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Title:
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Date:
2019-06-01

Citation:
Brennen, R., Sherburn, M. & Rosamilia, A. (2019). Development, implementation and evaluation of an advanced practice in continence and women's health physiotherapy model of care. Australian and New Zealand Journal of Obstetrics and Gynaecology, 59 (3), pp.450-456. https://doi.org/10.1111/ajo.12974.

Persistent Link:
https://hdl.handle.net/11343/285619

Title: Development and Implementation of an Advanced Practice in Continence and Women's Health Physiotherapy Model of Care

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Acknowledgements:

Victorian Department of Health and Human Service Workforce Innovations Grants Program and project personnel.

All members of the Advanced Practice in Continence and Women's Health steering committees at the Victorian DHHS, Royal Women's Hospital, Monash Health and Barwon Health.

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Article type : Original Manuscript

Title: Development, Implementation and Evaluation of an Advanced Practice in Continence and Women's Health Physiotherapy Model of Care

Short title: Advanced Practice in Women's Health Physiotherapy

Word count abstract: 240

Word count main text: 2806

Tables: 2

Figures: 2

Keywords: women's health physiotherapy, advanced scope of practice, urinary incontinence, pelvic organ prolapse, women's health services

Abstract

Background:

With public health facing workforce shortages, increasing costs and increasing demands, innovative patient pathways are vital to meet patient needs. Advanced practice physiotherapy roles are well established in emergency departments and musculoskeletal/orthopaedic services and have begun to emerge in other clinical areas.

Aims:

In 2014 the Royal Women's Hospital, Monash Health and Barwon Health received a Victorian Department of Health and Human Service (DHHS) Workforce Innovation grant to develop and implement an advanced practice in continence and women's health physiotherapy assessment model of care.

Material and Methods:

A new model of care was developed with an advanced practice physiotherapy-led assessment clinic integrated into the triage and assessment process of Gynaecology, Urogynaecology and Urology clinic in major public health centres. A clinical competency and credentialing pathway and toolkit was developed to support training and development of advanced practice skills for senior physiotherapists in this clinical area. The initial assessment of the new model-of-care was undertaken by DHHS and PriceWaterhouse Coopers, including access to care, cost of assessment and safety.

Results:

An advanced practice continence and women's health physiotherapy assessment clinic was implemented safely and contributed to improved access to care as assessed by reduced waiting lists and waiting times for assessment, with high levels of patient satisfaction and no adverse events.

Conclusion:

Advanced practice continence and women's health physiotherapy clinics can contribute to streamlined, cost-efficient triage and assessment process for patients with urological or gynaecological issues attending tertiary medical clinics.

Introduction

With public health facing medical workforce shortages, increasing costs and increasing demands, innovative patient pathways are vital to meet patient needs. Advanced practice roles have been developed in allied health [1,2,3,4] and nursing [5] to take advantage of senior clinicians' skills to provide a high level of clinical assessment and care for patients, expanding service options available to meet growing demand [6]. Advanced practice physiotherapy roles have been established in emergency departments and musculoskeletal/orthopaedic services for a number of years [2,3.4] but have only just begun to emerge in gynaecology and pelvic floor dysfunction [7].

Advanced practice roles need to be underpinned by rigorous clinical education and assessment to ensure that clinicians are skilled, safe and confident [8]. Saxon, Gray and

Oprescu [9] recommend robust evaluations of patient outcomes, cost-effectiveness, training requirements and sustainability for extended allied health roles.

International guidelines recommend conservative management including pelvic floor muscle training or bladder training as first line interventions for urinary incontinence, stage 1-2 pelvic organ prolapse and faecal incontinence [10,11]. The National Institute for Health and Care Excellence (NICE) specifically recommends at least 3 months of conservative management prior to conducting investigations such as Urodynamics, and prior to surgical management [10]. Women referred with these conditions may benefit from a condensed early assessment that allows them to start conservative management soon after referral, rather than waiting on a list without active management [12].

Ideally, patients should be referred for pelvic floor muscle training as part of primary care in the community, however, in many cases this has not occurred and a referral is made directly to the tertiary outpatient clinic, where patients are assessed by a medical specialist. After this, patients who are referred for physiotherapy management are placed on a physiotherapy waiting list, resulting in delays in accessing both medical and non-medical treatment.

In the usual model of care within Australian Gynaecology, Urogynaecology and Urology outpatient units, patients are first assessed by Gynaecologists, Urogynaecologists or Urologists (hereafter referred to as Medical Specialists) and their junior medical staff (Figure 1).

The Royal Women's Hospital (RWH), Monash Health and Barwon Health received a DHHS grant to develop and implement an Advanced Practice Continence and Women's Health Physiotherapy (C&WHP) model, based on existing advanced practice allied health [1,2,3,4] and nursing [5] models of care in other clinical areas in Australia and modelled on the use of physiotherapists in women's health in the National Health Service in the United Kingdom [13].

Specific goals were to:

- develop a cost-efficient integrated workforce model
- increase collaboration between medical specialists, physiotherapists and nurses, building on existing multidisciplinary models where these were already established
- ensure patients with pelvic floor dysfunction have timely access to best practice care
- improve health outcomes and consumer confidence, and

- develop a competency toolkit to support implementation of an Advanced Practice C&WHP role.

This article reports on the process of developing an Advanced Practice C&WHP model in the Australian public health context, with a brief overview of initial health service outcomes from the implementation of this model.

Materials and Methods

The project comprised three stages, planning, implementation and evaluation.

Planning included identifying & engaging key stakeholders, mapping existing patient journeys, and defining an Advanced Practice C&WHP model of care including; roles and responsibilities of a multidisciplinary team, clinical inclusion and exclusion criteria (Table 1) and clinical competencies required by C&WHP. Implementation included identifying facility requirements, recruiting to Advanced Practice C&WHP positions, and developing and implementing competency-based training and assessment.

The RWH and Monash Health Human Research and Ethics Committees classified the project as a Quality Project and granted approval as such. At Barwon Health, there was 'umbrella' ethics approval for advanced practice roles and related research.

Clinical Education Framework

Skills in Advanced Practice C&WHP were identified in collaboration with each site steering committee. Competencies for these were developed, predicated on the base skill level of a grade 3 physiotherapist with seven years' clinical experience and postgraduate qualifications in C&WHP. Such postgraduate qualifications include training in dipstick urinalysis, real-time ultrasound assessment of the pelvic floor, detailed pelvic floor examination and teaching on uroflowmetry and urodynamics, providing a relevant knowledge and skill base for advanced practice competency training and assessment.

Data Collection

The number of patients waiting for assessment was recorded from waitlists pre- and post-implementation.

Advanced Practice C&WHP Assessment Clinic data were recorded by the treating clinician in a specifically designed, password-protected database that was locked for editing after each session, including:

Clinical outcomes

- Australian Pelvic Floor Questionnaire (APFQ) completion and score
- Primary and secondary presenting clinical problems (stress urinary incontinence, urgency urinary incontinence, mixed urinary incontinence, stage 1-2 pelvic organ prolapse, stage 3-4 pelvic organ prolapse, or faecal incontinence)
- Any clinical or service-delivery adverse events

Health service data outcomes:

- Patient waiting time in days from referral to initial assessment, and wait time in minutes at the clinic on the day
- Physiotherapist, Medical Specialist, Nursing and administration time spent in the assessment appointment and related tasks

Clinical service provision outcomes:

- Assessments and investigations completed
- Planned treatment
- Previous conservative management

Anonymous patient satisfaction surveys (Appendix) were given to 100 consecutive patients at Monash Health and 36 consecutive patients at Barwon Health. These were completed immediately after attending their Advanced Practice C&WHP Clinic appointment and returned to administrative staff.

Six months after project commencement, an online workforce survey was sent to Monash Health staff. The patient and workforce surveys were based on Victorian DHHS advanced practice allied health patient and staff satisfaction survey templates.

Cost

Costs were assessed by examining the average initial assessment appointment in the Advanced Practice C&WHP and Medical Specialist models. Data on the time spent with each staff type was paired with wage rates to determine monetary value. Salaries and other costs

were calculated according to applicable Enterprise Bargaining Agreements. Staff time for a Medical Specialist appointment was estimated by members of the medical team and confirmed by observation of two clinic sessions. Average patient waiting times, consulting and administrative time of clinical and support staff for both models were calculated from observed sessions. Training time for competencies was recorded by the physiotherapists during their training.

Data Analysis

Data collection was co-ordinated by the Victorian DHHS Project team. Price-Waterhouse Coopers conducted an independent descriptive analysis of clinical outcomes, cost, and patient and staff satisfaction.

Results

In the new model of care (Figure 2), referrals were triaged by the registrar and a Senior C&WHP Clinician. Patients were triaged to either the Medical Specialist clinic or the Advanced Practice C&WHP assessment clinic. Dipstick urinalysis, post-void residual (PVR) bladder volume scanning and uroflow could be completed in the Advanced Practice C&WHP assessment. Once assessed, patients could be referred for ongoing physiotherapy, or urodynamic investigation from either clinic. Patients were able to be booked directly to the Medical Specialist clinic from the Advanced Practice C&WHP assessment clinic. Patients were able to be discharged from any of: Advanced Practice C&WHP Assessment, Medical Specialist Assessment, Medical Specialist Review; or their outpatient physiotherapy review appointment(s) if they had been referred from the Advanced Practice C&WHP Assessment and met set discharge criteria (Table 1).

Discharge criteria were designed to support safe discharge processes from the Advanced Practice C&WHP Assessment or outpatient physiotherapy services. Case presentation and discussion of patients with a Medical Specialist (Fellow or Consultant) was completed after initial patient assessment. If patient did not meet all discharge criteria, they were booked for Medical Specialist review and patients with red flags were booked an urgent Medical Specialist review.

Clinical education framework

Five competencies identified were:

- Urinalysis testing and analysis

- Post-void residual volume measurement
- Pelvic Organ Prolapse Quantification (POP-Q) measurement
- Indications for referral for Urodynamics
- Bimanual pelvic examination

Learning plans, self-assessment tools, clinical logs and supervisor assessment tools, were developed for these competencies in consultation with Medical, Nursing and Physiotherapy Clinical Specialists. These were designed for physiotherapists to be assessed against competency criteria by Medical Specialists or Clinic Nurse Consultants.

Four of these competencies: dipstick urinalysis, PVR bladder scanning, POP-Q measurement, and initiating referral for Urodynamic Studies, were approved by Medical Heads of Unit and multidisciplinary working groups at Monash Health and Barwon Health. Bimanual pelvic examination was not approved or implemented as an advanced practice physiotherapy competency at any site. The complete competency training packages are available from the Victorian DHHS website at https://www2.health.vic.gov.au/health-workforce/reform-and-innovation/advanced-practice-roles/advanced-practice-programs.

An Advanced Practice C&WHP clinic was unable to be established at the Royal Women's Hospital due to a concurrent hospital-wide review of gynaecology services that prevented implementation of other model-of-care changes.

Baseline data and Activity

There were 32 Advanced Practice C&WHP assessment clinics at Monash Health from December 2014 to December 2015, with 233 new patients assessed and 28 Did Not Attends (DNAs). The three most common primary presenting conditions of these patients were stress urinary incontinence (29%), stage 1-2 pelvic organ prolapse (28%) and urinary urgency and/or urge urinary incontinence (26%).

There were 12 Advanced Practice C&WHP clinics at Barwon Health from March to December 2015, with 35 patients seen and 25 DNAs. The three most common primary presenting conditions of these patients were stress urinary incontinence (37%), stage 1-2 pelvic organ prolapse (17%) and urinary urgency and/or urge urinary incontinence (17%).

Cost

At each site, the physiotherapist spent an average of 30-35 minutes with each patient, with 3-4 minutes presenting to the Medical Specialist. The support time given by administration and nursing staff was the same for all staff. At Monash Health the average time spent by junior medical staff was 60 minutes per patient, however 45 and 35 minutes were used as estimates for Fellows and Consultants respectively.

At Barwon Health, the Medical Specialist assessments took approximately 30 minutes.

At the time of the study the hourly rate for a grade 3 physiotherapist, rotating medical officer, medical registrar, fellow, and medical specialist (non-executive) ranged between $41.47-46.50, $45.65-60.52, $49.16-67.63, and $123.20-172.00 respectively. In Table 2 below, the costs per clinician were calculated for the time spent with patients, in consultation with nursing and medical staff, and by administration staff. This study showed that cost savings between $9 and $75 per patient were achieved by utilising advanced practice physiotherapists. As seen in the table, the wide range of cost savings is indicative of the wide salary range between junior and consultant medical staff, so the average cost savings per patient in any clinic would vary according to the mix of medical staff in that clinic.

At Monash Health average patient waiting time for the physiotherapist was 16 minutes, and 44 minutes for the medical clinics. At Barwon Health average patient waiting times was 5 minutes for the physiotherapist, and 65 minutes for the Medical Specialist.

Access to care

At Monash Health, there were 727 people on the waitlist for a Medical Specialist Assessment in May 2014, 609 in December 2015, and 243 in July 2016. The 233 patients seen in the Advanced Practice C&WHP assessment clinic were one component of a multi-faceted approach to increase patient access to care. In the process of identifying patients for the Advanced Practice C&WHP clinic from the waitlist, an extensive waitlist audit was undertaken, with many patients transferred to other clinics, including a newly developed Perineal Clinic (95 patients) or discharged due to inability to contact. A second Urogynaecology service also commenced at a second campus, accounting for 146 new patients.

At Barwon Health, there were 343 people on the waitlist for a Medical Specialist Assessment 3 in February 2015 and 328 in November 2015. The average wait for a Category 2

Assessment was 386 days in February 2015 and 123 days in November 2015. No other waitlist reduction strategies were implemented.

Initial outcome

Ninety percent of patients who attended the Monash Health Advanced Practice C&WHP assessment reported that they had not received previous conservative management. Sixty-nine percent completed an APFQ, 53% had urinalysis, 11% received referral for urodynamics, 5% had a PVR bladder scan and 3% uroflowmetry.

At Monash Health, the planned clinical management following the Advanced Practice C&WHP assessment was;

- conservative management (women's health physiotherapy or continence service) and specialist review - 35%
- conservative management only - 31%
- specialist review only - 20%
- discharged from the clinic - 13%
- conservative management and GP review - 1%

At Barwon Health, 100% of the patients attending the Advanced Practice C&WHP assessment reported they had not received previous conservative management. Sixty-three percent completed an APFQ, 86% had Urinalysis, and 86% had PVR bladder scan and uroflowmetry. No patients received a urodynamics referral.

At Barwon Health, the planned clinical management following the Advanced Practice C&WHP assessment clinic was;

- conservative management only - 83%
- conservative management and specialist review - 14%
- discharged from the clinic - 3%

All patients attending Advanced Practice C&WHP initial assessments were offered conservative management as a component of their care, in line with international and national guidelines.

Adverse events

There were no adverse events reported.

Satisfaction Surveys

At Monash Health, 86% patient-survey respondents rated their experience of the assessment ≥8/10, 98% were 'satisfied' or 'very satisfied' with their assessment, and 85% agreed or strongly agreed that their expectations were met. At Barwon Health, 84% of patient-survey respondents rated their assessment experience ≥8/10, 100% were 'satisfied' or 'very satisfied', and 95% 'agreed' or 'strongly agreed' that their expectations were met.

There were only five responses to the workforce survey, including physiotherapists, nursing staff and administration staff. No medical staff responded. All respondents strongly agreed that physiotherapist improved patient quality of care and agreed that the physiotherapy role would improve patient access to care and allow Medical Specialists to focus on more complex clients.

We were unable to survey referring doctors including GPs. In assessment letters to referring GPs it was clearly stated that the patient had been assessed in the advanced practice physiotherapy clinic to provide opportunity for the GP to request a further review by a Medical Specialist. No complaints were received from GPs in response to this.

Discussion

This study reports on the development, implementation and initial evaluation of a public health Advanced Practice C&WHP assessment model-of-care within multidisciplinary gynaecology clinics in Australia, demonstrating safety, cost and time-efficiency and high patient satisfaction of this role.

Development of specific inclusion, exclusion and discharge criteria for the Advanced Practice C&WHP Assessment Clinic was essential to patient safety, clinical effectiveness and communication. Regular team meetings including explicit review of criteria were necessary, in addition to standard orientation, to maintain understanding of the role and processes. The Advanced Practice C&WHP Assessment Clinics were co-located and run concurrently with the Medical Specialist Clinics to support inter-disciplinary communication and immediate referral between the different clinics. The range of percentages of patients whose plan included Medical Specialist review (55% (Monash Health), 14% (Barwon Health)) compares to Howard et al. [7] (33%). These differences may reflect potential differences in patient

cohorts and need to be considered by health services considering implementing advanced practice clinics.

Evidence-based guidelines recommend 3 months of conservative therapy prior to further investigations and surgical management. This indicates that some patients will still need Medical Specialist assessment and management. This occurred for some patients, while others were discharged from conservative management having achieved their treatment goals. Flow between outpatient conservative management services and Medical Specialist Clinics supports efficient transfer of patients to the Medical Specialist Clinic at any time in the patient journey. Data on longer-term outcomes, including re-referral, of patients assessed in the Advanced Practice C&WHP clinic and in the associated Medical Clinics was beyond the scope of this current project. Future research on long-term data is necessary to evaluate the overall impact on healthcare utilisation, including Medical Specialist and physiotherapy appointments for these patients.

This study did not include a control group as this was not a clinical trial. All clients eligible for the Advanced Practice C&WHP stream were triaged to this stream, unless they declined to see a physiotherapist. Medical Specialists would be likely to see more complex patients than the physiotherapists, which affects the time required for assessments and therefore the cost calculations.

Engagement with stakeholders across professions is essential for developing new multidisciplinary models of care. The development of competency topics, standards and learning packages with stakeholders from each health discipline facilitated engagement and ensured robust competency framework, content and processes. These were designed to meet the needs of both those undertaking the competencies, and also other health professionals within the team who needed confidence in the capabilities of the physiotherapists working in the advanced practice roles.

In an ideal setting, all patients should have access to conservative therapy prior to referral to a tertiary clinic. However, integrating Advanced Practice C&WHP into the triage and assessment process in the tertiary setting can provide access to conservative management prior to or instead of Medical Specialist assessment and treatment. Our results demonstrate high patient satisfaction, timely access to appointments and improved workforce integration. We have developed implemented, evaluated and sustained a safe and effective service supported by evidence-based guidelines and a competency-based training program.

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Inclusion Criteria	Exclusion Criteria	Discharge criteria
Stress urinary incontinence Urinary urgency and frequency Urgency urinary incontinence Mixed urinary incontinence Stage 1-2 pelvic organ prolapse Faecal incontinence	Visible haematuria Microscopic haematuria in women ≥50 years old Stage 3-4 Pelvic Organ Prolapse Rectal intussusception Suspected malignant mass Any pelvic mass Suspected genital fistula Underlying neurological conditions Patients re-referred after a previous episode of care	No red flags (haematuria, dysuria) No medical issues that could not be managed by their general practitioner/family doctor Not clinically appropriate for surgery Symptoms have resolved OR patient is able and desires to self-manage Patient agrees to discharge

Table 1: Inclusion, Exclusion and Discharge Criteria

	Medical Specialist Time (Cost)	Assessing Clinician (non-consultant) Time (Cost)	Nursing Staff Time (Cost)	Administration Staff Time (Cost)	Total
Monash Health					
Medical Specialist Assessment pathway (Consultant)					
Time	35 minutes	-	10 minutes	5 minutes	50 minutes
Cost	$72-100	-	$8	$2	$82-110
Medical Assessment Pathway (Fellow)					
Time	-	45 minutes	10 minutes	5 minutes	60 minutes
Cost	-	$45	$8	$2	$55
Medical Assessment Pathway (RMO or Registrar)					
Time	3 minutes	60 minutes	10 minutes	5 minutes	78 minutes
Cost	$3-9	$49-68	$8	$2	$62 -87
Advanced Practice Physiotherapist Assessment Pathway					
Time	3 minutes	35 minutes	10 minutes	5 minutes	53 minutes
Cost	$3-9	$24-27	$8	$2	$35-46
Total savings range					$9-75
Barwon Health					
Medical Specialist Assessment pathway					
Time	30 minutes	-	20 minutes	10 minutes	60 minutes
Cost	$62-86	-	$15	$4	$71-105
Advanced Practice Physiotherapist Assessment Pathway					
Time	4 minutes	30 minutes	20 minutes	10 minutes	64 minutes
Cost	$8-11	$21-23	$15	$4	$48-53

Total savings range					$18-57

Table 2: Cost calculations

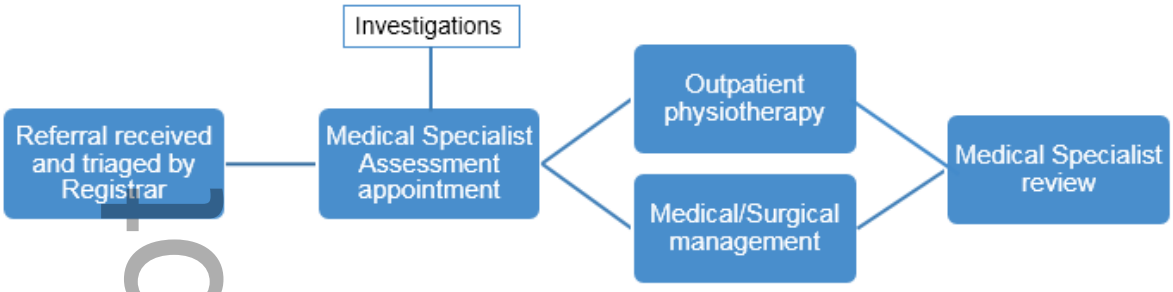

Figure 1: Usual Model of Care Patient Pathway

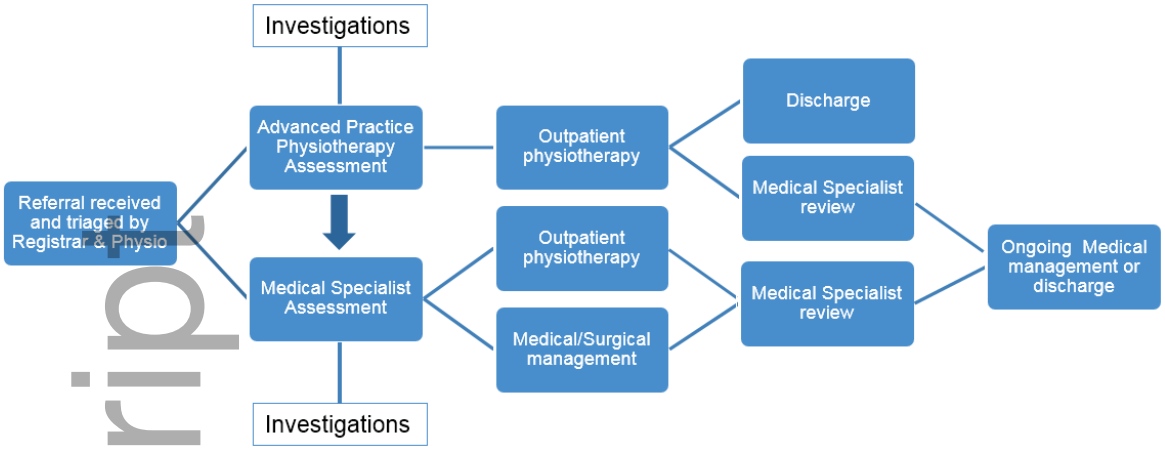

Figure 2: New Model of Care Patient Pathways