical model that PAs come from integrated well with the rest of the practice team:

"They fit in the medical model, you know. The PAs who come in they ask the same sort of questions. They think about it in the same way. You know, I've been most impressed with their medical and clinical acumen."

10.4 MATCH BETWEEN PHYSICIAN ASSISTANT SKILLS AND CLINICAL SETTINGS

There needs to be a good match between the clinical settings, models of care and the skills and experiences of the PA, to maximise the potential value of the PA. This was illustrated by the influence of the practice setting on the scope and practice of some the PAs. For example, a placement in primary care for one PA meant that established emergency department skills were less to the fore:

"I feel like there's a lot of things that I didn't get to use my skills for. You don't do suturing very often, or, a shoulder reduction, from pretty significant injuries. We don't see as much because they end up going down to the ED. We don't have any splinting materials here, so I really came from a background of seeing a lot of broken bones and, you know clavicles and wrists." (PA)

Compared to PAs in overseas jurisdictions, particularly the US, the scope of practice for the demonstration PAs was more limited. This was most evident in prescribing, where all interviewees across all primary care sites recognised the challenges of PAs prescribing restrictions.

The cutting edge of this was the constant interruption that PAs felt was unavoidable as they sought sign-off for prescriptions from their GPs. This not only interrupts the GP's consult, but it can also reinforce perceptions of lack of competence:

"I think the thing for me is knocking on the doctor's door and knowing that they have to stand up and walk over, and interrupt their consult, and then walk back and sit down. And that must be incredibly annoying, to have to do that 30 times a day... It's gotten to the point where they open the door and I just say I'm sorry. And it's for paracetamol right, which is over the counter... And so that's been a challenge. I think that that also has led to a perception amongst at least one provider here that PAs don't know what they're doing."

However, there was evident at these sites, particularly among the supervisors, a willingness to work within these restrictions and make the most of the skills that the PAs were able to offer.

10.5 VARIATIONS IN SITE PREPARATION AND UNDERSTANDING OF THE ROLE

The evaluation identifies the importance of a robust orientation process and preparation for the PAs. The variations in preparation by some sites limited the initial impact of role, and this is an important consideration for future recruitment of PAs to New Zealand. This included supervisor selection (discussed above) and the tasks assigned.

At most sites, the initial fit of PAs with the practice took some time, as other staff became aware of the role. Some staff suggested that better education around the site of the PA role, as well as to patients, would have been helpful. This was particularly so at one site, where the tasks assigned to one PA began with nursing and data entry, then shifted to any case of any complexity, before over time a clearer pattern of referral within the scope of the PA was established.

"The biggest grizzle would be that they get inappropriate patients booked with them who have asked for a medical certificate or something like that, or they're complicated patients who have been with one particular doctor for a long time and they're not really in a situation to contribute." (doctor)

It is also worth noting that additional supports were available to support integration of the PA role which may not be as available with future recruitment. These included settlement costs support from Health Workforce NZ, establishment of learning and peer support networking across all PAs, and PA leadership from Ruth Ballweg. These were taken up to different degrees at different sites, particularly the level of settlement support.

10.6 CULTURAL FIT

The cultural fit of PAs was raised as an issue in some sites which has implications for future recruitment and orientation. This was not so much about the cultural competence, but about the hierarchical structure that PAs work within the US, compared to a more egalitarian interpersonal culture in the New Zealand environment. This difference is important to understand in establishing interpersonal relations with colleagues. One PA spoke of a tall poppy culture in New Zealand that doesn't take well to a brash nature, and another spoke of the value he gained from advice on New Zealand work cultures:

“When you get an immigration visa you get this email from New Zealand Immigration kind of explaining how to behave in New Zealand... It talked about how to interact with your co-workers in a way that was really agreeable and more Kiwi. And that was really good for me, because ... in medicine we tend to be barky. Like I need that, I need this. So I knew coming in here no, no, just say can you please get to this when you have a moment. And that I think's been helpful with my interactions with my co-workers quite a bit.”(PA)

This was echoed by some nursing interviewees who spoke of the style of one PA that was seen as difficult at times. These did not however impinge on competence or ability to do the work, but more on the working relationships.

11. WHAT ISSUES ARISE FROM THE DEMONSTRATIONS FOR THE POTENTIAL ESTABLISHMENT, TRANSFERABILITY AND SUSTAINABILITY OF THE PHYSICIAN ASSISTANT ROLE IN NEW ZEALAND?

In this final section, we explore some of the key issues that have emerged from feedback in the PA trials, which warrant consideration. We do not offer recommendations, but set out considerations for the sector.

There are two key areas of discussion that emerged in the cross-site analysis, these being considerations for further recruitment of PAs from overseas; and considerations for developing the PA role within New Zealand.

11.1 PHYSICIAN ASSISTANT RECRUITMENT FROM OVERSEAS

11.1.1 Key qualities in next wave of recruits

Issues that arose in the recruitment and settlement were well explored in earlier sections, particularly section 6. Some potential issues for consideration in recruiting overseas-based PAs include the following:

- Flexibility to adapt to New Zealand culture, including the work cultures
- Match to lifestyle and areas of interest
- Experience with cultural diversity prior to coming to New Zealand, which was seen by many as supportive for PA settlement and in dealing particularly with Māori and Pacific populations; and alongside this, support in understanding the particular cultural context of New Zealand

We also acknowledge that while experience with cultural diversity and cultural competency training through the PA programme in the States is a useful quality in new recruits, this does not equate to cultural competence. Recruitment from overseas would still require an induction and settlement process to understand the unique challenges of the New Zealand health context, and particularly Māori health and their unique position as tangata whenua.

11.1.2 Clarity in recruitment and role orientation

Areas where greater clarity of the work environment would be helpful for perspective PA include:

- Making clear the current limitations on prescribing rights.
- Consideration of how professional development will be maintained, particularly if there are new graduates who will learn in a New Zealand environment that is different to the overseas environment that they may return to.
- Clarity about the areas to be based in.
- Information and briefings about pharmaceuticals, health systems and practice systems.
- Site orientation.
- Peer support.

11.2 CONSIDERATIONS FOR DEVELOPING PHYSICIAN ASSISTANT ROLE IN NEW ZEALAND

If the PA is to develop into a 'homegrown' role, feedback from the sites suggests that the following issues will need to be considered:

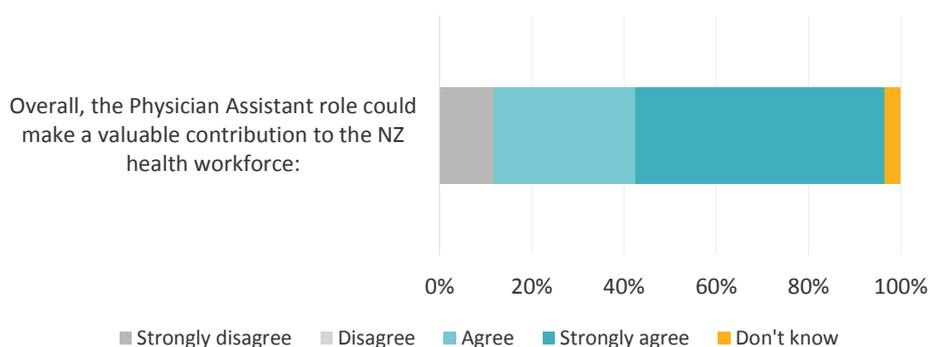
- Workforce need and key areas of development
- Regulation and medico-legal issues
- Professional development
- Training base
- Advocacy and networking

These are discussed briefly in the sections that follow. We acknowledge that this is an area of much contention, in particular the implications of the PA role for the development of existing professions.

11.2.1 Overall contribution of physician assistants to the New Zealand health workforce

Responses from staff at the clinical settings indicate broad agreement about the value of the PA role to the health workforce, based on their experiences. In the staff survey, 85% of staff surveyed agreed or strongly agreed with the statement that "overall, the physician assistant role could make a valuable contribution to the NZ health workforce." Of the remainder, 12% strongly disagreed, and 3% were unsure (Figure 13).

Figure 13: Staff perceptions of the Physician Assistant role in New Zealand (n=59)



11.2.2 Workforce need and sites of development

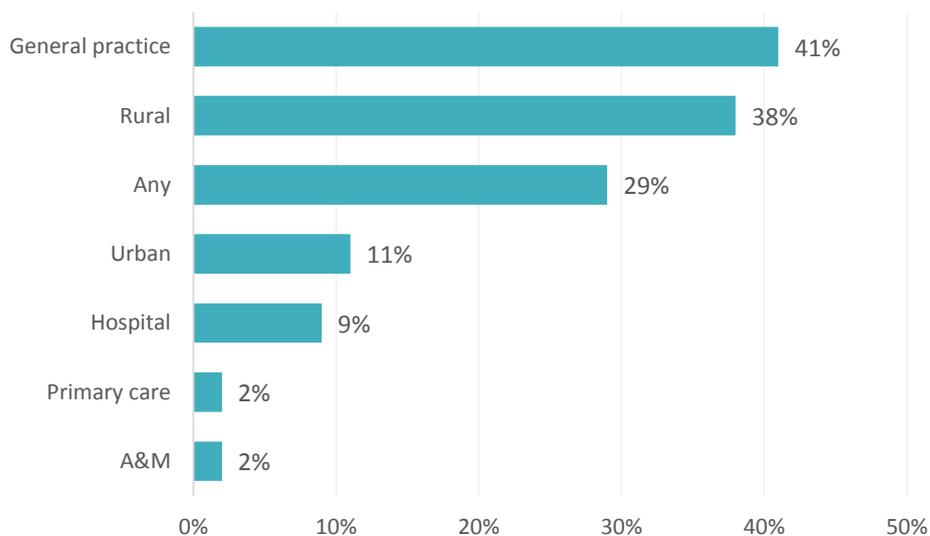
Notably, when the PA trials were initiated, there were seen to be significant shortages in many aspects of the health workforce. However, over the five years to 2014, the medical workforce in New

Zealand has grown by 15%⁶ and the shortages, are more specific and to some extent localised than they were before. Key issues identified by HWNZ in the medical workforce include:

- Shortages in general practice, general surgery, internal medicine, pathology, psychiatry and rural hospital medicine
- An ageing workforce, with almost 40 percent of doctors are currently aged 50 or over, up from 34 percent in 2009.

The demonstration sites included primary care and rural hospital settings. In these areas of workforce need, PAs were seen by staff across all sites as an important addition to the local workforce. In the staff survey, general practice was considered the most valuable setting by the most staff (41%) and rural (38%) was considered more valuable than urban settings (11%). Some 29% suggested any setting (Figure 14).

Figure 14: In which NZ health setting do you think the physician assistant role would be most valuable? (n=56)



A cross-tab of these findings, suggests that staff responses to this question related the area that they were working in with the PA. For example, staff from Tokoroa were more likely to suggest that the PA would add value to a rural health setting.

⁶ Health Workforce New Zealand. 2014. *The Health of the Health Workforce*. Wellington: Ministry of Health

Table 8: Most valuable setting by clinical setting

Practice	Most valuable setting				
	General practice	Hospital	Urban	Rural	Any
Gore	0%	0%	0%	33%	67%
Tokoroa	20%	7%	7%	67%	13%
K'aute	44%	11%	11%	11%	44%
Rototuna	44%	11%	17%	33%	28%
Davies Corner	73%	9%	9%	27%	27%
Aggregate	41%	9%	11%	38%	29%

In qualitative interviews, similar theme emerged in terms of areas where the PA role could most add value; responses included:

- Regional and remote areas with workforce shortages
- Higher deprivation areas with high health need and heavy demand
- Drop-in settings where demand can be high at times
- Other professional and geographic areas where there are workforce shortages, such as surgery and internal medicine
- Mobile roles across a practice or clinical network, working in areas of different seasonal demand (e.g. a beach town in summer and a rural town with high deprivation in winter).

As indicated above, the PAs were working in sites that had historical workforce shortages, and in areas of high need or demand. In these settings, the arrival of medical staff who could support patient flows was welcome:

“I guess that comes out of a situation where you're very grateful what they've done, very grateful and the two that we've got have fitted in so easily. They're in their stride just about straight away.” (doctor)

It is worth returning to the discussion from section 7, that from a business perspective, PAs appear to offer a lower cost workforce that supports the businesses' sustainability. This is not equivalent to workforce need, but in itself it does offer a powerful driver for some settings to develop the role further. It also highlights a potential tension between developing and sustaining the medical

workforce, as well as other professions within the health workforce such as nursing, and a desire to grow a PA workforce. These may not be incompatible, but are an important area for policy-makers to consider.

11.2.3 Regulation and medico-legal issues

Currently, there is no specific regulation regarding the PA role in New Zealand. At present, any employer can take on PAs in the same manner as the demonstration sites, on the proviso that no regulated activities are undertaken. In the absence of a statutory regulatory process, a Governance Document developed by Health Workforce New Zealand is intended to “ensure that a non-statutory approach provides the necessary standards, processes and mechanisms to protect the public and instil public confidence.”

Interviewees suggested that should the role become more established in New Zealand, some form of regulation will be required, which would also give greater clarity to the PA role. Suggestions from interviewees generally focused on regulation via the Medical Council of New Zealand under the HPCA Act (consistent with the medical model that PAs follow). This, it is expected, would enable prescribing and formal participation in ACC processes. Notably, in the staff survey, the ability for PAs to prescribe emerged as an important theme of potential improvements to the contribution of PAs in clinical settings (suggested by 50% of respondents in open-ended questions).

A key early concern of many doctors was the medico-legal responsibility. Health Workforce New Zealand documentation advises that the medico-legal responsibility of patient care and performance of PAs lies with their supervising doctors; a “decision to delegate” means that doctors are responsible for ensuring that a person working under delegation has the appropriate skills, expertise and competence to perform any duties delegated to them. A learning from these trials is that medico-legal issues should be affirmed and communicated by the Medical Council and other authorities before future PAs are brought into sites.

11.2.4 Professional development

Access to professional development opportunities is critical for any profession, particularly for maintenance of registration. Currently, formal professional development opportunities exist via training days funded via Health Workforce New Zealand.

Other informal training opportunities available included a weekly study session at one site, in which PAs and GP trainees participated. One GP interviewed suggested that alongside GPs, there needs to be available of regional learnings sessions with other PAs to develop their practice.

Conference opportunities such as the Rural GPs Network conference, or other medical professional conferences in fields related to their area of work, were suggested as important professional development opportunities.

11.2.5 Training base

A range of options were offered by interviewees for the development of New Zealand PA role. One short-term option is training at overseas institutions. In the longer term, a New Zealand-based PA school may warrant consideration should the role become established. The costs of establishing and maintaining a training programme should be explored within this (an issue that has been noted by nursing organisations).

11.2.6 Advocacy and networking

The newly formed New Zealand Physician Associate Society has the potential to provide an advocacy role for the development of the PA role, and to inform future planning in this regard. There is also an important role for the society to support networking among PAs. The networking role may also be considered by Health Workforce New Zealand within its support for professional development.

12. STRENGTHS AND LIMITATIONS

When reviewing the findings from this evaluation it is important to consider the strengths and limitations of the design. The evaluation presented here presents a comprehensive evaluation design that draws on multiple data sources to identify the perspectives and experiences of the PAs, doctors, nurses, managers, business owners, administrators and patients. Unlike previous evaluations, the strength of the evaluation design is also further bolstered through the integration of this evidence with the findings from the existing administrative and service data.

When assessing the quality of mixed methods designs it is also important to review the individual data collection methods and procedures. The patient survey had a good sample size and was

designed to address the aims and objectives of the evaluation. The survey provided a good insight into the acceptability of the PA role to patients.

The staff survey was designed to understand the acceptability and contribution of the PA role at the different settings. The staff survey had a good response from most sites, although the insights from Gore are limited by the very small number of people completing the survey from this site.

The site visits were designed to provide an insight into the implementation and contribution of the PA role at two time points; one near the beginning of the trial and one towards the end of the demonstrations. This was designed to support the recall accuracy of the interviewees to provide an insight into the role at the initial stages of integration and once the role had been in place for a more substantial period of time. This has supported to evaluation in providing an insight into the implications and considerations of bringing PAs into the health workforce in New Zealand, as well as the potential contribution of the role over time. A key limitation of the site visits however, was the inability to include Ngai Tūhoe in all aspects of the evaluation. This was due to time delays in the establishment of the practice meaning that the PA spent much of their time at other demonstration sites. While this limits our understanding of the role in Māori clinical settings, the overall findings still provide an important insight into the contribution and potential value of the role. Future evaluations however, may wish to explore cultural competence in more detail.

A common critique of qualitative research is the generalisability of its findings. For example, it is often assumed that findings from site visits or case studies are only valid for the context of the particular case or site. The use of multiple sites within the Phase II demonstrations and the similarities of the findings across the sites provide support for the potential for these findings to be relevant to other clinical settings. The consistency and complementarity of evidence across the different data sources and stakeholders also supports the insight and value of these findings to the health sector. In comparison to existing evaluations of the PA role, this evaluation has also provided generally greater depth and breadth of evidence.

Furthermore, the integration of the service level data from the clinical settings was an important means of validating the evaluators' independent data collection (both qualitative and quantitative). We note however that there are some key limitations in this analysis, particularly the availability of patient notes (requiring a focus on screening data), inconsistency in data entry, ability to link disparate databases, lack of controls, and the extent to which pre- and post-PA arrival could be explored. This often required the use of proxies and limited the feasibility of some inferential statistics. These challenges are not uncommon when analysing data from clinical settings. While the changes demonstrated in the pre and post analyses of these proxy measures give some support to

the qualitative evidence from the PA trials, we acknowledge the limitations of these measures as discussed above.

We also acknowledge that the evaluation was designed to provide insight into the PA role at a specific sample of sites across New Zealand. When introducing the role at different sites or clinical settings, the evaluation offers learnings which are useful for understanding the integration and contribution of the role. The applicability of the role for different contexts would need to be carefully considered to ensure that the PA role would support the needs and contexts of that setting.

The evaluation was also not designed to explore aspects of regulation, establishing training programmes or other steps that might be considered for a longer term approach to integrating the role. In this respect, the evaluation offers insights and considerations that warrant further exploration by HWNZ, the Advisory Group and the wider sector in light of any policy decisions or development of the role.

13. CONCLUSIONS

The aim of the PA evaluation was to determine the value and contribution of the PA role in the demonstration sites, and whether they offer a flexible, fit-for-purpose and sustainable addition to the existing health workforce in New Zealand.

The role integration and realistic evaluation frameworks has supported the evaluation in identifying a number of key factors and considerations that warrant consideration when understanding the value and contribution of the PA role (Figure 15).

Drawing on the insights from the mixed methods data integration conducted to date, the findings also suggest that:

1. The primary care/ED PA demonstrations were relevant and useful for understanding the potential value and contribution of the PA role across a range of clinical settings.
2. The data currently available for the evaluation suggests that the PA role has fitted into and supported current models of care and provided an acceptable level of care for patients at the different settings.
3. Available qualitative and quantitative data suggests that introduction of the PA role in primary care settings has led to a shift in the types of patients seen by GPs, with the data

suggesting that GPs were more likely to see patients with more complex care needs than PAs.

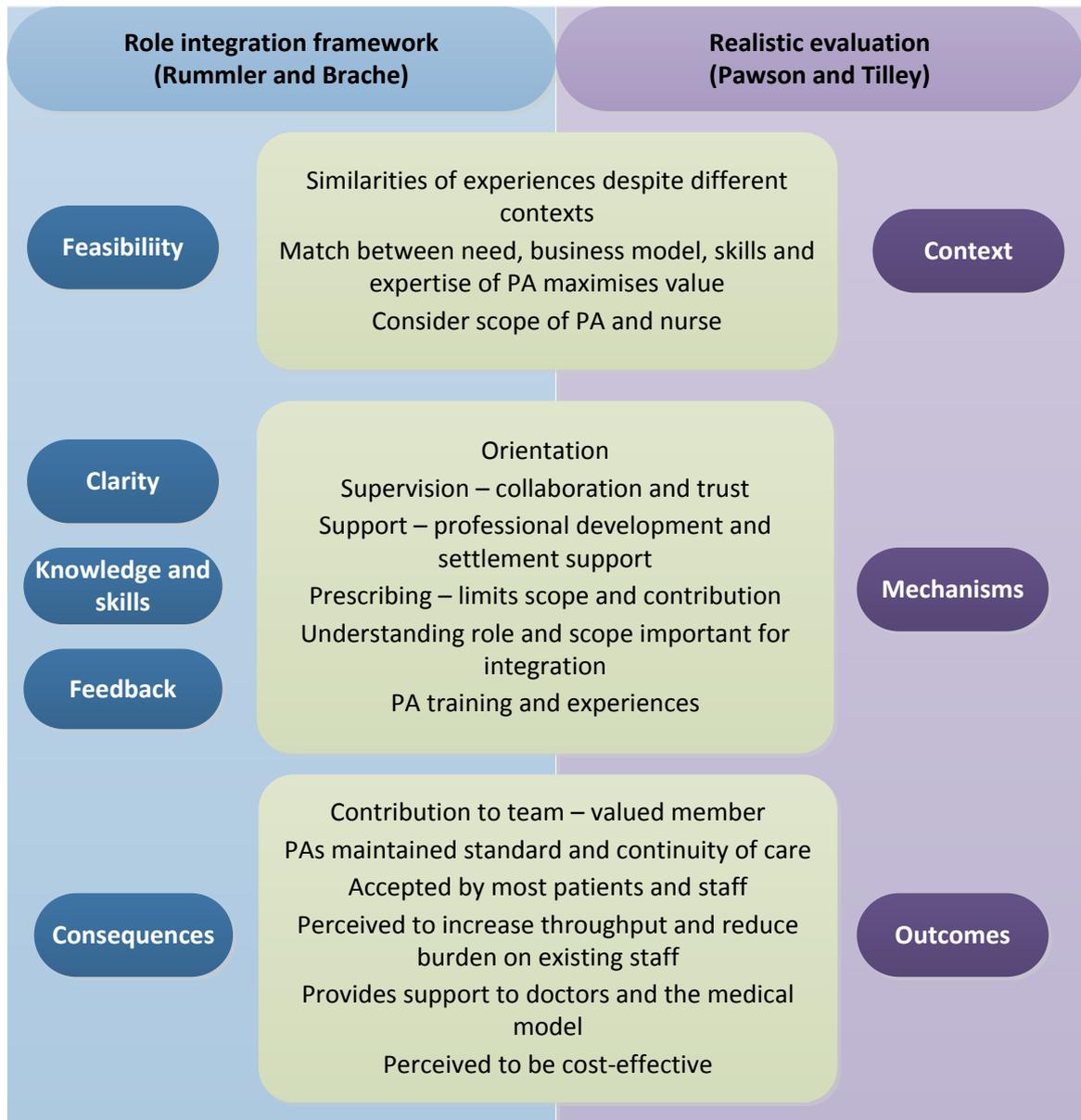
4. PAs were seeing a similar number of patients per hour to GPs, although GPs were seeing patients with more complex care needs. The data suggests that the PAs have reduced locum costs, reduced the workload of existing staff and supported patient throughput.
5. The PAs were accepted by the majority of patients. Nearly all patients were happy with the care they have received from the PAs, and satisfaction was similar to that of other health professionals.
6. Within the context of PAs seeing some 30,000 patients, no issues of clinical safety were drawn to our attention.
7. Clinical settings looking to explore the value of the PA for their site need to carefully consider the selection of a PA based on their skills, expertise and potential fit. Clinical settings need to provide a level of orientation and support that facilitates the integration of the PA and their contribution.
8. The PA role has the potential to be exported to other clinical settings across New Zealand. This potential however, needs to be driven by the needs of different sites and contexts, as well as the skills and experience of the PA. When there is a good match between the needs of the health care setting and the PA skills and expertise, the potential value and contribution of the PA role is maximised. This was particularly well illustrated at the Gore and Radius demonstration sites. When introducing the role at different types of clinical settings formative evaluation would be useful for supporting integration and understanding the contribution of the role.
9. The findings also suggest that clinical settings that might benefit from the PA role should to consider the gaps or shortages within their current workforce and ensure that the scope of the PA addresses these gaps while minimising impact on the role of other healthcare professionals, in addition to the business case for PA recruitment.
10. The key stakeholders involved in this evaluation suggested that regional and remote areas were likely to be settings that would particularly benefit from the PA role due to the challenges of recruitment. The benefits and value identified by the urban practices involved in this evaluation however, suggest that urban areas may also find value in the PA role.
11. The sector needs to consider the implications, risks and contributions of the PA role to the current health workforce. Specifically, the evaluation highlights the importance of:
 - a. Quality and experience of the PAs coming in from the United States.

- b. The match between the PAs skills and experience and the needs of the clinical setting.
- c. Orientation to the New Zealand health system for PAs from outside of New Zealand.
- d. Supervision.
- e. Ongoing support and professional development for PAs.
- f. Exploring what is required for PAs to be able prescribe or to become regulated in New Zealand.
- g. Explore the value and costs of establishing a New Zealand based training programme.

When reviewing the findings and potential implications of the Phase II demonstrations, it is important to acknowledge that some of the potential implications and issues for consideration are long term processes. These insights will need to be reviewed with the sector to further understand the potential contribution and value of the PA role to the New Zealand health workforce, and strategies to address any potential negative impacts on other parts of the health workforce.

The current demonstration sites' employers are very keen to maintain the PA role at their settings. From a patient safety and acceptability perspective, the evaluation provides no evidence to suggest that the PAs should not remain at their current sites. This coupled with the evidence on the integration, contribution and acceptance of the role by most patients and health professionals indicates some key aspects of the potential fit, value and sustainability of the PA role to the New Zealand health workforce.

Figure 15: Key success factors and considerations for understanding the value and the contribution of the PA role in New Zealand



14. REFERENCES

- (1) Ministry of Health. Physician associate (physician assistant). 2014; Available at: <http://www.health.govt.nz/our-work/health-workforce/new-roles-and-initiatives/current-projects/physician-associate-physician-assistant>. Accessed 15th January 2015
- (2) Siggins Miller. Evaluation of the Physician Assistant Trial - Final report. 2012.
- (3) Pawson R, Tilley N. Realistic evaluation. London: Sage; 1997.
- (4) Rummler G, Brache A. Improving performance: How to manage the white space on the organisational chart. San Francisco: Jossey-Bass; 1995.
- (5) Canadian Medical Association. Physician Assistant Toolkit. 2012.
- (6) American Academy of Physician Assistants. The Physician - PA Team. Professional Issues 2010.
- (7) Piemme T, Sadler A, Carter R, Ballweg R. The Physician Assistant: An illustrated history. Arizona: Acacia Publishing; 2013.
- (8) Farmer J, Currie M, West C, Hyman J, Arnott N. Evaluation of physician assistants to NHS Scotland - Final report. 2009.
- (9) Woodin J, McLeod H, McManus R. Evaluation of US-trained Physician Assistants working in the NHS in England - Interim report. 2004.
- (10) Ducharme J, Alder R, Pelletier C, Murray D, Tepper J. The impact on patient flow after the integration of nurse practitioners and physician assistants in 6 Ontario emergency departments. Canadian Journal of Emergency Medicine 2009;11(5):455.
- (11) Urbis. Evaluation of the Queensland Physician's Assistant Pilot - Final Report. 2010.
- (12) Bohm E, Dunbar M, Pitman D, Rhule C, Araneta J. Experience with physician assistants in a Canadian arthroplasty program. Canadian Journal of Surgery 2010;53(2):103.
- (13) Miller M, Siggins I, Fowler G. The potential role of Physician Assistants in the Australian context. 2012;volume 2: Literature review.
- (14) Pam. Physician Assistant Trial Literature review.
- (15) Ministry of Health. Briefing to the Incoming Minister 2014. 2014.
- (16) Medical Council of New Zealand. Public and private health systems. 2011; Available at: <https://www.mcnz.org.nz/alpinfo/public-and-private-health-systems>.
- (17) Ministry of Health. Overview of the health system. 2011; Available at: <http://www.health.govt.nz/new-zealand-health-system/overview-health-system>.
- (18) Greene J. Mixed methods in social inquiry. 9th ed. San Francisco: Jossey-Bass; 2007.

APPENDIX 1: PATIENT SURVEY DATA SUPPLEMENT

A patient survey was conducted in all demonstration sites to determine patients' perceptions of the care they were receiving from PAs. The survey specifically asked patients' for their agreement with the following statements:

- I felt listened to
- I was involved in decisions about my treatment and care
- My questions were answered in a way that I could understand
- I was told what to do if my problems or symptoms continue or get worse
- I have trust and confidence in the health professional
- The health professional that I saw was friendly and approachable
- The health professional respected my culture and beliefs
- The health professional was knowledgeable about my condition and how to treat it
- I would be happy to be treated by the same person again

This data supplement is intended to provide the results from the patient survey and provides a more detailed insight into the evidence that was used to inform the evaluation report. The following sections will provide detail on the survey respondents, total results, and results for patients seen by physician assistants compared to other health professionals.

PATIENT SURVEY RESPONDENTS

A total of 511 patient surveys were collected from the five trial sites over the period of June-September 2014 (see methods section of the main report for more detail on the survey method).

Patients were asked how strongly they agreed or disagreed with nine statements about the care they received from the health professional who saw them. They were also asked about their gender, age, and ethnicity. Office staff recorded the main health professional that the patient was seen by.

Gore collected the least amount of patient surveys while Rototuna collected the most as shown in Table 9. This is likely to reflect the challenges of conducting a patient survey in an Emergency Department setting.

Table 9: Patient surveys collected across trial sites

Site	Number
Davies Corner	119
Gore	43
K'aute	105
Rototuna	159
Tokoroa	85
Total	511

Attending health professionals

The attending health professional was recorded on the patient surveys. Nearly half of the returned surveys were of patients that had seen a PA (Table 10).

Table 10: Patient surveys received and relating to health professionals

Health Professional	Number
Physician Assistant	220
Doctor	137
Nurse	19
Nurse Practitioner	10
Doctor & Nurse	1
Role not identified	124
Total	511

Most of the surveys were completed by patients who were mainly seen by a PA. Two exceptions were Rototuna and Tokoroa. Unfortunately, most of the surveys returned by Rototuna did not identify the health professional and most of the surveys returned by Tokoroa were seen by a Doctor (Table 11).

Table 11: Health professional seen by patients at each site

Site	Not recorded	Doctor	Doctor & Nurse	Nurse	Nurse Practitioner	Physician Assistant
Davies Corner	23%	31%	0%	1%	0%	45%
Gore	7%	21%	2%	2%	0%	67%
K'aute	3%	28%	0%	9%	4%	57%
Rototuna	42%	17%	0%	3%	3%	37%
Tokoroa	29%	41%	0%	5%	2%	22%
Total	24%	27%	<1%	4%	2%	43%

Ethnicity

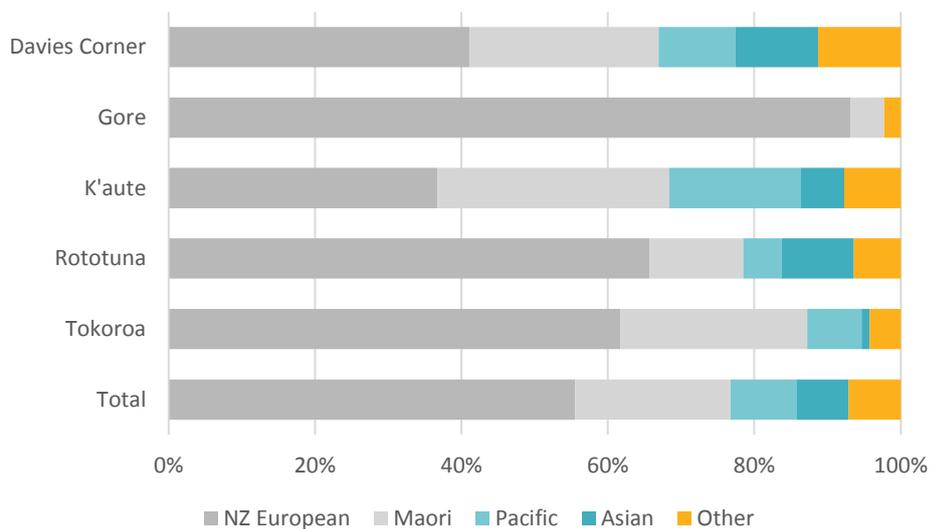
Patients were asked to record their ethnicity on the survey. Over half of the respondents identified as NZ European. Some patients identified with more than one ethnic group. The ethnic spread amongst patients is illustrated in Table 12.

Table 12: Patient ethnicity

Ethnicity	Number	Percentage
NZ European	306	60%
Maori	117	23%
Pacific	50	10%
Asian	39	8%
Other	39	8%
Total	551	108%

The majority of patient surveys collected in Gore were completed by New Zealand European patients. K'aute and Davies Corner had the largest proportion of non-Europeans who had answered the patient survey. The ethnic spread across sites is shown in Figure 16.

Figure 16: Ethnicity of patient survey respondents across sites



Gender and age

There were slightly more returned patient surveys from females with 279 (55%) responses as shown in Table 13. Males comprised of 226 (44%) responses and 6 (1%) of the survey respondents did not identify their gender.

Table 13: Gender of patient survey respondents

Site	Female	Male
Davies Corner	63	55
Gore	21	22
K'aute	61	42
Rototuna	88	71
Tokoroa	46	36
Total	279	226

Different sites had different age distributions (Table 14). Gore had a large proportion of patients aged 6-19. Tokoroa had a large proportion of patients 60 years or older.

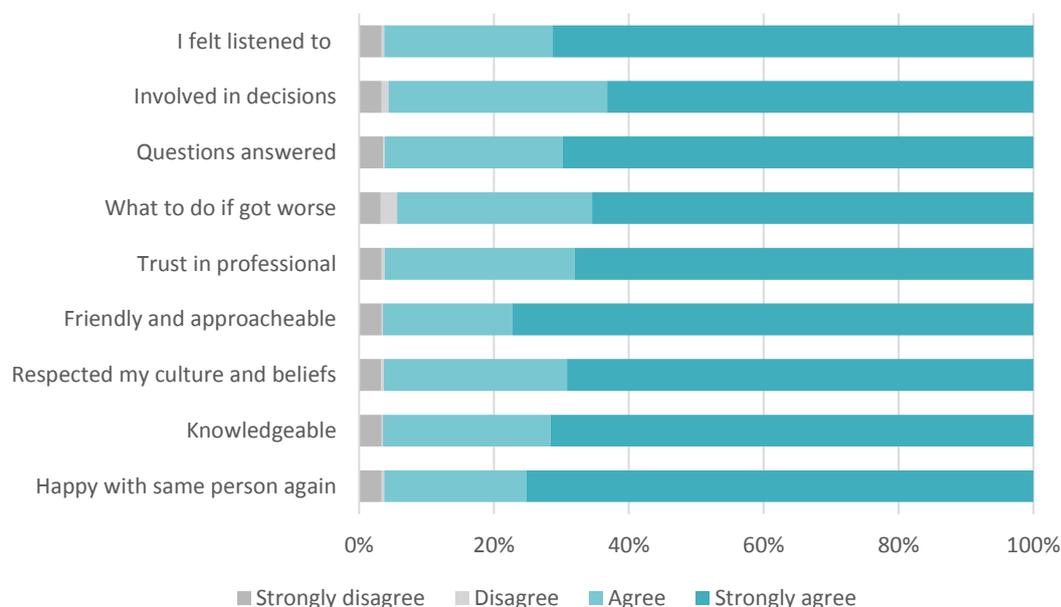
Table 14: Age of patient survey respondents

Site	0-5	6-19	20-39	40-59	60-79	80+	Unknown
Davies Corner	16.8%	16.8%	31.9%	22.7%	7.6%	3.4%	0.8%
Gore	2.3%	39.5%	16.3%	11.6%	18.6%	9.3%	2.3%
K'aute	4.8%	4.8%	31.4%	42.9%	10.5%	4.8%	1.0%
Rototuna	17.0%	13.2%	30.2%	21.4%	14.5%	3.8%	0.0%
Tokoroa	5.9%	5.9%	23.5%	22.4%	36.5%	3.5%	2.4%
Total	11.4%	13.3%	28.6%	25.4%	16.0%	4.3%	1.0%

PATIENT RESPONSES

Overall, the patient surveys showed that patients were very satisfied with the care they received from the clinical setting they visited (Figure 17).

Figure 17: Total patient survey responses



Characteristics of patients who disagreed

There was a small minority of patients who suggested that they had not received good quality care (3.8% across all clinical settings). Those who disagreed tended to disagree across all domains and would not be happy to be treated by the same person again; this could suggest a personal rather than role-specific issue. A brief analysis was conducted to explore the differences between the characteristics of those who were less satisfied with their care and the characteristics of the total sample.

There were little differences between the gender and ethnicity of patients who were unhappy with the care they received compared to the characteristics of the total respondents. Those who were aged over 80 years of age were more likely to be unhappy with their care, as were those aged between 20 and 39 years. The small number of patients who were not satisfied with their care however, makes it difficult to statistically explore any differences.

Do patients feel differently when seen by a physician assistant?

The responses to the PA patient surveys were compared to those that were completed for all other health professionals at the demonstration sites. Where the attending health professional was not identified on the survey, these findings were excluded from the analysis (Figure 18; Figure 19)

Both groups had a large proportion of patients that agreed or strongly agreed across all domains. A Mann-Whitney-Wilcoxon test has been used to test for statistical significance between patients seen by physician assistants and patients seen by other identified health professionals. There were no significant differences at the 0.05 level. This suggests that patients are just as satisfied with the care they receive from a physician assistant as they are with other health professionals.

Figure 18: Patient perceptions of physician assistants

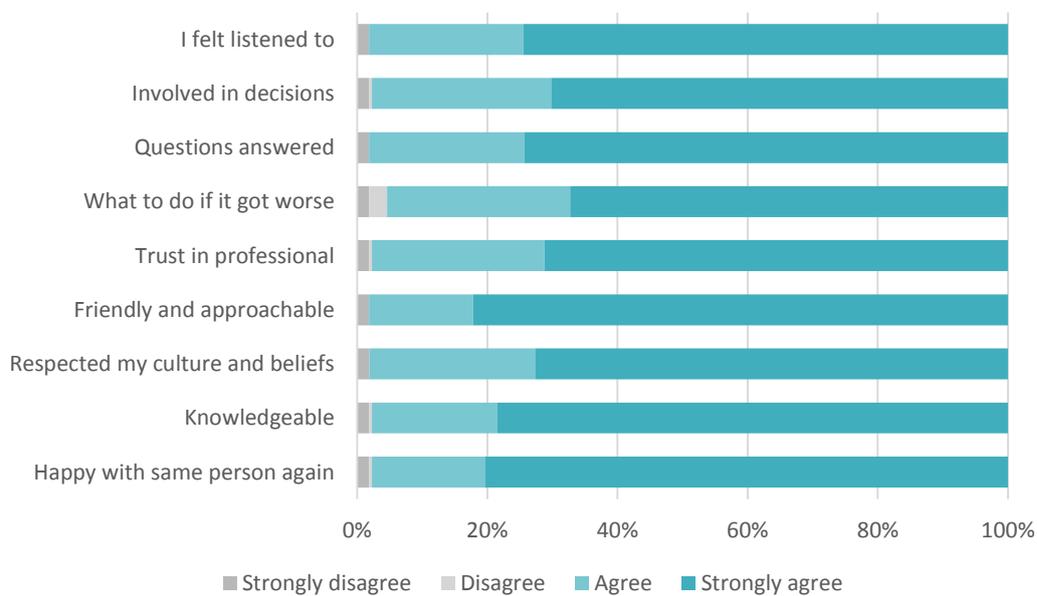
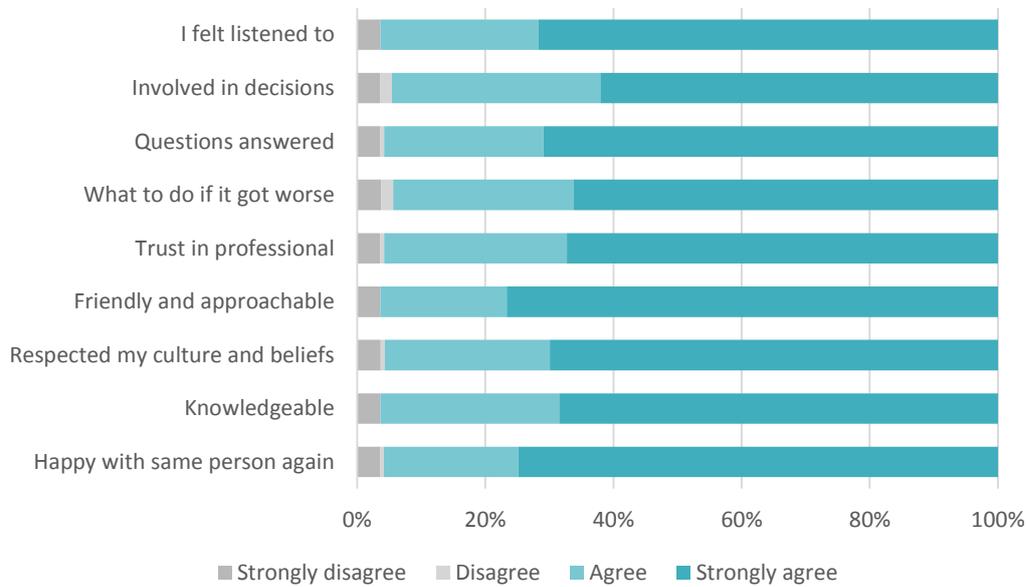


Figure 19: Patient perceptions of other health professionals



SUMMARY

The findings from the patient survey provide support for the acceptance of the PAs by the patients, and for their satisfaction with the care that they received. Overall, most of the patients were highly satisfied with the care that they were receiving from all of the healthcare professionals at the demonstration sites.

APPENDIX 2: STAFF SURVEY

An online staff survey was disseminated to each of the demonstration sites via email (see method section of the main report for more detail). The survey was designed to identify staff perceptions of:

- The contribution of the physician assistants they worked with,
- The impact of the physician assistant role on their clinical setting and
- The potential role for physician assistants in the New Zealand health workforce.

This data supplement provides the results from the staff survey and provides a more detailed insight into the evidence that was used to inform the evaluation report. The data will be presented as an aggregate analysis and not broken down by demonstration sites. This is to maintain the anonymity of the views and experiences of the respondents at each of the sites. The following sections provide detail on the survey respondents, the results for each question and a brief summary.

STAFF SURVEY RESPONDENTS

A total of 65 staff surveys were collected from five of the trial sites. Staff were asked which clinical site they came from, their role at the site, and with which physician assistants they mostly worked with. One of the respondents indicated they were a physician assistant. However, they did not continue to complete the survey and this response has been excluded leaving 64 responses.

The majority of staff responses came from Rototuna, and Gore had the least responses (Table 15).

Table 15: Clinical site of staff survey respondents

Clinical Site	Responses
Rototuna – Hamilton City	23
Midlands Network – Tokoroa	16
Davies Corner – Hamilton City	14
K’aute Pasifika - Hamilton	9
Gore ED	3
Total	65

The majority of staff respondents were nurses or GPs. There was also a range of other clinical and non-clinical staff who completed the survey (Table 16). The responses from the different clinical settings provide a good sample size for the survey data. While it would have been useful to have more feedback from staff at Gore, it is important to remember that these surveys have been completed by those who have worked directly with the PAs.

Table 16: Role of staff survey respondents when working with physician assistants

Role	Responses	Percentage
Nurse	19	30%
GP	15	24%
Reception	8	13%
Supervising GP	6	10%
Administration	4	6%
Managers	4	6%
Medical Care Assistant	3	5%
Other	2	3%
Medical Officer	1	2%
Nurse Practitioner	1	2%
Total	63	100%

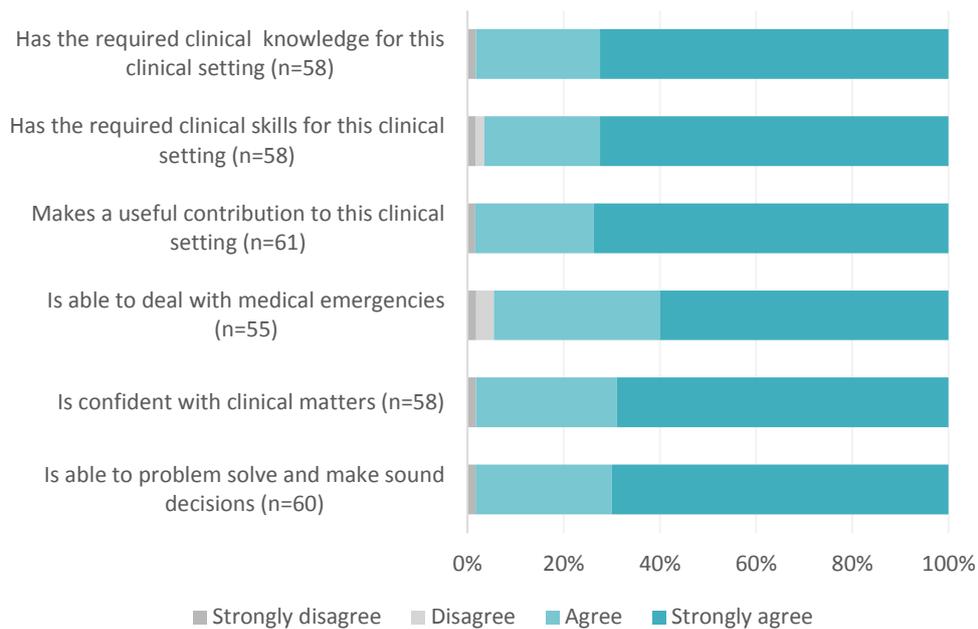
Staff also indicated which physician assistants they frequently work with. Some staff worked with multiple physician assistants, although the survey required them to focus on the PA that they worked with most often.

CONTRIBUTION OF THE PHYSICIAN ASSISTANTS

Staff were asked about the contribution of the physician assistants they work closely with across a variety of dimensions (Figure 20; Figure 21). Almost all staff who took part in the online surveys either agreed or strongly agreed that the PA they work most closely with:

- has the required clinical knowledge for their clinical setting (98%)
- has the required clinical skills for their clinical setting (97%)
- makes a useful contribution to the clinical setting (98%)
- are able to deal with medical emergencies (95%)
- are confident with clinical matters (98%)
- are able to problem solve and make sound decisions (98%)

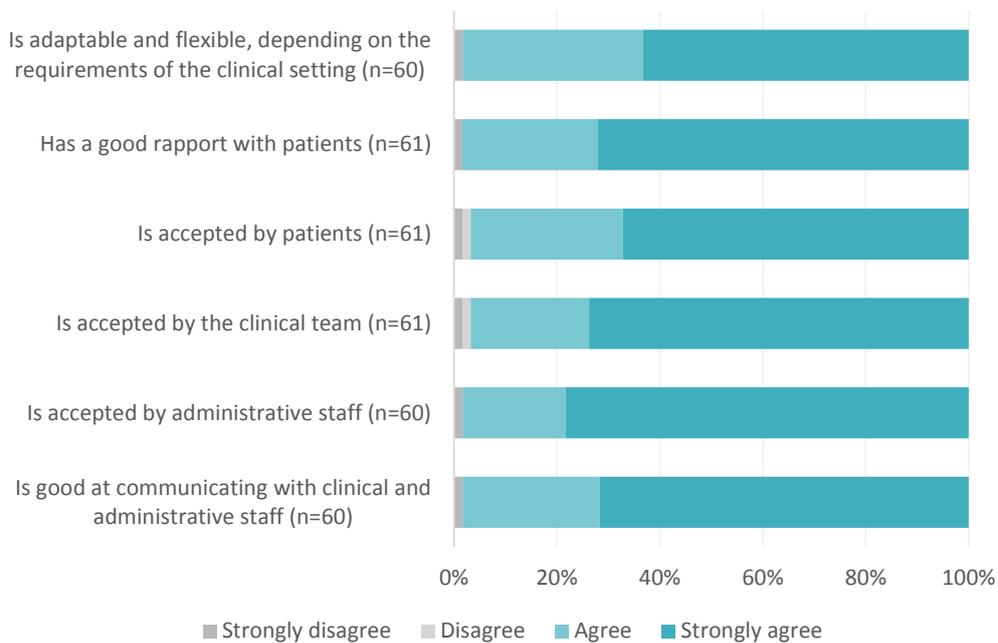
Figure 20: The physician assistant(s) I work most closely with...



They were also asked about domains that relate to the integration of the physician assistants into their clinical settings. Nearly all staff who answered these questions either agreed or strongly agreed that the PA they work most closely with:

- are adaptable and flexible, depending on the requirements of the practice (98%)
- have a good rapport with patients (98%)
- are accepted by patients (97%)
- are accepted by the clinical team (97%)
- are accepted by administrative staff (98%)
- are good at communicating with clinical and administrative staff (98%)

Figure 21: The physician assistant(s) I work most closely with...



Staff were also given the opportunity to make other comments. A thematic analysis of the results was conducted and in order of frequency the following themes were identified. It was found that many staff:

- Made general comments indicating that the PAs were good or excellent, such as demonstrating good clinical skills (9 responses)
“She is also very good at minor surgeries”
- Reporting hearing positive feedback from patients about the PAs (7 responses)
“A lot of patients ask for [PA] to be their Dr and we have to explain again his position but they like him so much they have a lot of confidence in him and his decision making for them and their health”
- Found the PAs good to work with (6 responses)
“I really enjoy working with [PA], she is easy to talk to and if I’m not 100% sure on something I can always go to her with no hesitation. She is awesome”

Some other comments indicated that:

- Staff found the physician assistants helped see urgent patients faster
“[PAs] make a huge impact to our treatment team's ability to see urgent patients quickly”

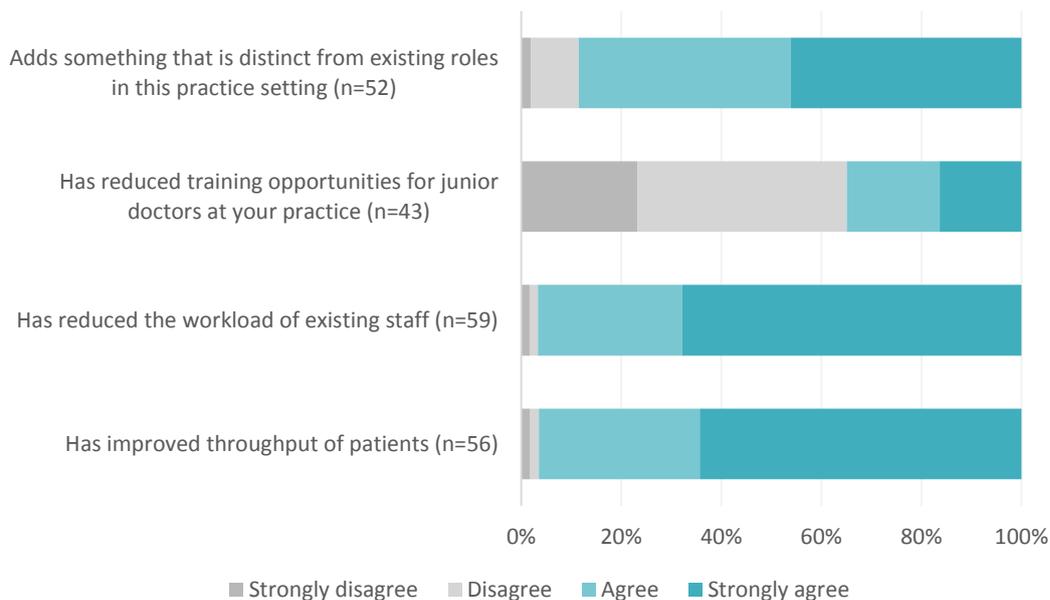
- Staff found the physician assistants a valuable and professional member of the team
“We would not know what to do without [PA]. He is truly indispensable to the team”

IMPACT OF THE PHYSICIAN ASSISTANTS

Staff were asked about the impact that the physician assistants they work with had made on their clinical setting (Figure 22). Staff were positive about the impact of physician assistants with most agreeing or strongly agreeing that physician assistants they work with:

- have improved throughput of patients in their clinical setting (96%)
- have reduced the workload of existing staff at the clinical setting (97%)
- adds something that is distinct from existing roles in the clinical setting (89%)
- did not reduce training opportunities for junior doctors (65%).

Figure 22: The physician assistant...



Staff were also given the opportunity to make other comments. A thematic analysis of the results was conducted and are discussed below in order of frequency. More than one staff member made comments relating to:

- PAs help address the workload in the clinical setting (3 responses)
“With her the team here feels complete. We feel the workload a bit heavier on days she doesn't work.”

- PAs help to train junior doctors (3 responses)
“[PA] has often participated in the orientation and training of fourth and fifth year medical students who come in for exposure to general practice environments. This has helped in reducing the workload of the teaching GP and also provided a more team lead approach to their orientation”

Other comments made by staff related to the PAs being good for acute appointments and helping with workforce challenges:

“They have worked very well with acute same day appointments”

“We would have not coped without the PA s in our situation of challenged workforce”

In reflection of the interviews with staff, a couple of the comments in the survey also identified the potential overlap with the role of a nurse practitioner:

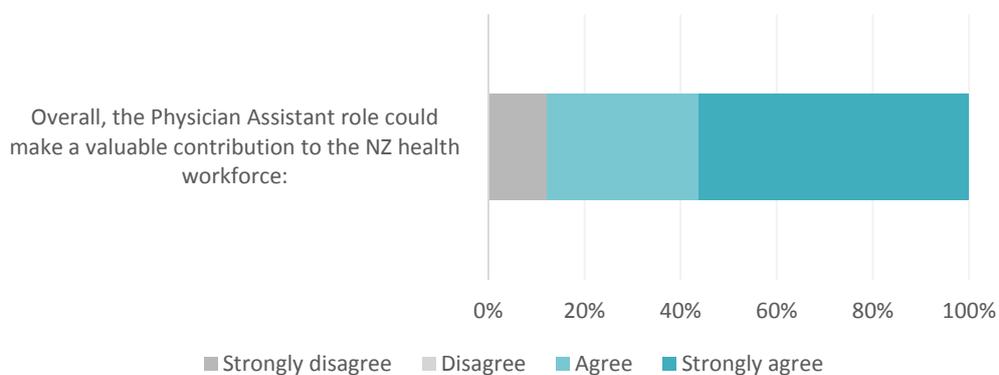
“Feel nurse practitioner could fulfil similar role and can prescribe, good to support NZ nurses training in this role and give them jobs”

POTENTIAL ROLE FOR PHYSICIAN ASSISTANTS IN THE NEW ZEALAND WORKFORCE

Overall contribution to the New Zealand health workforce

Staff were asked about their level of agreement that “overall, the physician assistant role could make a valuable contribution to the NZ health workforce.” The majority of staff can see value from the physician assistant role for the NZ health workforce (Figure 23).

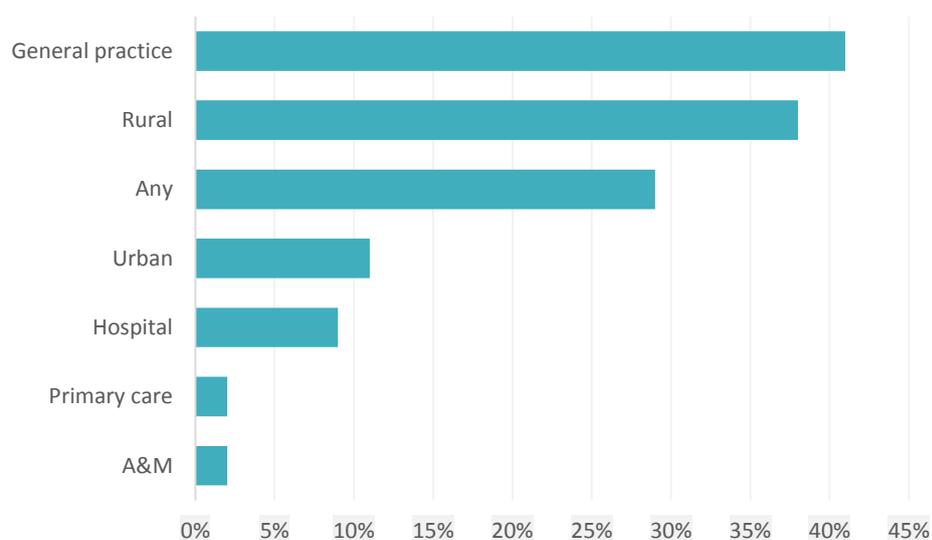
Figure 23: Staff perceptions on the physician assistant role in NZ (n= 57)



Most valuable setting for a physician assistant

Staff were asked to comment on the setting in which they thought the physician assistant would be most valuable. Of the 56 responses, 16 (29%) thought they would be valuable in any setting in New Zealand. Staff also suggested that PAs would be most valuable in a rural and general practice settings (Figure 24).

Figure 24: In which NZ health setting do you think the physician assistant role would be most valuable? (n=56)



The setting that the staff thought was most valuable was influenced by the practice they were working at as shown by Table 17.

Table 17: Most valuable setting by clinical setting

Practice	Most valuable setting				
	General practice	Hospital	Urban	Rural	Any
Gore	0%	0%	0%	33%	67%
Tokoroa	20%	7%	7%	67%	13%
K'aute	44%	11%	11%	11%	44%
Rototuna	44%	11%	17%	33%	28%
Davies Corner	73%	9%	9%	27%	27%
Aggregate	41%	9%	11%	38%	29%

Staff were also asked why they thought the physician assistant role would be most valuable in these settings but this was often overlooked. Reasons that were provided were commonly either due to the setting having recruiting troubles or being an area of high demand.

Changes to improve the physician assistant role in New Zealand

Staff were asked about what they thought would need to change to improve the contribution of the physician assistant role in their clinical setting. There were 49 responses and 15 (31%) of these indicated they could not think of any changes. The majority of the remaining responses (25 or 74%) indicated that physician assistants would need to be able to prescribe to improve their contribution.

“They need to be able to prescribe. I can see how it slows her down to wait outside the doctor's door for a signature on lab forms and prescriptions”

“Some prescribing right to medicines that are even over the counter”

Other improvements were less commonly indicated but included being recognised by ACC and insurance companies, having a clearer scope of practice, and becoming a registered health profession. Other changes that were mentioned only once were having formalised guides on the supervision requirements, educating the public about the new role, pre-assessment of the capabilities of each physician assistant, having gaps in the appointment system for supervising GPs to supervise, and ensuring practices are clear on their reasons for wanting a physician assistant.

Final Comments

Staff were offered the chance to make final comments on the physician assistant role at their practice. There were 45 staff who commented and many took the opportunity to say they had enjoyed working with the physician assistants.

“It's great working with [PA], has broad knowledge and a pleasure to work with”

Other common themes were saying the physician assistants had been valuable, made an excellent contribution, and would be missed when they left (Figure 30).

“It has been a great experience working with the PA's - they are interesting and intelligent people who have contributed greatly to our clinical team. We will miss them!”

“Extremely valuable role. An integral member of the health team”

One comment also noted the value of integrating the PA within their existing health team in terms of profitability and safety:

“With a GP, NP, PA , Nurse, Admin and Social worker working together as a team , we estimate a population of 6000 patients can be profitably and safely managed in terms of primary care with minimal or no patient co-payment utilizing existing funding systems. We have used this pilot project to test various components of such a service successfully”

SUMMARY

The staff survey provides support for the acceptance and contribution of the PA role to the different clinical settings involved in the PA demonstrations. While only a few people from Gore completed the survey, the interviews conducted at Gore triangulate well with the findings from the survey.

APPENDIX 3: MIXED METHODS DATA INTEGRATION

Source	Measures	Data Domain	Gore	Tokoroa	Radius sites
Patient Management System	Number of patients seen	Patient experience and outcomes	✓	✓	✓
	Wait times (time till patient is seen by a medical practitioner)		✓	✓	✓
	Patient volumes seen and time spent in emergency department		✓		
	Repeat visits to PA			✓	✓
	Patients referred to GP by PA (measured by patients seeing GP and PA in one day)	Workforce impact		✓	✓
	PA contacting or referring to Medical Officer		✓		
	Average patients per hour	Clinical Outcomes		✓	✓
Clinical notes/ Patient Management System	Prescriptions recommended	Clinical outcomes	✓	✓	✓
	Labs ordered (blood, x-ray, etc)		✓	✓	✓
	ACC vs Medical			✓	✓
	Triage codes, presentation codes, and diagnosis code		✓	<i>data dependent</i>	<i>data dependent</i>
	Volumes of next day re-presentations		✓		
	Referrals to other specialists		✓	✓	✓
Management/ Administration data	Number of patients enrolled	Workforce and financial impact		✓	✓
	Number of FTEs		✓	✓	✓
	Hours worked (including other staff at the sites)		✓	✓	✓
	Direct costs of PA	Financial impact	✓	✓	✓
	Indirect costs of PA (e.g. impact on supervising GPs)		✓	✓	✓
	Locum costs		✓	✓	✓
	Practice reimbursements			✓	✓
Stakeholder Interviews	Perceptions of the unique role/contribution of the PA	PA integration and development and Contextual contributors	✓	✓	✓
	Feedback on patients' response and acceptance of the PA	Patient experience and impact	✓	✓	✓

	Preparation of the PA and settling in NZ		✓	✓	✓
	PA characteristics which influence effectiveness	PA integration and development	✓	✓	✓
	Characteristics of a successful PA/Supervisor relationship		✓	✓	✓
	Perceptions of the role of PAs in NZ health sector		✓	✓	✓
	Integration into site	Contextual contributors	✓	✓	✓
	Demonstration site readiness and preparation for PA		✓	✓	✓
	PA acceptance in site and fit with site culture		✓	✓	✓
	Perceptions of clinical competence and experience with any issues or complaints	Clinical Outcomes	✓	✓	✓
	PA impact and changes in business practice	Workforce impact	✓	✓	✓
	Perceptions about financial implications of PA	Financial impact	✓	✓	✓
Staff satisfaction survey	Staff perceptions of the unique role/contribution of the PA	PA integration and development and Contextual contributors	✓	✓	✓
	Staff perceptions of PA acceptance in the site and fit with site culture	Patient experience and impact	✓	✓	✓
	Staff feedback on patients' response and acceptance of the PA		✓	✓	✓
	Staff perceptions of clinical competence and experience with any issues or complaints	Clinical Outcomes	✓	✓	✓
	Staff perspective on the effect of the PA on business practice and demonstration site output	Workforce impact	✓	✓	✓
Patient survey	Knowledge and understanding of patient's needs	Patient experience and impact	✓	✓	✓
	Cultural awareness and competency		✓	✓	✓
	Trust and confidence in practitioner		✓	✓	✓
	Provided adequate information and support		✓	✓	✓

