Improving medication management for Aboriginal and Torres Islander people by investigating the use of Home Medicines Review

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This thesis is submitted in fulfilment of the requirements for the Degree of Doctor of Philosophy, University of Sydney
Declaration

Statement of Authentication

This thesis is submitted to the University of Sydney in fulfilment of the requirements for the Degree of Doctor of Philosophy. The work presented in this thesis is, to the best of my knowledge and belief, original except as acknowledged in the text. I hereby declare that I have not submitted this material, either in full or part, for a degree at this or any other institution.

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Professor Barclay is an educational leader, health services researcher and systems reformer whose projects have improved services in remote and urban Australia and internationally. Much of her recent research has been rural, remote or Indigenous focused. She has been a Chief Investigator on 14 Group 1 grants, including a National Health and Medical Research Council (NHMRC) Centre of Clinical Excellence, and has led 9 of these. Lesley Barclay’s leadership is exemplified by her Council membership of the NHMRC for 6 years, and she served a similar time on the first Australian Council for Safety and Quality in Health Care.

Lesley Barclay is known for her mentoring and training. This is demonstrated by the fact that 12 of the over 40 research students she has supervised over the past decade have been appointed as associate or full professors in midwifery or maternal child health. Professor Barclay has written or edited two books in the past decade and published 59 refereed papers in the past 5 years.
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Shawn Wilson is Opaskwayak Cree from northern Manitoba, Canada, and currently lives on Bundjalung land on the east coast of Australia. His research has helped to communicate the theories underlying Indigenous research methodologies to diverse audiences. Through working with Indigenous people internationally, Shawn has applied Indigenist philosophy within the contexts of Indigenous education, health and counsellor education. In addition to further articulating Indigenous philosophies and research paradigms, his research focuses on the inter-related concepts of identity, health and healing, culture and wellbeing. His book, *Research is Ceremony: Indigenous Research Methods*, is often cited for bridging understanding between western academia and traditional Indigenous knowledges.
Financial support and grants

This PhD was undertaken in a part-time capacity, whilst in full-time employment. No scholarship was sought or obtained.

Some funding for travel and expenses for Phases 1 and 2 of this project was granted from the Australian Department of Health and Ageing, through the Small Projects Grants Scheme of the Fourth Community Pharmacy Agreement. Although the Small Projects Grant Scheme was managed by the Pharmacy Guild of Australia, the Guild had no influence on the project and its provision of funding does not mean that it endorses the findings or conclusions in this thesis.

Some funding from a Sanofi Pamela Nieman Grant from the Society of Hospital Pharmacists of Australia assisted with survey costs, pharmacist accreditation list and a survey participation incentive (iPad) in Phase 3 of the project.

Funding from the University Centre of Rural Health’s Research and Development fund assisted my travel to conferences where some of my research findings were presented.
Acknowledgements

Sincere thanks to Lesley Barclay, my primary supervisor, who has guided, supported, nurtured and cajoled me through this lengthy PhD journey. Her wisdom, patience and commitment have been unfailing. Her belief in me and my work has encouraged me to persevere.

Thanks also to Shawn Wilson for his Indigenous insights and research expertise, and to my many supportive work colleagues who have always been so encouraging. Thanks to Darlene Rotumah for her role in explaining historical and cultural perspectives. Thanks to Professor Lesley White, who started me on the Home Medicines Review (HMR) research path, and to Dr Lisa Pont for her support and friendship.

The many Aboriginal and Torres Strait Islander people who contributed to this research are the real heroes. The advisory committee members who so expertly guided me and the Aboriginal Health Service staff who assisted with organising and facilitating focus groups, deserve special thanks. Without their assistance this research would not have been possible.

The enthusiasm and generosity of spirit of focus group participants were astounding. Their humour and willingness to share were very humbling. They taught me so much, both about their lives and mine. Thanks also to the many Aboriginal Health Service (AHS) staff who contributed their knowledge and found time in their busy schedules to be interviewed, and to the many accredited pharmacists who made the effort to complete the questionnaire.

Many thanks to my family and friends for their love and encouragement.
Collection of output for examination

I formulated and initiated the research questions answered by this PhD thesis. I gained Aboriginal Health Service consent and ethics approvals. I conducted all focus groups and interviews. I designed the pharmacist survey. I analysed all data and interpreted all results.

I was the sole author of Chapters 1, 2 and 7. I am the first author on all four publications included in Chapters 3-6. As such, I was responsible for deciding the topics and aims, undertaking the analyses, doing 90% of the writing, and finalising and submitting the papers to peer-reviewed journals. My primary supervisor is the co-author on all papers.

All co-authors have approved the final versions of the papers included in this thesis. The descriptions of their contributions and their agreement to include papers in my thesis are provided in Appendix A.
Improving medication management for Aboriginal and Torres Islander people by investigating the use of Home Medicines Reviews

Abstract

Background

The Australian Home Medicines Review (HMR) has been found to be an important tool to raise awareness of medication safety, reduce adverse events and improve medication adherence. The HMR program consists of pharmacists reviewing patients’ medicines at their homes and reporting findings to their general practitioners (GPs) to optimise medicine management.

Under-use of medicines contributes to poorer control of chronic disease states, higher hospital admissions and increased morbidity and mortality for Aboriginal and Torres Strait Islander people. Aboriginal and Torres Strait Islander people are “under-serviced” by the HMR program and are the most likely of all Australians to miss out on HMRs despite their high burden of chronic disease and high rates of hospitalisation due to medication misadventure.

The 2008 Campbell report commissioned by the Australian Government called for the urgent introduction of a more culturally appropriate model of HMRs and for expanded HMR services to Aboriginal Australians. To date these recommendation have not been implemented.
Very little research has been conducted in the area of medication management and cognitive pharmacy services for Aboriginal and Torres Strait Islander people or the role of pharmacists in Aboriginal health.

**Goal**

To ascertain the usefulness of medication review and inform medication review program design for Aboriginal and Torres Strait Islander people by understanding barriers and facilitators to utilisation of the HMR program from patient, pharmacist and Aboriginal Health Service provider perspectives.

**Methods**

This was a descriptive, qualitative study. Aboriginal Health Services of various sizes and locations were chosen as the sites for recruitment of patients and providers.

Focus groups were conducted to collect patients’ views. Eighteen semi-structured focus groups with 102 Aboriginal and Torres Strait participants were conducted at 11 AHSs. Participants were Aboriginal and Torres Strait Islander patients, taking multiple medicines, who attended AHSs and who spoke English.

Semi-structured interviews were used to explore perceptions of AHS health professional staff to the HMR program. Thirty-one semi-structured interviews were conducted with health professionals at 11 AHSs. Fourteen Aboriginal Health Workers (AHWs), five nurses, one manager and 11 GPs participated.

Focus groups and interviews were recorded, de-identified and transcribed. Transcripts were coded and analysed thematically.
A cross-sectional survey was used to gather demographic, qualitative and quantitative data from Australian pharmacists (n=187) accredited to undertake HMR. The survey consisted of 39 items which included closed, open-ended and Likert scale questions. Data were extracted from the online survey tool and analysed. Descriptive statistics were used to explore the quantitative data, whilst qualitative data were thematically analysed and coded for emergent themes.

**Results**

Both patients and health professionals viewed a culturally appropriate medication review as a very useful tool. They stated that because the medication review engaged patients in discussions about their medications and empowered patients with knowledge and medication choices, they would be likely to improve medication adherence.

The interviews with AHS staff identified a number of barriers to provision of HMRs, specific to Aboriginal and Torres Strait Islander clients. These included paternalistic attitudes of some health professionals to their clients, protection by GPs of their GP-client relationships, lack of pharmacist relationships with AHS staff and the need for more culturally responsive pharmacists.

Changes to the HMR model to make it more effective and culturally appropriate for Aboriginal and Torres Strait Islander people were recommended. These changes included the need for the HMR interview to be organised by the AHS and occur at a location of the patient’s choice, the inclusion of AHWs in HMR processes and the need for cultural training for pharmacists.
Aboriginal Health Service providers reported that improved relationships between GPs and pharmacists, between pharmacists and the AHS, and between pharmacists and Aboriginal and Torres Strait patients were required to enable effective communication and integrated care.

The accredited pharmacists who participated in the survey were keen to deliver more services to AHSs. However, they needed assistance and training to broker relationships and overcome the barriers which were inhibiting them from working more closely with AHSs.

**Conclusion**

Current HMR rules impede rather than facilitate HMRs for Aboriginal and Torres Strait Islander people. Burdensome program rules and funding structures need to be revised.

Many of the barriers to HMR delivery to Aboriginal and Torres Strait Islander people could be addressed by locating pharmacists within AHSs. The AHS pharmacist would be culturally mentored and would build strong relationships with AHS health professionals and clients, resulting in more effective communication and positive health outcomes. An AHS pharmacist would be able to provide the tiered, flexible and regular medication reviews needed to increase patients’ knowledge of medicines and empower patients to manage their medicines. The AHS pharmacist would integrate and manage medication management programs at a systems level and liaise closely with all care providers, including community pharmacists.
PhD thesis outline

I present this PhD thesis for examination as a thesis containing published work. It contains four publications, as well as additional unpublished text. The thesis is structured as follows:

Chapter 1: Introduction - Unpublished text

- literature review
- situating the study
- aims and objectives

Chapter 2: Methodology and methods - Unpublished text

Rationale and overview of:

- methodology
- study design – 3 phases
- setting & sample
- data collection & analysis

Chapter 3: Aboriginal and Torres Strait Islander people’s experiences with medicines – patient data paper


The Australian Journal of Rural Health was chosen to maximise readership by multi-disciplinary practitioners working with Aboriginal and Torres Strait Islander people. Impact Factor 0.764 (Word limit = 2000)

**Chapter 4:** Aboriginal and Torres Strait Islander perspectives of the Home Medicines Review program – patient data paper

- **Publication 2:** Swain L, Barclay L. An exploration of Aboriginal and Torres Strait Islander perspectives of Home Medicines Review. Rural and Remote Health 15:3009 (Online) 2015.
  

Rural and Remote Health is an online journal with a targeted rural and remote researcher and practitioner audience. The larger word limit allowed a more detailed explanation of research methods. Impact Factor 0.783 (Word limit = 5000)

**Chapter 5:** Perspectives of Aboriginal Health Service health professionals on Home Medicines Review – service provider data paper

- **Publication 4:** Swain L, Barclay L. “Medication reviews are useful, but the model needs to be changed”: perspectives of Aboriginal Health Service health professionals on Home Medicines Review. BMC Health Services Research. 2015;15:366. doi:10.1186/s12913-015-1029-3.
  
BMC Health Services Research is an open access, peer-reviewed journal that publishes articles on all aspects of health services research. The open access allows this publication to be highly visible to the wide range of global people who may find this article of interest. The unlimited word count allowed full exploration of all service provider issues. Impact factor 1.606 (Unlimited)

Chapter 6: Pharmacists and Aboriginal Health – pharmacist data paper


The International Journal of Clinical Pharmacy includes research on medication management, pharmacy services and pharmaceutical care. The attitudes of pharmacists and the delivery of medication review to Indigenous people have relevance for all pharmacists who work with minority population groups and design medication management programs. Impact Factor 1.339 (Word limit = 3000)

Chapter 7: Discussion and conclusions - Unpublished text

Appendices
Publications and presentations

Peer-reviewed publications


Swain L, Barclay L. An exploration of Aboriginal and Torres Strait Islander perspectives of Home Medicines Review. Rural and Remote Health 15:3009 (Online) 2015.

Swain L, Barclay L. ”Medication reviews are useful, but the model needs to be changed”: perspectives of Aboriginal Health Service health professionals on Home Medicines Review. BMC Health Services Research. 2015;15:366.

Conference presentations


Swain L. Let’s listen! Redesigning medication programs to suit the needs of Aboriginal and Torres Strait Islander people. Services for Australian Rural and Remote Allied Health (SARRAH) conference. Port Lincoln, South Australia, 28 October 2016.

Conference posters

Prologue

In 2001, after 20 years as a community pharmacist and industry consultant in Sydney, I moved to Bathurst, a regional centre in the Central West of New South Wales (NSW). There in the pharmacy I was suddenly aware of a higher percentage of Aboriginal clients. Although I treated everyone with compassion and respect I was aware that my engagement with these clients should have been better. I had received no training and had little understanding. I found that there was not much literature related to Aboriginal people and medicines, but I started reading, asking and trying harder.

Whilst in the Central West I also started working at the new pharmacy school at the University of Sydney’s Orange campus (now Charles Sturt University). My role in this new degree was to develop and run a unit of study called Rural Health and Pharmacy. As part of this unit of study and under the mentorship of Dr Susan Taylor, I invited Wiradjuri people from the local AHS to speak to the students. We took the students on a bus trip to the Condobolin AHS and the Murrin Bridge community, and so began some cultural understanding.

We tasked the pharmacy students with designing resources which pharmacists could use with Aboriginal clients. The students presented their resources to the local Aboriginal people. The response was overwhelming. We heard stories about how many Aboriginal people found pharmacy environments uncomfortable, how they struggled to understand their medicines and how there was a great need for culturally appropriate resources.

In 2008 I learned of a new Aboriginal pharmacy project, Quality Use of Medicines Maximised for Aboriginal and Torres Strait Islander People (QUMAX). I phoned the Pharmacy Guild and
asked to be employed as a QUMAX Support Pharmacist. In this role I assisted in implementation of the QUMAX program into eight AHSs across northern NSW. Part of the QUMAX Support Pharmacist’s role was to broker relationships between the AHSs and community pharmacies. The divide between Aboriginal Health Services and pharmacists in most cases was great, but the program began to build bridges. Some AHSs tried to implement HMR, with varying degrees of success. Unfortunately, funding for QUMAX Support Pharmacists was ceased in 2010.

As my relationships with AHSs grew, a number of pharmacy researchers asked me to assist to organise the occasional focus group with Aboriginal people for their projects. I felt such small inclusions of Aboriginal opinion, whilst usually well-meaning, were really tokenistic. I was aware that every month my Aboriginal friends and colleagues attended multiple funerals for their family and community members. If we were going to conduct research it needed to make a difference – but how?

As an accredited HMR pharmacist, when conducting HMR interviews I had experienced the empowerment of engaging one on one in a person’s home. I believed that these HMR interviews could truly assist with understanding of medicines and help to unravel the complexities of medicines, prescribing, patient self-management and the healthcare system, both for patients and GPs. I realised that HMRs might be useful for Aboriginal people but had not received any referrals for HMRs for Aboriginal people. Why?

I commenced my PhD studies in 2009 in a quest to find a way to make HMRs useful and accessible for Aboriginal and Torres Strait Islander people. Initially, I called the study “Strategies for increasing HMR uptake in Aboriginal and Torres Strait Islander communities”. I soon realised that as well as being a cumbersome title, it was almost dictatorial. I realised I
must first learn whether HMRs were considered useful by Aboriginal and Torres Strait Islander people, not just by me. No one had done a national study asking Aboriginal people their opinions of taking medicines. And so began my journey. Many times along the journey I have questioned who was benefiting more – Aboriginal people or me? Only the hope that this work might be useful has kept me on track to finish it.

On this journey not only have I learnt about research; I have learnt so much about the humour, resilience and generosity of Aboriginal people, and I have also learnt much about myself. Many people have supported and assisted me on my journey, and for this I will always be grateful.
# Abbreviations and glossary

<table>
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<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>Aboriginal</td>
<td>Aboriginal and Torres Strait Islander</td>
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<tr>
<td>ACCHS</td>
<td>Aboriginal Community Controlled Health Services</td>
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<tr>
<td>ACCHO</td>
<td>Aboriginal Community Controlled Health Organisation</td>
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<tr>
<td>Accredited</td>
<td>A pharmacist accredited to conduct HMRs</td>
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<tr>
<td>AHS</td>
<td>Aboriginal Health Service – refers to both community-controlled and Government-managed Aboriginal medical services</td>
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<td>AHSRA</td>
<td>Aboriginal Health Service Remote Access scheme</td>
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<tr>
<td>AHW</td>
<td>Aboriginal Health Worker – refers to all Aboriginal and Torres Strait Islander health workers and health practitioners, both qualified and unqualified</td>
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<tr>
<td>CALD</td>
<td>Culturally and Linguistically Diverse</td>
</tr>
<tr>
<td>CCSS</td>
<td>Care Coordination and Supplementary Services</td>
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<tr>
<td>CHF</td>
<td>Chronic heart failure</td>
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<tr>
<td>CHF</td>
<td>Consumer Health Forum</td>
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<td>CPA</td>
<td>Community Pharmacy Agreement – between the Department of Health and the Pharmacy Guild of Australia</td>
</tr>
<tr>
<td></td>
<td>4CPA: Fourth Community Pharmacy Agreement 2005-2010</td>
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5CPA: Fifth Community Pharmacy Agreement 2010-2015

6CPA: Sixth Community Pharmacy Agreement 2015-2020

CTG  Closing the Gap Pharmaceutical Benefits Scheme Co-payment

DAA  Dose Administration Aids

GP   General Practitioner

HMR  Home Medicines Review

IAHA Indigenous Allied Health Australia

Indigenous  Aboriginal and Torres Strait Islander people

MBS  Medical Benefits Schedule

MedsCheck  MedsCheck and Diabetes MedsCheck medication usage reviews

MUR  Medicines Use Review

NACCHO  National Aboriginal Community Controlled Health Organisation

NHMRC  National Health and Medical Research Council

NMS  National Medicines Symposium

NSW  New South Wales

NT  Northern Territory

NZ   New Zealand
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>PBS</td>
<td>Pharmaceutical Benefits Scheme</td>
</tr>
<tr>
<td>PHC</td>
<td>Primary health care</td>
</tr>
<tr>
<td>PGA</td>
<td>The Pharmacy Guild of Australia</td>
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<tr>
<td>PSA</td>
<td>Pharmaceutical Society of Australia</td>
</tr>
<tr>
<td>QUM</td>
<td>Quality Use of Medicines</td>
</tr>
<tr>
<td>QUMAX</td>
<td>Quality Use of Medicines Maximised for Aboriginal and Torres Strait Islander People</td>
</tr>
<tr>
<td>QUMSP</td>
<td>Quality Use of Medicines Support Person</td>
</tr>
<tr>
<td>RAAHS</td>
<td>Remote Area Aboriginal Health Service</td>
</tr>
<tr>
<td>RMMR</td>
<td>Residential Medication Management Review</td>
</tr>
<tr>
<td>S100</td>
<td>Section 100 – in this thesis the term refers to the Remote Area Aboriginal Health Service medication access scheme</td>
</tr>
<tr>
<td>SMA</td>
<td>Shared medical appointment</td>
</tr>
<tr>
<td>UK</td>
<td>United Kingdom</td>
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<tr>
<td>USA</td>
<td>United States of America</td>
</tr>
<tr>
<td>UTS</td>
<td>University of Technology Sydney</td>
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<tr>
<td>VALMER</td>
<td>The Economic Value of Home Medicines Review</td>
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Chapter 1

Introduction

1.1 Overview

In this opening chapter I explain the rationale for this thesis. The study aims and research questions are stated.

The health of Aboriginal and Torres Strait Islander people and Aboriginal and Torres Strait Islander people’s experiences of primary healthcare services and pharmacies are outlined. In particular, patients’ challenges regarding medicines use are examined, as are the roles of health professionals in the delivery of medicines information. Literature about communication between health professionals and clients is reviewed, and concepts of cultural competency are explored (1).

Medication management, the role of pharmacists and medication review are discussed to establish the usefulness of the Home Medicines Review (HMR) program in the Australian setting. The chapter explains the HMR model, and reviews the literature which addresses the benefits and challenges of HMR.

This study explores whether medication review may improve Aboriginal and Torres Strait Islander people’s medication knowledge and medication management. As this study addresses medication management, rather than medicines supply and access, the literature on medicines supply is not explored.
The limited literature pertaining to pharmacists’ roles in assisting Aboriginal and Torres Strait Islander people has been used to situate the study.

This chapter concludes with a summary of how this study was conducted and outlines the three phases of the study.

1.2 Why conduct this study?

Aboriginal and Torres Strait Islander people are often prescribed multiple medicines to manage their co-morbidities and, like all population groups trying to manage multiple medicines, are at high risk of medication misadventure and low medication adherence (2, 3).

There is extensive literature discussing Aboriginal and Torres Strait Islander health and the social, economic, emotional and physical determinants of Aboriginal and Torres Strait Islander health. However, very little research has been conducted into Aboriginal and Torres Strait Islander patients’ perceptions, experience and understanding of medicines. Similarly, little is known about the role of pharmacists in Aboriginal health.

Whilst there has been some evaluation of medicine access programs for Aboriginal and Torres Strait Islander people, there is very little comprehensive research examining medication management for Aboriginal people. Dr Alex Brown, a remote practitioner and researcher, laments the lack of Aboriginal-specific research on quality use of medicines (4).

Apart from Government-commissioned evaluations of specific Aboriginal medicine access schemes (5-8), there is only a handful of researchers and clinicians who have significantly contributed to the literature on medication usage by Aboriginal and Torres Strait Islander
people in Australia. Some of the main research groups discussed in this chapter are introduced here. De Crespigny, Kowanko, Emden and colleagues examined the medication experiences of Aboriginal clients in South Australia (9-11). Taylor and colleagues from the pharmacy school at the University of Sydney explored the role of Aboriginal Health Workers (AHWs) and pharmacists in assisting Aboriginal clients with medications and education in NSW (12, 13). Larkin, a pharmacist, and Murray, a GP, when both at the Kimberley Aboriginal medical service, wrote about their experiences in assisting remote Aboriginal clients with medications (14). Davidson, Abbott and colleagues, academics at the University of Western Sydney and medical practitioners at Western Sydney Aboriginal Health Service (AHS), used the literature to classify barriers to medication adherence for Aboriginal and Torres Strait Islander people (15). Dr Alex Brown, a former Northern Territory (NT) clinician, on behalf of the Heart Foundation Pharmaceutical Roundtable, undertook 42 interviews with individuals who deliver health services to Aboriginal people to write a report on the appropriate use of medicines among Indigenous Australians (4). Sanburg, a pharmacist within the Pika Wiya Aboriginal Service, evaluated her HMR practices within Pika Wiya AHS in South Australia (16).

The Australian HMR is a professional pharmacy service managed by the Pharmacy Guild of Australia (17). It aims to achieve safe, effective and appropriate use of medicines and to improve the health outcomes and knowledge of medicines in participating patients. Studies show that HMRs can improve medication safety and reduce adverse events for high-risk patients (18-20). The HMRs can result in improved medication understanding by patients, identify untreated conditions and resolve issues related to medication under-use (18, 21, 22).
The 2008 HMR program evaluation report (23), commissioned by the Department of Health, identified that Aboriginal and Torres Strait Islander people, despite their high burden of chronic disease, were the most likely of all Australians to miss out on an HMR and that the HMR current model was not appropriate for Aboriginal and Torres Strait Islander people.

Whilst it has been reported that the current model was inappropriate for Aboriginal and Torres Strait Islander people (23, 24), it was not documented why the model was inappropriate, and little was understood about what an appropriate model should look like.

This study was undertaken to inform the future design of medication review programs for Aboriginal and Torres Strait Islander people. The objective was to investigate how pharmacists can better assist Aboriginal and Torres Strait Islander people with their medication management and so improve health outcomes in this population.

1.3 Aims

- To ascertain the usefulness of medication review and inform medication review program design for Aboriginal and Torres Strait Islander people by understanding barriers and facilitators to utilisation of the HMR program from patient, pharmacist and AHS provider perspectives.

- To investigate how medication management programs, such as HMR, could be better utilised to address the needs of Aboriginal and Torres Strait Islander people.
1.4 What this study adds

This is the first study to analyse facilitators and barriers to uptake of the HMR program by Aboriginal and Torres Strait Islander people across multiple settings. This study was conducted in urban, rural and remote settings across 12 sites in four states and one territory.

This study has analysed the perspectives of patients, health professionals and pharmacists. Findings from this study will be used to inform other projects, as described in the Epilogue of this thesis.

1.5 Aboriginal and Torres Strait Islander health

Despite a higher burden of acute infections and chronic diseases, under-use of medicines is evident in Australian Aboriginal populations (25, 26). In 2010-11 the Pharmaceutical Benefits Scheme (PBS) expenditure for Aboriginal people was about 80% of expenditure for non-Indigenous Australians, indicating increasing access, but continuing under-utilisation of medicines by Aboriginal and Torres Strait Islander people (25, 27, 28). Under-use of medicines is likely to contribute to poorer control of chronic disease states, higher hospital admissions and increased morbidity and mortality (29).

Between July 2010 and June 2012, Aboriginal and Torres Strait Islander people were hospitalised for potentially preventable conditions nearly four times as often as non-Indigenous Australians (28). Many of these hospital admissions for potentially preventable conditions might have been prevented through improved access to primary care and improved medication management (30).
The health of Aboriginal people in Australia has been described as “third world health in a first world nation” (31). Many Australian Aboriginal and Torres Strait Islander people have a higher mortality rate, higher burden of disease, more hospitalisations, higher levels of trauma and grief, and more social disadvantage than other Australians (32). The health inequalities between Aboriginal and Torres Strait Islander people and non-Indigenous Australians are particularly apparent in chronic diseases, communicable diseases, infant health, mental health and life expectancy (1).

Compared with non-Indigenous Australians, Aboriginal and Torres Strait Islander people are three times more likely to die of cardiovascular disease, ten times more likely to die of diabetes and 30 times more likely to die from end-stage renal disease (33). Aboriginal and Torres Strait Islander people are also twice as likely to suffer asthma or other respiratory conditions and also report high or very high levels of psychological distress (28, 34, 35). Rates of mortality from cancer are markedly higher for Indigenous compared with non-Indigenous Australians (35). Tropical and developing-country diseases such as tuberculosis, rheumatic fever, strongyloides, trachoma and hepatitis B and C are also more prevalent in Aboriginal and Torres Strait Islander people than in non-Indigenous Australians (33). Over two-thirds of adult Aboriginal and Torres Strait Islander people have at least one long-term condition (28).

There is a clear relationship between the social disadvantages experienced by Aboriginal and Torres Strait Islander people and their current health status. These social disadvantages directly relate to dispossession, are characterised by poverty and powerlessness, and are reflected in education, employment, income and lack of empowerment to make health
choices (36). Racism and discrimination, both individual and organisational, are known to be directly associated with poorer health outcomes (37).

Ill health for Aboriginal and Torres Strait Islander people is more than physical illness; it is a manifestation of spiritual and emotional alienation from land, family and culture (38). Aboriginal and Torres Strait Islander health is defined as not just the physical wellbeing of an individual, but the social, emotional and cultural wellbeing of the whole community (39).

Pharmacists and other health professionals need to be cognisant that their own views of health may differ from that of their Aboriginal and Torres Strait Islander patients.

A “wellbeing framework” for Aboriginal and Torres Strait Islander people living with chronic disease has been outlined by the Kanyini Vascular Collaboration (40). It states that wellbeing is supported by upholding people’s identities in connection to culture, spirituality, families, community and country. Wellbeing is supported by culturally safe primary healthcare services which have appropriately skilled and culturally competent healthcare teams providing best practice holistic care (40).

In the Australian healthcare system, there is often a power imbalance between health professionals and their patients. Factors such as language differences and patients’ lack of education and low socio-economic status may further contribute to this imbalance (41, 42). The power imbalance, together with the disempowerment that has resulted from colonisation, disconnection from land, racism and trans-generational trauma, negatively impacts health and how Aboriginal and Torres Strait Islander people access healthcare and participate in clinical decision-making, including medication usage (43).
King, a researcher in Canadian Indigenous health inequalities, argues that the means by which people are enabled to control their destinies is crucial to self-esteem and health (44). Similarly, the Whitehall studies in the United Kingdom (UK) showed that perceptions of lack of control of one’s life also resulted in poorer health outcomes (45). Fisher, a Northern Territory physician, found that better self-esteem, together with better communication by the health professional and better understanding by the patient, improved a patient’s compliance with treatment options and translated to better health outcomes (46).

1.5.1 Primary care for Aboriginal and Torres Strait Islander people

Aboriginal people’s rate of access to primary health services is increasing, but remains disproportional to Aboriginal people’s poorer health and higher burden of chronic disease (28). Whilst primary healthcare in Australia is changing to meet the challenges of an ageing population and the increasing prevalence of chronic disease, challenges remain for Aboriginal and Torres Strait Islander people in accessing healthcare and effective management of chronic disease (47).

Factors which contribute to Aboriginal and Torres Strait Islander patients not accessing primary health services, including pharmacies, may include transport and distance to services, cost, language, racism, cultural barriers and family responsibilities (48). A number of psychosocial reasons, such as fear of death, fatalism, shame, communication difficulties, lack of Indigenous staff, preference for traditional healers, and spiritual issues, have also been identified as barriers to Aboriginal people’s accessing health services (35).

Health systems and service providers can perpetuate Aboriginal healthcare disparities through their attitudes and practices. Many mainstream health services have not been
demonstrated to be culturally competent or culturally safe for Aboriginal people, and systems and services do not allow for long complex consultations and multi-disciplinary care (42, 49).

Aboriginal Health Services have been established to address the need for more accessible and culturally safe primary care services for Aboriginal and Torres Strait Islander people. There are two main types of AHS: those that are government-operated and those that are community controlled. Aboriginal Community Controlled Health Organisations (ACCHOs) were established in the 1970s in response to experiences of racism in the health system and the significant financial, cultural and social barriers to healthcare access experienced by Aboriginal and Torres Strait Islander people (1, 50).

Aboriginal Community Controlled Health Organisations are operated by local Aboriginal and Torres Strait Islander communities to deliver holistic, comprehensive and culturally appropriate healthcare to their communities. The community controls the service through a locally elected board of management (39.) The philosophy of community control and self-determination are reflected in community-initiated, community-driven and community-owned health services. Community empowerment is a vital contributor to health equality (37). Whilst there are now some 170 AHSs, they do not have the reach and capacity to meet the needs of all Aboriginal and Torres Strait Islander people. The balance of services is provided by mainstream health systems, such as hospitals and private general practice.

Aboriginal Health Workers (AHWs) play a vital role in the primary health workforce and in assisting to deliver holistic care. The AHWs are pivotal members of AHS staff as they perform a broad range of clinical and social services whilst helping to ensure cultural safety
and effective communication between Aboriginal and Torres Strait Islander patients and healthcare professionals (9, 51).

The duties performed by AHWs will depend on their qualifications and the AHS needs. Whilst many employed AHWs are not registered practitioners, they still play a vital role in the care of Aboriginal and Torres Strait Islander people. In this study the term, Aboriginal Health Worker, is inclusive of both qualified and non-qualified AHWs.

The AHWs can assist people to navigate the healthcare system and they usually understand community needs and its complexities. Many AHWs play an important role in delivering and administering medicines, although some AHWs lack medication training (52) (9, 10). The extent to which AHWs and registered nurses have legal coverage for dispensing of medicines is dependent the setting, and on state and territory legislation (14). Brown, an Aboriginal doctor and researcher, commented that there was a need for improved systems of support for nursing and AHW staff within AHSs. He found the lack of Quality Use of Medicines (QUM) training in nurse and AHW courses, and the lack of access to pharmacists, particularly in remote settings, were contributors to sub-optimal medicines management within AHSs (4).

Kowanko et al in their evaluation of chronic condition management at three AHSs in South Australia identified some of the system enablers to chronic condition management. These included access to culturally appropriate and affordable health services, effective clinical information management systems, co-ordination of team care arrangements, and facilitation of peer support (53). It was also identified that training staff in chronic disease management, making time for health staff to develop trust and rapport with clients, and
working closely with clients to set achievable goals, were all enablers for better management of chronic conditions (53).

The Sentinel Site evaluation conducted by the Menzies School of Health Research for the Australian Government found that systems within GP practices and AHSs needed to be strengthened, simplified and integrated. Integrated systems enable increased implementation of Aboriginal chronic care initiatives, such as Indigenous adult health assessments and care plans (54). Complexity of patient conditions and time-poor clinicians have been cited as barriers to comprehensive management of chronic disease. To address these barriers, some Australian GP practices and AHSs are trialling new methods of care, such as group or shared medical appointments (SMAs) (55).

Shared medical appointments were developed in the United States of America (USA) in 1996 to improve access to care, utilise peer support, reduce costs and improve patient satisfaction in the management of chronic disease (56). Effective chronic disease management often requires extensive information to be repeated regularly by the health practitioner. This repetition of key points can occur in SMAs. It is difficult for GPs to deliver all the information needed to complex patients with multiple co-morbidities in a time-limited, one-on-one appointment, and often little or no discussion occurs about medications (57). It appears that SMAs or similar group gatherings may provide useful opportunities for discussions about health and medications.

Evaluations of SMAs in USA, Canada and The Netherlands indicated that they are an effective adjunct to individual appointments in the health management of chronic disease (56). An SMA allows facilitated peer interaction and encourages patient self-management and empowerment (56). The SMAs have been found to be particularly beneficial for
patients with low health literacy (57). Whilst SMAs are fairly new to Australia, anecdotally they appear to be well-received by Aboriginal and Torres Strait Islander participants, and “yarning with others could help the healing process” (58).

Complex health systems, together with poor communication from health providers, make it difficult for many patients to understand and manage their care. This can be exacerbated for Aboriginal patients if they have high levels of chronic disease and have to access services from a variety of providers including doctors, nurses, AHWs and pharmacists and especially if these providers are not culturally sensitive (59).

Many Aboriginal patients have reported that they find community pharmacies culturally alienating and were embarrassed or ashamed to ask pharmacists for medication information in environments which lacked privacy (12, 15). Strategies for making the environment more welcoming and comfortable, such as displaying Aboriginal paintings or signage, and making available Aboriginal-specific information leaflets, have been utilised in some GP practices, and need to be adopted by community pharmacies (60, 61). Pharmacists also need to engage with local communities to communicate the benefits of the services they offer as many Aboriginal and Torres Strait Islander people have little understanding of the role of the pharmacist (62).

Whilst Taylor and Hamrosi’s research found that community pharmacists were generally the first persons seen when seeking medical advice due to ease of access (61), this is contrary to the findings of de Crespigney et al who found that few of their study participants viewed the pharmacist as a legitimate first source of medication information. The majority of Aboriginal women in their study viewed their GPs as the primary and most legitimate source of medication information and advice (11).
Evidence has demonstrated that employment of Indigenous staff within a health service increases the access of the health service for other Indigenous people (1, 63). There are very few Aboriginal pharmacists or pharmacy assistants. The 2014 pharmacy workforce report indicated that only 0.2% of pharmacists, or 36 out of over 21,000, reported Aboriginal and Torres Strait Islander status in 2012 (64). Hamrosi’s research suggested employment of, or increased collaboration with, AHWs in community pharmacies to coordinate health education programs, improve access, and educate the Aboriginal community about the role of the pharmacist (12).

Culturally responsive pharmacists could play an important role in assisting Aboriginal and Torres Strait Islander patients to navigate the complex health system and primary care services, as well as the program requirements for the myriad of Aboriginal and Torres Strait Islander medicines programs (62).

In addition to training more Aboriginal healthcare providers, recommendations to improve care for Aboriginal and Torres Strait Islander people include cross-cultural training for health professionals (41, 52, 65-67).

1.6 Cultural competence and cultural safety

Health providers are often unaware their behaviours are racist or exclusionary (68-71). The evaluations of the QUMAX program and the Sentinel sites reported that Aboriginal people found pharmacists were at times racist and culturally insensitive (8, 54). In Australia, cultural differences between services providers and Aboriginal and Torres Strait Islander people has been referred to as the “cultural chasm” (72).
A reduction in racist attitudes and narrowing of the cultural chasm can sometimes be achieved by education and community immersion (73). For care of Aboriginal patients to become more effective, cultural safety in primary health services and pharmacies needs to be improved. Health professionals, including pharmacists, need to understand cultural difference and become culturally responsive health providers (68, 74).

Cultural competency is a key strategy for improving healthcare access and the quality of care received (1). Developing and imbedding cultural competence in health services and pharmacies requires a sustained focus on knowledge, awareness, behaviour, skills and attitudes at all levels of the services (1). Beach et al showed that cultural awareness training for healthcare professionals improves their attitudes and skills, as well as impacting on patient satisfaction (75). The AHWs in Hamrosi’s study recommended that pharmacists and pharmacy staff undertake cultural awareness training (12).

Cultural awareness training by itself is not usually enough to achieve culturally competent health professionals, but is the entry level to achieve knowledge, as shown in Figure 1.1 below (1). Cultural competency education is not a definitive solution, but should be used in conjunction with policies in which cultural competency principles are imbedded, and so may enhance understanding and the effectiveness of health professionals’ intercultural interactions (1). Pharmacists need to be taught to reflect on their values and beliefs and how they inform their practice (68). Cultural Immersion experiences for pharmacy students are recommended. Cultural immersion has been shown to encourage self-reflection on attitudes towards cultural differences and to provide opportunities to build relationships and work with community members (76).
Davidson et al’s research on improving medication uptake for Aboriginal patients also suggested cultural competence training for clinicians. Other recommendations included increasing the capacity for AHWs to engage in healthcare teams and empowering patients to interact with health professionals, in particular to increase engagement with community pharmacists (15).

Kowanko et al found that a recurrent theme throughout their chronic condition management project was the importance of culturally safe health services (53). A culturally safe service is one that supports a patient’s sense of choice and power (52, 68, 77). A culturally safe health service was an enabling factor for chronic condition management, whereas lack of a culturally safe service was a barrier (53). Services provided by health professionals need to be equitable, respectful and responsive to need, offering effective

Figure 1.1: Stages of the cultural competence continuum to cultural proficiency

Source: Australian Government Closing the Gap Clearinghouse. Cultural competency in the delivery of health services for Indigenous people (1).
communication and professional competence, appreciating difference, and empowering patients.

Pharmacist medication counselling will be ineffective if pharmacies remain culturally unsafe environments and if pharmacists are not culturally competent.

1.7 Aboriginal medication programs

The Australian government has funded a number of specific Aboriginal and Torres Strait Islander medication programs. These programs have been introduced to address the financial barriers to Aboriginal and Torres Strait Islander people’s access to medicines (14). As these programs mainly relate to accessing medicines rather than medication management they are discussed here only briefly.

The Remote Area Aboriginal Health Service program (RAAHS), often referred to as Section 100, was introduced in 1999. The RAAHS program provides Pharmaceutical Benefits Scheme (PBS) medicines, without charge, to clients of approved remote area AHSs, without the need for a prescription (5). The RAAHS medicines are supplied in bulk from the pharmacy to the AHS and then dispensed to patients by a medical practitioner, or an AHW or nurse working under the supervision of a medical practitioner, where consistent with the law of the relevant State or Territory (5). Although the program has increased Aboriginal and Torres Strait Islander people’s access to medicines there is some concern that under this program, clients have little or no interaction with pharmacists, and that medication supply and advice may be sub-standard, thus increasing the risk of medication-related problems or medication misadventure (78).
In response to concerns related to this bulk supply of medicines to remote Aboriginal and Torres Strait Islander communities, the Department of Health introduced the S100 Pharmacy Support Allowance for the provision of some pharmacist services to remote AHSs. The details of this program and other Aboriginal-specific pharmacy programs can be found on the Pharmacy Guild website at http://6cpa.com.au/aboriginal-and-torres-strait-islander-specific-programmes.

Pharmacists report that the amount of funding provided by the S100 pharmacy support allowance is insufficient to allow regular visits to the remote AHSs. The majority of the pharmacists’ visits to remote AHSs report interactions with AHS staff, rather than with patients, and so often do not adequately address patient issues of medication management (79). There has been no comprehensive evaluation of the outcomes of S100 Pharmacy Support Allowance.

In 2011 the Australian Senate conducted an enquiry into the effectiveness of special arrangements of PBS medicines to remote AHSs. The resulting report recommended further data collection, data transparency and research to enable evaluation of clinical impact of this “no charge” RAAHS medication supply scheme. The report also recommended that remote area AHSs be given funding for Dose Administration Aids (DAAs), that medication dispensing, recording and labelling processes be improved and that there should be funded positions for pharmacists in remote AHSs. The report also called for integration of all the different medication access schemes (80).

The QUMAX program began in 2008 and provided subsidised DAAs and PBS medicines for some Aboriginal and Torres Strait Islander people attending ACCHOs. The Closing the Gap (CTG) Pharmaceutical Benefit Scheme Co-payment measure was introduced in 2010 as a
more comprehensive and equitable scheme which subsidised PBS medicines for Aboriginal and Torres Strait Islander people with chronic disease. The QUMAX and CTG programs are facilitated through community pharmacies and thus should encourage pharmacists’ interactions with their Aboriginal patients.

The QUMAX program initially funded the employment of Quality Use of Medicine Support Pharmacists (QUMSP). These pharmacists assisted in brokerage of relationships between AHSs and community pharmacies, as well as establishing some medication management programs and education within AHSs. The QUMAX program resulted in some community pharmacists receiving cultural training and led to stronger working relationships between some pharmacists and AHSs (8). The QUMAX program evaluation reiterated that there is a clear need for individuals within AHSs who can drive change and help AHSs and clients strive for better medication management (8).

The QUMAX evaluation report, conducted by Urbis for the Department of Health, noted that the provision of financial assistance for accessing medicines resulted in more patient-clinician interactions as it removed the embarrassment of the patient having to report to the doctor that they had not been taking their medications. It reported that this increased regularity of communication between the AHSs and their patients led to improvement in the patients’ understanding of their health and medication management (8).

For the CTG Co-payment measure, the CTG-endorsed prescriptions must be dispensed at a community pharmacy. This allows the pharmacist to interact with the patient, and undertake clinical interventions and/or medication counselling. However, the pharmacy environment has been described by some Aboriginal people as impersonal, confusing and uncomfortable and thus can be a barrier to effective engagement with pharmacists (12).
Although the RAAHS, QUMAX and CTG programs remove some of the financial barriers to accessing medicines, poor medication access and management may still occur as a result of program complexity, polypharmacy (the taking of multiple medicines) and inadequate delivery of medicine information (62).

1.8 Medication management

Over 80% of all Australians aged 65 years and over, and about 70% of Australians aged 45-64 years regularly use pharmaceuticals (81). Although medicines contribute to significant improvements in health when used appropriately, they can also be associated with harm as a result of errors and adverse events.

Medication-related hospital admissions have been estimated to comprise 2-6% of all Australian hospital admissions, and for people aged 65 and over it is estimated that 20-30% of admissions are medication-related (82). Medication-related problems account for about 230,000 hospitalisations annually, costing an estimated $1.2 billion in 2011-2012 (82).

There is much medication confusion and mismanagement in the elderly and other populations with multiple chronic diseases. Ninety percent of the elderly cohort in one study recorded at least one medication-related problem, and between 9% and 12% of people attending general practice have reported an adverse medication event in the previous 6 months (2). In Australia the data indicate that patients who participated in HMR were found to have had between two and five medication-related problems per person, and 40-50% of elderly people in the community had been prescribed inappropriate medicines (82).
There are many factors which may contribute to medication-related problems such as patient confusion, medication non-adherence and poor communication. Adverse drug events can be a particular problem in the post-hospital-discharge period (83). There is growing acceptance that prescribing should be conducted in partnership with patients. However, in some instances lack of GP time may limit discussions about medication treatment when patients are with their GPs (84). Despite the increasing availability of medicine information on the internet, doctors and pharmacists are still the preferred source of medicines information for consumers (85).

Social circumstances and deficiencies in health service delivery mean many Aboriginal and Torres Strait Islander people suffer even greater challenges in medication management than non-Indigenous Australians. Complex medicine regimens associated with multiple co-morbidities result in some Aboriginal and Torres Strait Islander patients finding medicines confusing and difficult to manage, and there are many factors which may inhibit Aboriginal and Torres Strait Islander people’s effective use of medications. These include issues of access, lack of continuity of care, low health literacy, poor communication, and lack of understanding of safe medication principles. These factors may contribute to low medication adherence and unsafe medication practices (4, 9, 11, 15).

Larkin reported that barriers to effective medication management included failed patient-clinician interactions, poor healthcare delivery systems and complex therapeutic medication regimens (14). Davidson et al described poverty and social disadvantage, racism, fatalism, patient mobility, the shame involved in accessing subsidised medicines, inadequate health professional support, and the disempowering stigma associated with a diagnosis of chronic disease, as barriers to medication adherence (15). Murray also
reported educational disadvantage and shared crowded households as significant factors that influenced an individual’s ability to manage medications (51).

Emden et al found that social and emotional wellbeing issues deeply pervade the lives of Aboriginal people and may diminish the value that some individuals place upon medicines and the potential of these medicines to improve their quality of life (9, 10). Experiences of racism, causing lack of assertion, self-worth and hope, can also result in an absence of positive attitudes towards health and medications. Some patients were found to make medication management a low priority as they prioritised family responsibility over personal health problems (9). The South Australian research into the medication needs of Aboriginal patients with mental health disorders also found that issues of AHS staff stress and workload, inadequacies of mainstream health services to meet Aboriginal patients’ needs, and inadequate living arrangements impeded effective medication management (9).

Emden et al also found that that the majority of the participants did not understand their medical diagnosis, the action, dosage instructions or potential side-effects of their medicines, or the consequences of not taking their medicines. Many were unable to correctly interpret instructions on medicine labels or to identify when repeat medications were required (9).

De Crespigny et al found that her study participants mainly recognised their medications by shape and colour, and often relied on this form of recognition to select and manage their medication each day (11). The patients of remote GPs, Murray and Brown, reported that generic brand substitution and/or frequent changing of treatments were common causes of medication confusion (51).
Many instances of unsafe medication usage were reported by Kowanko, De Crespigny et al in a study of Aboriginal people with mental health disorders (10). They attributed these to lack of Aboriginal and mainstream workforce training on safe medication management and recommended that AHSs should employ Aboriginal health personnel to co-ordinate and support safe medication management for Aboriginal clients. They also recommended that all personnel with any role in handling, transporting, and providing or assisting in the administration of medication should receive training in safe medication management (10). These researchers also reported that cost, feelings about the value of medicines and side-effects, sharing of medicines, and drug and alcohol misuse negatively impacted on safe medication usage (10).

### 1.8.1 Medication adherence

Poor adherence to prescribed medication is well-documented and associated with adverse health outcomes in all population groups (15). There are many studies which indicate that medication adherence for many non-Indigenous patients with chronic disease is extremely poor (86-90). It is estimated that 30-50% of prescribed medicines for long-term conditions are not taken as recommended (86).

Risk factors for non-adherence with medication include older age, increasing number of medicines, frequency of dosing regimen (especially 12 or more doses per day), patient dissatisfaction with prescribers, and multiple prescribers and pharmacies (91).

Improving medication adherence is complex and requires interventions at the system, provider and patient levels (15). Pharmacists have a role to play at each of these levels. Haynes et al’s systematic review of interventions to enhance medication adherence
identified that for short-term drug treatments, counselling, written information and personal phone contact were found to promote adherence. For long-term treatments, no simple intervention, and only some complex ones, such as counselling, regular communication and follow-up, and family engagement, have led to improvements in health outcomes (3).

A recent Cochrane review on “Ways to help people follow prescribed medicines” suggested that more advanced methods for researching ways to improve medicine adherence were needed. This review hypothesised that as physicians have limited time, and sometimes skills, to counsel patients on medication adherence, medication counselling should be undertaken by pharmacists (92). Consultations between pharmacists and patients have demonstrated positive improvements in medication adherence (93). The United States Institute of Medicine has recommended that patients should have increased access to pharmacist medication management services as these have been shown to resolve medicine-related problems and improve health outcomes (94). In Van Wijk et al’s literature review, some studies reported that weekly or monthly consultations with a pharmacist were most effective in improving medication adherence (95).

Motivational interviewing and collaboration between pharmacists and patients have been shown to increase medication adherence (96). Individualised patient education, together with strategies such as DAAs, regular pharmacist follow-ups, medication review and medication regimen simplification, were also found to improve medication adherence (97).

Barriers for Aboriginal and Torres Strait Islander people to medication adherence may include poor access to pharmacists and pharmacy services. This poor access to pharmacists occurs in remote settings where there are few pharmacies and pharmacists, but also in
urban and rural settings when Aboriginal and Torres Strait Islander people find pharmacies to be unsafe environments (12). Poor access to primary care, deficits in trust between patient and health professionals, and failure of health professionals to address patient understanding, are also seen as factors which may contribute to poor medication adherence for Aboriginal Australians (4).

Researchers claim that pharmacists, through active patient counselling, clarifying concepts and using education tools, together with regular communication, follow-up and family engagement, could greatly assist Aboriginal and Torres Strait Islander people with medication adherence (15). Davidson et al also stated that clinicians should strive to promote adherence through simplifying dosages, organising medications in Dosette boxes or Webster packs, and conveying to the individual the importance of the medication (15).

Larkin and Murray believe effective communication and simplification of drug regimens may improve medication adherence by Aboriginal Australians in the Kimberley. They also commented that it was important for patient education to emphasise the need to take medicines regularly, as this idea may not fit the patients’ understandings of how medicines were to be used (14).

Some literature suggests that lack of treatment adherence or compliance by Aboriginal people is a measure of dissonance between western medicine and Indigenous culture, and this gap can be narrowed only through the development of shared knowledge and cultural beliefs (98).
1.8.2 Health literacy and medication management

Health literacy is often described as the range of cognitive and social skills needed to obtain, understand and use information to enhance health and wellbeing and engage in clinical decision-making (99). Literacy, numeracy and language skills influence a patient’s health literacy and responsiveness to established health education and self-management programs (100). Low health literacy often coexists with lack of education and with social disadvantage, and this can be seen in many Aboriginal communities (101).

Low health literacy can result in decreased ability to read and interpret medication labels and medication information, and thus can result in unsafe use of medicines (102). Lower health literacy is associated with less understanding of medication regimens and a higher likelihood of medication error (103). Low health literacy is a significant and independent predictor of medication adherence (101). There has been limited success in addressing the issues and impact of low health literacy in community pharmacies in Australia (104).

Low health literacy contributes to the communication gap between clinicians and patients (105). Low health literacy skills are associated with poorer health knowledge, poorer health status, higher mortality, increased hospitalisations and higher healthcare costs (101). Data on health literacy in Australian Indigenous populations are lacking. A team of researchers are currently undertaking an intervention trial, using education sessions, in Indigenous primary care services to assess the impact of cardiovascular medication health literacy among Indigenous people in New Zealand, Australia and Canada (106).

Health practices need to allow adequate consultation time and implement strategies to manage complex consultations and multi-morbidities, and have follow-up systems in place.
Pharmacists need to be aware of low health literacy when advising patients about their medication use, labelling medications and providing information on medicines. Health professionals, including pharmacists, need to develop communication aids and resources that are useful for people, regardless of their health literacy skills (100).

1.8.3 Health resources

Many Aboriginal patients have limited access to appropriate and understandable medication information (11, 108). Written information about medicines, i.e. consumer medicine information, is thought to play an important role in educating consumers about medicines and influencing treatment adherence. (85) De Crespigny et al also felt there was an urgent need for more culturally safe written medication information, as well as more education and support for patients (11).

In Hamrosi and Taylor’s study, AHWs reported that clients frequently used medications in an inappropriate way due to limited understanding, literacy and information. Participants in their study found the consumer medicine information leaflets difficult to read, confusing and too long (12). Dr Alex Brown in his Heart Foundation research found that the majority of patients had poor knowledge of their cardiovascular disease and medicines. He stated that currently available medicines information resources were inadequate and lamented the lack of culturally appropriate audiovisual aids that could assist with medication management in AHSs (4). The involvement of Aboriginal and Torres Strait Islander people in the development of information is essential to ensure appropriate language and imagery are used (4).
1.9 Communication and relationships

Miscommunication can have adverse consequences, including poor adherence to treatment and persistent health-damaging behaviours (35). Few researchers have studied the extent of miscommunication in Aboriginal healthcare, but there are indications that there may be serious and often unrecognised miscommunication between non-Aboriginal health professionals and Aboriginal patients (109). Miscommunication may be contributed to by language differences and differing belief systems regarding illness (52). Miscommunication may also result from lack of shared understanding. As shown in the NT Sharing True Stories project, failure to achieve a shared understanding of health concepts among patients and clinicians often inhibits the delivery of effective healthcare (109).

In a study of Western Australian (WA) Cancer Service providers and their Aboriginal patients, lack of knowledge about the cultural, social and health needs of Aboriginal people, the marginalisation of Aboriginal people within the system, and Aboriginal patients’ distrust of the health system and language and communication styles were identified as barriers to communication (110). Strategies identified in the WA study to improve service providers’ communication with Aboriginal patients included more Aboriginal staff, cultural training for service providers, continuity of care, and clear, empathic, simple and jargon-free communication (110).

A UK study identified that insufficient patient counselling about medications was a main cause of preventable drug-related hospital admissions. It revealed that communication failures between patients and healthcare professionals, and between different health professionals, and knowledge gaps about patients’ medications were significant communication problems which contributed to hospitalisation of patients (111).
Kowanko, de Crespigney et al’s report on Better medication management for Aboriginal people with mental health disorder and their carers (2003) recommended more communication between Aboriginal clients and pharmacists. It recommended that all Aboriginal clients and their carers/families needed to receive sufficient time, understandable information and education to make informed decisions about their medication regimens and how to safely manage their medications, at every episode of care from all health professionals (112).

Greater understanding and empowerment about medicine choices seem to be likely to improve medicine adherence (3). McConnel, a remote NT physician, found that treatment compliance improved where there was a shared understanding between health professional and patient of health problems and treatment goals (98).

Good interpersonal relationships between health professionals and patients allow information exchange, facilitate treatment-related decision-making, and improve health outcomes (109). Communication techniques, such as motivational interviewing and patient-clinician collaborative goal-setting, are thought to be useful when counselling patients about their medications (15). However, many health professionals have poor skills in assisting patients to set goals (113). To effectively assist Aboriginal patients manage their medicines, pharmacists need to implement motivational interviewing and goal-setting strategies.

Pharmacists need to establish rapport and trust with Aboriginal and Torres Strait Islander clients before effective negotiation of medicine adherence targets can be achieved (62). Pharmacists also need to establish stronger relationships and communication pathways with other health professionals.
The Price Waterhouse Coopers Professional Collaboration project found a lack of collaboration between community pharmacists and other health professionals can result in adverse medication events. Whilst health professionals cited a willingness to collaborate, there was a lack of understanding and respect among professions, except when located in close proximity. Timely and effective communication among all stakeholders was needed for effective collaboration to occur (96).

Inadequate communication among different health services and among health professionals across the continuum of care was identified by Brown as a major impediment to medication management for Aboriginal people. Most of the AHSs in his study reported that often the hospital discharge information was of poor quality, slow to arrive, and insufficient to explain future care, follow-up strategies, medicines management, and treatment targets. Similarly, he identified that poor communication among health services impeded good continuity of care for patients who were mobile and moved between communities (4).

Building rapport and therapeutic relationships takes time, especially where there is a cultural divide between health professional and patient (109). Motivational interviewing and collaborative goal-setting also take time. Lack of remuneration for community pharmacists’ delivery of professional services and client counselling may be a barrier to pharmacists’ effective engagement with Aboriginal and Torres Strait Islander clients.
1.10 Pharmacies and pharmacists

There is a network of over 5500 community pharmacies across Australia. Pharmacists play a key role in ensuring that most Australians have ready access to essential medicines. Whilst their traditional function in treatments for minor ailments and the provision of medicines remains, there is now greater emphasis on provision of medicines information, advice on prevention and management of chronic disease, and medication management services (114).

Pharmacies must become health solution destinations, and remuneration from professional pharmacy services, such as medication reviews, clinical interventions and immunisations, is needed to support decreasing profit margins from dispensing (115). Pharmacy practice change is seen by many as imperative and inevitable (116).

Whilst many GPs are accepting of the changing professional roles of pharmacists, some perceive the changes as a threat to GPs’ autonomy and control (117). Some GPs consider the community pharmacist role as a “shopkeeper” and distant from direct patient care (84). Research has shown that whilst some GPs were content for pharmacists to provide information regarding medicines, many were less happy for them to be involved in prescribing decisions and adjusting ongoing pharmacotherapy (59, 118). One New Zealand (NZ) study indicated that there has been a significant and positive change in the way GPs view the role of community pharmacists (119). Another study from The Netherlands suggested that GPs would welcome more structured cooperation between GPs and pharmacists to create more opportunities for advisory and interventional input from pharmacists (120). In the 2015 evaluation report of the Fifth Community Pharmacy Agreement (5CPA) programs, GPs and other health professionals stated that usually they
did not communicate with pharmacists about the management of their patients’ health (47).

Pharmacist interventions in primary, secondary and tertiary care settings can improve prescribing practices, improve medication adherence through therapeutic monitoring, simplify medication regimens, and optimise therapeutic outcomes, and so reduce hospitalisations, and/or hospital stay times and healthcare costs (19, 121-124). Pharmacy services such as patient medicine education, medicine reviews, drug interaction checking, dosage and adverse-effect monitoring, medication reconciliation and clinical interventions, have been proven to make valuable contributions to improving health outcomes (125).

Whilst some patients highly value the importance of the pharmacist’s role in their healthcare team (47), there are many people who have little understanding of the role of pharmacists as “medicine experts” or chronic disease managers (126). Pharmacists and their professional organisations need to better inform health professionals and patients about the services pharmacists can offer. Aboriginal and Torres Strait Islander people have reported very little understanding of the pharmacist’s role in their healthcare (62).

In Australia, there is growing evidence for multi-disciplinary approaches to improving primary healthcare and medication management, and a number of leading health advocates are advocating for system reform. Professor Duckett, Director of the Health Program at the Grattan Institute, stated:

“...there needs to be revitalization of primary care, helping this sector adapt to the increased prevalence and importance of chronic conditions. The skills of health
professionals are not being used properly. Use of all the skills of other professionals, such as nurses and pharmacists, needs to be encouraged. (127)

The need for a more multi-disciplinary approach to chronic disease management in Australia’s ageing population and the cost of poor medication management are encouraging health service reform. One reform being trialled in a few sites in Australia is the co-location of non-dispensing pharmacists in general practice settings.

1.10.1 Pharmacists co-located in general practice

The international literature demonstrates that pharmacists in many countries, including NZ, UK, Canada and the United States of America (USA), are successfully providing clinical services and improving medication adherence from within general practice settings (128). The 2010 UK PINCER and PRACtICE studies (129, 130) found that pharmacists play a critical role in reducing medicine errors in general practice. In the UK, GPs reported that having an in-house consultant pharmacist reduced patient waiting time, improved screening and monitoring of minor ailments and chronic disease, reduced medication wastage and over-use, and improved patients’ medication safety (131).

The Australian report of the National Review of Mental Health Programmes and Services supported changes to maximise the potential of non-dispensing pharmacists to work with doctors and other health practitioners to meet health needs, relieve the strains on the health budget and improve health outcomes of patients (132). The Senate Inquiry into the RAAHS medication access scheme recommended more access to pharmacists by remote clients to ensure safe medication use (133).
Despite the lack of a sustainable remuneration model, a small number of pharmacists in Australia are now working in general practice settings and AHSs. Currently, AHSs and general practices are cobbling together funding from HMR income, chronic disease programs and Practice Incentives Program payments to try to maintain their pharmacy services. However, such a funding model is complex and time-consuming, and often only results in 1 or 2 days’ employment of a pharmacist, no matter the size of the primary health service (134, 135).

Freeman, a practice pharmacist, demonstrated that a pharmacist within general practice in Australia can increase medication safety and adherence, improve patient health outcomes and quality of life, reduce medicine wastage and/or inappropriate medication use, and assist with transition of care across healthcare settings (136). Practice pharmacists in Australia have described their tasks as assisting with medication enquiries from patients and health professionals, conducting staff education, reviewing prescribing, mentoring new prescribers, case conferencing and liaising across health sectors. With patients they also conduct medication counselling, undertake medication reviews and evaluate drug utilisation to ensure optimal therapy. (137) Other roles pharmacists undertook included point-of-care testing, monitoring, clinical audits, health assessments, immunisation, transitional care, facilitation of shared medical appointments, and liaison with community pharmacies (138, 139).

Australian practice pharmacists have noted that being able to access a patient’s medical file for a complete patient history enables meaningful, informed clinical interventions optimising patient care. Being integrated within the practice also increases pharmacist–GP rapport and communication (135, 137, 140, 141). Because the practice pharmacist develops
relationships with the GPs in the practice, the GPs are more likely to act on the pharmacist’s recommendations (142).

The successful integration of pharmacists into primary care practices in Canada required development of relationships and trust, clear definition of the pharmacist’s role, appropriate pharmacist orientation and support, ongoing presence and visibility of the pharmacist and sustainable resources and funding (128). Whilst many pharmacists in Australia, Canada and the USA have reported that they are keen to work more closely with mainstream GP practices and deliver inter-professional healthcare, some are unsure as to how to facilitate the process (128, 134, 143).

Some Australian pharmacists, although not being co-located within general practice, have been collaborating with GPs when conducting medication reviews. Although GP engagement with community and accredited pharmacists in the provision of programs and services has improved, the review of the 5CPA Medication Management programs (2015) found that collaboration still remains sub-optimal (47).

1.10.2 Australian Medication Management programs

Medication management programs, funded by the Australian Commonwealth Government, were established to address the high prevalence of medication-related illness in the community (144).

Four of the medication management programs (47) which were funded under the Fifth Community Pharmacy Agreement 2010-2015 include:
- Home Medicines Reviews (HMRs) – conducted by an accredited pharmacist in a patient’s home, after referral from the patient’s GP
- Residential Medication Management Reviews (RMMRs) – conducted by an accredited pharmacist in the patient’s residential aged care facility, after referral from the patient’s GP
- MedsCheck – an in-pharmacy review of a patient’s medication by registered pharmacists
- Diabetes MedsCheck – an in-pharmacy review of Type 2 diabetes patients’ medicines and devices and understanding of their diabetes.

This suite of medication management programs was developed to address differing levels of consumer medication complexity and need (47). MedsCheck services were intended to assist consumers with less complex medication needs, with a focus on consumer education and self-management. The HMRs were intended to assist consumers with more complex medication needs by delivering a higher-intensity, multi-tiered intervention in collaboration with a patient’s GP (47).

The 2015 evaluation of these medication management programs found health professionals and patients perceived these medication management programs had many benefits. They perceived that they improved medication adherence and confidence, assisted GPs with pharmacology, and resulted in de-prescribing of medicines (47). However, despite the HMR and RMMR programs being available since 2001, stakeholders reported that both consumers and GPs had low awareness of the programs, and this made the programs difficult to access, particularly for Aboriginal and Torres Strait Islander and Culturally and Linguistically Diverse (CALD) people (47).
This research investigates the usefulness of the HMR program for Aboriginal and Torres Strait Islander people. Before the HMR program is discussed in some detail, the effectiveness of varied medication reviews, according to the literature, is briefly discussed.

Details and guidelines for the Australian medication management programs can be found on the website of the Pharmacy Guild of Australia at http://6cpa.com.au/medication-management-programmes/.

1.11 Medication review

Medication review has been proposed as an important strategy to constrain the negative effects of polypharmacy and to ensure the safe and effective use of medicines (145). It is defined as a structured, critical examination of a patient’s medicines with the objective of optimising the impact of medicines and minimising the number of medication-related problems (146). The main purpose of medication review is to ensure that each medicine, prescribed and not prescribed, is appropriate for the patient, is being used appropriately, and is well-tolerated and effective (117).

Various medication review programs exist internationally, with variations in name and program delivery rules. The evidence demonstrates that medication reviews can detect medication-related problems and reduce potential harms, but there is varied evidence on their impact on clinical outcomes (147, 148). There are conflicting study outcomes regarding reduction in mortality and hospital admissions (149-154). Stewart et al in the USA found that counselling patients about their medicines in hospital before discharge and one week post-discharge reduced hospital readmissions (155). Roughhead’s study of Australian
patients treated with warfarin found that regular medication reviews, about six-monthly, were needed to sustain delays in hospital readmissions (20). Roughead also found that HMRs were effective in delaying time to next hospitalisation in patients with chronic heart failure (156). However, Royal et al’s systematic review found only weak evidence that medication reviews reduce hospital admissions (157).

Milos et al in Sweden found evidence that medication reviews reduced polypharmacy and increased the appropriateness of medicine choice in aged care (158). Saez-Benito et al in their systematic review of cognitive pharmacy services found conflicting evidence of the effect of medication review on adherence (159). Hatah’s systematic review and meta-analysis of studies showed improvements in medication adherence after medication review (151). Mackeigan and Nissen in their review of the literature found that improved medication adherence was the only consistent outcome shown in trials evaluating home-based medication review (160). Another systematic review found that pharmacist interventions in the pharmacy improved medication adherence in patients with cardiovascular disease or diabetes (161).

Some of the variations in study findings may be due to the different models and variable standards or quality of medication reviews. In some models, for example Medicines Use Reviews (MUR) in UK and NZ and MedsChecks in Australia, the pharmacist does not undergo accreditation training, and these reviews occur within the pharmacy. The MUR service is not intended to be a full clinical review and is modelled on the concept of concordance where patients are encouraged to become increasingly empowered in their own medicine-taking decisions in order to achieve the most effective use of their medicines (162). These MUR
services are not conducted in collaboration with the patient’s doctor and may not result in GP follow-up or medication changes.

The NZ MUR program and separate Adherence Support Services can be conducted in the pharmacy, at the patient’s home or via telephone. The NZ MUR involves four quarterly consultations between a patient and their pharmacist, with follow-up services being shorter in length than initial consultations. The two follow-up consultations assess the effectiveness of the implemented medicines management care plan, initiates any further changes and confirms there are no new medicine-related problems (163). Various international medication review program evaluations have shown that patient follow-up after the initial review service improves patients’ health outcomes (95, 97, 164).

In NZ the most frequent medication-related problems documented during medication reviews were low health literacy and non-adherence to medications (165). In NZ Bryant’s randomised controlled trial of medication reviews in community pharmacies found that only 40% of pharmacists’ recommendations were implemented. This percentage has found to significantly increase if pharmacists have closer collaboration with GPs. This trial also concluded that pharmacies were not a good setting for conducting medication reviews (166).

Population groups that could most benefit from medication reviews have been examined. The Australian, UK, NZ and Canadian literature has identified the following consumers as the most likely to benefit from medication review (163). These are people:

- taking 5 or more medications on a regular basis
- taking 12 or more doses of medicine a day
• with chronic medical conditions
• living in the community
• recently discharged from hospital, with possible medication changes
• with multiple prescribers
• taking medicines associated with high risk of adverse events
• with language, cognitive, dexterity or other physical difficulties.

An evaluation of the NZ medication review program identified that pharmacists’ recruitment of patients excluded low socio-economic and Indigenous groups (167). Australian evaluations of medication review programs have also identified that those at greatest risk of medication misadventure and the most likely to benefit from medication management programs are the least likely to be able to access the service (23, 47, 163, 168). These include patients after hospital discharge, patients living in remote locations, CALD patients, patients who are intentionally and unintentionally highly non-adherent with their medicines, people who are transient or homeless, and Aboriginal and Torres Strait Islander people (163).

International studies of pharmacist-led medication reviews have shown that positive facilitators of medication reviews include established pharmacist-GP relationships, using a patient’s regular pharmacist, adequate clinical training of the pharmacist, and face-to-face meetings (case conferencing) between GP and pharmacist (24, 166, 169, 170). In some models, for example, MURs in the UK, there is concern by GPs that these medication reviews are conducted in isolation by pharmacists rather than in collaboration with GPs (84).
The Australian HMR model is a highly collaborative model in which the GP is responsible for the HMR referral and the patient’s final Medication Management Plan. The features of the HMR model are discussed in 1.12.

1.12 Home Medicines Review

The HMR program (17) was introduced in Australia in 2001 by the Commonwealth Government and is a collaborative model of medication review. It is one of a suite of medication management programs in Australia funded under Community Pharmacy Agreements and managed by the Pharmacy Guild of Australia.

The objectives of an HMR are outlined on the website of the HMR pharmacist accrediting body, the Australian Association of Consultant Pharmacy (171).

The objectives are to:

- achieve safe, effective and appropriate use of medicines by detecting and addressing medicine-related problems that interfere with the patient's desired outcomes
- improve the patient's quality of life and health by using a best practice approach, that involves cooperation among the GP, pharmacist, other relevant health professionals and the patient (and where appropriate, their carers)
- improve the patient's and health professional's knowledge and understanding about the patient's medicines
- build cooperative working relationships between members of the healthcare team in the interests of patient health and wellbeing (171).
An HMR is a comprehensive medication review conducted by a “medication management review accredited pharmacist”, usually in a patient’s home, and only by referral from the patient’s GP. Figure 1.2 shows the flow of HMR processes according to the program guidelines as defined by the Department of Health. To be accredited to undertake HMRs and RMMRs, a pharmacist has to participate in a regulated training and examination process. The number of accredited pharmacists fluctuates annually, but there were almost 1000 accredited pharmacists in Australia in 2014 (171).

Studies show that HMRs can improve patient safety through minimisation of medication errors when targeted at patients at high risk (18-20). The HMRs provide an opportunity to educate patients, identify and resolve issues associated with sub-optimal patient understanding of medicines, identify under-use of medicines and untreated indications, and conduct medication reconciliation (83, 172, 173). Benefits of HMR also include increased health literacy and medicine education, and emotional reassurance, validation and affirmation (174).

Sorenson et al’s randomised controlled trial of the HMR program in 2004 identified potential adverse drug reactions, sub-optimal monitoring, and medication adherence issues with patients’ medications. This trial found that more than 70% of pharmacist recommendations from the HMRs had positive outcomes, preventing possible medication danger and leading to improvements in symptoms, function and disease (175).
Figure 1.2: Home Medicines Review flowchart


A number of research studies have assessed barriers, facilitators and health professional and patient perceptions of the HMR program. The 2005 Urbis Keys Young evaluation of the
HMR program commissioned by the Pharmacy Guild cited a lack of awareness of HMRs among consumers as a key barrier to participation (24). A number of other Australian studies also found low levels of awareness among consumers (176-178). White et al were commissioned by the Pharmacy Guild in 2010 to create a marketing plan to increase patient demand for HMRs (179).

The 2005 Urbis Keys Young evaluation of the HMR program recommended simplifying the HMR processes. However, the HMR process and program rules have increased in complexity rather than becoming simplified under the Fifth Community Pharmacy Agreement, as seen in Figure 1.3. The 2005 evaluation report suggested introducing a two- to three-tiered payment structure to reflect the varying levels of complexity from case to case (24). The latter has occurred to a degree with the introduction of the MedsCheck and Diabetes MedsCheck programs, which are in-pharmacy medicines consultations between consumers and community pharmacists. However, a recent evaluation of the MedsCheck service found that although the service provided valuable education to patients it did not necessarily change behaviour (163).

Medscheck participants reported increased confidence in managing medicines and better understanding of their health conditions and medicines (163). However, the consumers most likely to benefit from MedsCheck programs, those at risk of medication misadventure and those whose adherence to medication regimen was poor, were the least likely to access MedsCheck services (163). Barriers to MedsCheck services included consumers not being able to access community pharmacies. This was due to distance, lack of transport, being housebound or feeling uncomfortable about discussing health in the pharmacy (61, 163). Australian Bureau of Statistics data (2010) showed that only 50% of Aboriginal and Torres
 Strait Islander people can access pharmacies when needed (180). Also, intentionally non-adherent patients are the least likely consumers to consent to having a MedsCheck (163).

The Campbell evaluation commissioned by the Department of Health & Ageing in 2008 (23) found that consumers who had received HMRs were positive about their experience and found it informative but did not always see it as making a significant difference to their health. This was thought to be largely a result of lack of correlation between the HMR interview and the final medication plan implemented by the GP (163).

The Campbell evaluation identified that the business rules were barriers to health professional participation in the HMR program. A recommendation was made to broaden the health professionals who could refer patients for HMRs. It was thought that referrals for HMR by nurses and other professionals would enable post-hospital-discharge patients, Indigenous patients and patients who did not use GP or pharmacy services to have greater access for referral to the HMR program. Lack of integration of HMRs into pharmacy and GP business practices were seen as barriers to HMR referral. Direct referrals to accredited pharmacists, rather than always to a community pharmacy, were recommended. This direct referral to an accredited pharmacist was the only recommendation from the report which was implemented (in 2011) (23). The 2015 SCPA evaluation explored broadening the referral pathway, but only included hospitals, nurse practitioners and specialists (47). To date, no changes to the types of health professionals who can refer patients for an HMR have been made and so GPs are still the only referring practitioners.

In 2008-2009 the Unit for Medication Outcomes Research and Education at the University of Tasmania conducted The Economic Value of Home Medicines Review (VALMER) study which assessed the economic benefits of HMRs (144). It concluded that some patients
benefited substantially from resolution of medication issues as a result of HMRs, and this resulted in considerable savings to the healthcare system. However, for many patients, changes in drug therapy did not result in appreciable short-term savings, and it was inconclusive whether findings might extrapolate to long-term savings (144).

Chen et al from the University of Sydney, Faculty of Pharmacy, found that pharmacists, working through HMRs, could greatly assist GPs to rationalise prescribing and implement evidence-based medicine (18). Chen et al also found that although medication review had been shown to improve the quality of medicine use, medication management plans arising from the medication review process were often not implemented by GPs. This was thought to result from a lack of existing pharmacist-GP relationships and a lack of routine face-to-face interactions between pharmacists and GPs (181). Freeman, as a pharmacist and researcher working within a GP practice, confirmed this finding. His research found that there was a significantly higher rate of uptake of the practice pharmacist medication review recommendations by the GP when medication reviews conducted by a practice pharmacist working within a GP practice were compared with those conducted by an external pharmacist (140). Ahn’s study of HMRs in a western Sydney area found that there was often a lack of medication review follow-up by the GP, and thus patients received their HMR results incidentally when they made visits for other purposes (174).

Carter et al, also a University of Sydney pharmacy research team, found that many patients viewed HMR as an information resource. Their willingness to use HMR was driven by expectation regarding the HMR’s capacity to provide them with useful information (182). Consumers who were worried about their medicines were more willing to use HMR services. Consumers were significantly influenced by their GPs’ willingness to use the medicine
management service (182). These researchers found that understanding and awareness of the HMR program were key motivators to having an HMR, and thus both GPs and pharmacists had a role to play in educating consumers about the HMR program (183). The lack of adequate description of the HMR program, and the lack of understanding of what a medication review actually was, were found to be deterrents for patients to participate in the HMR program (182, 184).

By 2012-2013 the numbers of HMRs in Australia had increased significantly, with more than 80% growth from 2010-2011 levels (185). The Pharmacy Guild of Australia in 2013 called for a moratorium on provision of HMRs due to a perceived program over-spend of the allocated budget. In response, many consumer and professional health organisations lobbied the government for continuation of the HMR program. To curtail any potential budget overspend, the guidelines for the HMR program were tightened in 2013-2014. It was mandated that HMRs occur in a patient’s home unless prior approval was granted, patients could only receive one HMR in any 24-month period unless the referring GP considered an HMR clinically necessary, and the number of HMRs an individual pharmacist can provide is now capped to twenty per month (47). The changes made to the program rules and processes are outlined in Figure 1.3.

Across Australia, the majority of medication review/management programs and services occurred in the major cities. Less than 15% were located in outer regional areas, and less than 2% occurred in remote and very remote areas (47). Lack of accredited pharmacists in rural and remote communities, and the cost and travel time to undertake HMRs in rural and remote areas are often barriers to HMR services in these areas (47).
The Consumer Health Forum of Australia (CHF) produced a paper which explored issues related to uptake and sustainability of the HMR program. The CHF found the HMR program was valued by consumers and was an essential tool for cutting hospital admissions. They stated that the HMR program should be made more accessible for high-risk consumers and specific population groups, such as people from CALD backgrounds, older Australians and Indigenous Australians (186).

The consumers participating in the Fifth Community Pharmacy Agreement medication management program evaluation (47) noted that HMRs were a core part of their preventative healthcare strategy and should be available annually. The consumers stated that HMRs, when performed well, provided positive health outcomes, education on
medication safety and adherence, and cost savings to the health system through de-prescribing and preventing hospital admissions due to medication misadventure (47).

With the rate of HMRs growing and outstripping the capped budget, there have been some suggestions to prioritise HMR recipients according to need. The suggested need categorisation included identification of a patient being at risk of medication misadventure due to having a chronic disease and/or complex management requirements. In addition, the patient must have a number of other criteria, such as instability of health status and/or medicines therapy, using a high-risk medicine, and/or having compromised adherence (185). These suggestions have not as yet been mandated.

The Fifth Community Pharmacy Agreement medication management program evaluation stated that barriers to access, current referral pathways and administrative arrangements needed to be addressed. The reported barriers to access were the limited awareness of HMR by consumers and GPs, lack of availability of HMR-accredited pharmacists in rural and remote areas, being a person of CALD background or of low socio-economic status, and cultural barriers to conducting HMRs in the homes of Aboriginal and Torres Strait Islander people (47).

The inequity of medication review service delivery results partially from lack of consultation during program design with health professionals who service at-risk communities (23). Flexibility of programs is needed to allow for cultural difference and improved program access and reach (47).
1.12.1 Home Medicine Reviews and Aboriginal and Torres Strait Islander people

The Urbis Keys Young (2005) and Campbell (2008) evaluations of the HMR program both identified that the current HMR program may not be an appropriate model to address medication issues in remote Indigenous communities (23, 24). However, no action to date has been taken to develop a more appropriate model for Aboriginal and Torres Strait Islander people, although changes are now being discussed for a new medication review program under the Sixth Community Pharmacy Agreement.

The Campbell report stated that Indigenous Australians were the most likely of all Australians to miss out on effective access to HMRs despite having high rates of hospitalisation due to medication misadventure (187). Whilst no hard data are available, it appears that HMRs for Aboriginal patients did increase slightly when the QUMAX program was implemented in 2008. It appears that these HMR increases were due largely to relationship building between the QUMAX support pharmacists, employed by the QUMAX program, and AHSs (8). Despite this increase in HMRs, Aboriginal and Torres Strait Islander people in urban, rural and remote areas are still very low users of the HMR program. Strategies for providing alternative models of HMR and pharmacy services aimed at reaching Indigenous consumers need to be explored and new programs developed (23).

The Campbell evaluation reported that its research only included four interviews with AHWS and two pharmacists who conducted HMRs for Aboriginal patients, and it recommended further research be undertaken specifically focusing on Indigenous communities. The Campbell report recommended that Aboriginal and Torres Strait Islander patients should have multiple visits with a pharmacist. These visits would facilitate the continual building of
knowledge and understanding of medications and reinforce medication adherence patterns. The concerns expressed in the Campbell report for Indigenous Australians have still not been addressed. This thesis aims to contribute increased evidence for the need for HMR program improvement.

Only two pharmacists to date have reported on conducting HMRs for Aboriginal and Torres Strait Islander clients. Both these pharmacists were in the rare position of being employed by an AHS. One of these, Sanberg, evaluated the HMR processes within the AHS in which she was working and made recommendations for effective HMRs for her Aboriginal patients. Her recommendations included the attendance at the HMR interview of an AHW who speaks local language, and funding from the program to the service for the AHW participation. She also recommended that lack of medication compliance be listed as a trigger for HMR referral, and that the pharmacist should use appropriate written and pictorial resources. Further recommendations for program change included allowing AHS pharmacists to write HMR referrals, extra funding for regular follow-up visits, and funding for more pharmacists to be directly employed in salaried positions by AHSs (16). Sanberg reported that a one-off annual service does not allow for rapport building and the tiered education delivery that is needed (16).

Larkin commented that in the Kimberley, AHWs play an important role in the delivery of HMR to Aboriginal patients as AHWs provide valuable information about the health of the patient and about social circumstances that may influence medication management. Participation of AHWs in the interview stage ensured appropriate communication (14). Larkin suggested that it may be preferable to conduct HMRs in primary care clinics, as
Brown’s research found that improving medication management within Aboriginal communities and AHSs requires a sustainable systems-based approach with an organisational commitment to medication management activities, such as medication review (4). Brown’s research found that system-level reform needed clearly articulated medication management strategies, and clinical and management leadership in quality use of medicines. Multi-disciplinary knowledge sharing, functional patient information and recall systems, improved linkages between health services, and improved medication management skill capacity for staff, together with integrated patient records, prescribing software and electronic educational resources, were also seen as imperative in improving medication management. (4)

The AHS staff interviewed by Brown strongly supported an increasing role for pharmacists in AHSs. The Pharmaceutical Society of Australia Budget submissions in 2014, 2015 and 2016 requested that the Australia Government fund salaried positions for pharmacists in AHSs (188, 189). The AHS staff in Brown’s study also suggested enhanced outreach pharmacist services, primary care medication facilitator positions, patient and staff medication education services and increased medication review services within AHSs (4).

1.13 Conclusion

The health of Aboriginal and Torres Strait Islander people remains poor. The literature suggests that improved trust and rapport between health professionals and Aboriginal
clients, and more culturally responsive health professionals, will assist more effective communication, and empower patients to engage in healthcare choices.

Many Aboriginal and Torres Strait Islander people are at high risk of medication misadventure and poor medication adherence. Despite Aboriginal people’s high burden of chronic disease, they are low users of medication management programs such as HMR and MedsCheck.

Pharmacists need to be culturally competent before they can effectively communicate with Aboriginal and Torres Strait Islander clients. Culturally responsive pharmacists are well-placed to provide education about medicines and medicines management strategies to Aboriginal and Torres Strait Islander people and AHS staff (73).

The Australian HMR model appears to minimise medication error and share medication knowledge with patients and health professionals. However, the current HMR model appears to be inaccessible to many Aboriginal and Torres Strait Islander people. This study will investigate how medication management programs, such as HMR, can better address the needs of Aboriginal and Torres Strait Islander people.

This chapter has introduced the rationale and the supporting literature as a background to the research questions that are explored in this thesis. The literature discussed in the introduction was used to situate this study.
1.14 This research study

This research was conducted in three phases.

In Phase 1, Aboriginal and Torres Strait Islander focus groups were used to investigate patient challenges with managing their medicines and the perceived benefits, if any, of HMR. The focus groups explored the satisfaction of Aboriginal and Torres Strait Islander patients with their experience of an HMR, assessed why patients may elect not to have an HMR, ascertained patient perceptions of the suitability of the current HMR model and collected patient suggestions for improvements to the existing HMR model.

Phase 2 explored the attitudes and perceptions of health professional employees working within AHSs towards the HMR program. It examined barriers to HMR referral and explored strategies for HMR program improvement.

The objectives of Phase 3 were to identify pharmacists’ relationships with AHSs and AHS clients and to explore the barriers and facilitators, from the pharmacists’ perspectives, for the provision of HMRs and other pharmacy services to Aboriginal people attending the AHSs.

1.14.1 Research questions

This study addresses the following research questions:

1. What are the experiences and perceptions of Aboriginal and Torres Strait Islander people with regard to taking medicines?
2. What are the experiences and perceptions of Aboriginal and Torres Strait Islander people of the HMR program?

3. What are the attitudes and perceptions of AHS health professionals and service providers to the HMR program?

4. What are the barriers and facilitators, from pharmacists’ perspectives, for the provision of HMRs and other pharmacy services to Aboriginal and Torres Strait Islander people attending AHSs?

5. What strategies or program changes are needed to increase utilisation of medication review programs by Aboriginal and Torres Strait Islander people?
1.5 References


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Chapter 2

Methods and methodology

2.1 Methods and methodology

In this chapter I provide the background and rationale for the overall methodology and methods used for this thesis. Methods for each phase of the research are described in each related publication. To prevent repetition, details of methods specific to each paper are not described in this chapter.

2.2 Background

Research and researchers have had a strongly negative reputation in many Indigenous settings (1). As a non-Indigenous researcher, I am aware that the process of undertaking ethically sound research with Indigenous people is complex. Despite extensive reading, some cultural immersion and attempting to be culturally sensitive and respectful, I may not always truly reflect the Indigenous epistemologies (ways of knowing), axiologies (ways of doing) and ontologies (ways of being) for all Aboriginal and Torres Strait Islander people (2, 3).

When conducting this research I was aware that Aboriginal and Torres Strait Islander people have been over-researched, without corresponding improvements in health (4). I was cognisant that I needed to produce research which could benefit the participants and other Aboriginal and Torres Strait Islander people. I was mindful to heed the Aboriginal Health &
Medical Research Council guidelines which state that research should be ethical, meaningful and useful to Aboriginal people (5). The research also needs to be culturally sensitive, be controlled by Aboriginal communities, and enhance the skills and knowledge of Aboriginal people and organisations whilst employing principles of reciprocity (5). The ethical research practices used in this study are outlined in Table 2.1.

Before commencing this research, I sought community engagement and support. Written consent from the manager and/or board of each AHS was obtained. See Appendix B for letters of support from AHSs. Ethics approval was sought and granted from the University of Sydney Human Research Ethics Committee and also from the relevant Aboriginal research committees, the Aboriginal Health & Medical Research Council (NSW), the Menzies School of Health Research (NT) and the Aboriginal Health Research and Ethics Committee (South Australia and Victoria).

2.3 Study design

This is a collaborative, descriptive study which used focus groups, semi-structured interviews and a cross-sectional survey to collect data. Collaborative and participatory research is generally identified as providing appropriate methodologies for research with Indigenous people (6).

An Aboriginal advisory group was established at the commencement of this study to guide the study design and data collection protocols. This group consisted of an AHS manager, an Aboriginal elder, an Aboriginal state health program manager and a senior Aboriginal health education officer. The advisory group provided cultural guidance and community expertise.
This advisory group discussed strategies for community engagement, and advised on principles of reciprocity and effective communication. They assisted with communiques to AHSs and designing focus group and interview questions. Work commitments, new job relocations and family illnesses resulted in the advisory group having less input after the data collection phase. Their input to project design and sage advice throughout were invaluable.

An Aboriginal Torres Strait Islander clinical counsellor undertook part-time research training on this project for six months, learning about research, and taking this learning and experience back to her local community and her clinical practice, thus building capacity in her community. She assisted by researching background information for some of the research sites. This included information on the traditional owners, the history of each AHS and other key Aboriginal organisations in each area. This information informed the researcher and assisted in the building of trust. The Aboriginal researcher was involved in data collection at one of the early focus groups and provided the researcher with feedback and suggestions for leading subsequent focus groups with Aboriginal participants. This Aboriginal researcher has now enrolled in her own PhD study.
For clarity of description I have divided the study into three phases:

**Phase 1:** Focus groups with Aboriginal and Torres Strait Islander people who use multiple medicines

**Phase 2:** Semi-structured interviews with health professional staff at Aboriginal Health Services

**Phase 3:** A cross-sectional survey of HMR-accredited pharmacists.

### 2.3.1 Phase 1

Focus group methodology was chosen to explore Aboriginal and Torres Strait Islander patients’ views as it built collaboration through yarning and the sharing of ideas in conversation and storytelling (7). I was very aware that power imbalance, Aboriginal shyness and disempowerment, and distrust of the white stranger researcher could be barriers to effective information sharing (8).

Table 2.1 below outlines how ethical research practices were employed in this study. The Values and Key elements columns listed in Table 2.1 are based on Table 3 in a paper written for the Indigenous Injustice Clearing House entitled *Conducting research with Indigenous people and communities* (9). This Indigenous Clearing house paper explored the core values and approaches, adopted in Indigenous justice research, which produced meaningful research outcomes.
### Table 2.1 Ethical research practices in this study design

<table>
<thead>
<tr>
<th>Values</th>
<th>Key elements</th>
<th>Examples in this research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Culturally appropriate</td>
<td>Alternative methodologies such as yarning</td>
<td>Yarning – focus groups</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Use of AHSs and AHWs to facilitate research</td>
</tr>
<tr>
<td>Indigenous engagement or control</td>
<td>Direction and management of research including reference groups, partnership approaches</td>
<td>Advisory group</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AHS board consent</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Involvement of AHS in research management</td>
</tr>
<tr>
<td>Investment in local capacity</td>
<td>Training of Indigenous researcher during the initial stages of project</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Involvement of AHWs in medicines discussions at focus groups</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Training of AHS staff regarding HMR program</td>
</tr>
<tr>
<td>Reciprocity</td>
<td>Providing individual and/or community benefits</td>
<td>Individuals received information regarding their specific medicine issues and how to organise HMRs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Research into practice*</td>
</tr>
<tr>
<td></td>
<td>Communicating results to participants/communities</td>
<td>All AHSs received a summary of findings from focus groups and interviews at their service</td>
</tr>
<tr>
<td></td>
<td></td>
<td>All AHSs received copies of research publications</td>
</tr>
</tbody>
</table>

Key: AHS=Aboriginal Health Service; AHW=Aboriginal Health Worker; HMR=Home Medicines Review
To reduce barriers to rapport building I chose not to formally collect demographic data, and not to ask participants to share private health information or provide any written responses. Patients did have to sign consent forms. The process of signing consent forms indicated that although all participants spoke English, only about 70% of participants had fluency in written English. I read the consent form and answered all queries. The AHWs and family members assisted those with poor literacy. All participants gave verbal and written consent. All participants were informed of their rights to withdraw from the study at any time without penalty.

I conducted all the focus groups myself to ensure consistency of approach.

Phase 1 methodology is outlined in some detail in the publication entitled *Exploration of Aboriginal and Torres Strait Islander perspectives of Home Medicines Review* in Chapter 4.

### 2.3.2 Phase 2

Semi-structured interviews were used to explore AHS health professional staff’s perceptions of the HMR program. Interviews allowed one-on-one in-depth conversations with AHS GPs, nurses and AHWs, and allowed me to probe meaning and increase understanding. Open-ended questions allowed exploration of participants’ behaviours, opinions, feelings and knowledge.

As GPs are integral to the HMR referral process it was essential to learn why or why not GPs supported the HMR program for their patients. Similarly, at most AHSs, AHWs play an important role in assisting patients to manage their medicines. They provided a cultural, as well as a clinical perspective, of patients, medicines and HMR processes.
2.3.3 Phase 3

As well as understanding AHS patient and health professional perspectives of the HMR program, it was important to explore any barriers to pharmacists’ conducting HMRs with Aboriginal and Torres Strait Islander people.

An online survey was used to gather data from the HMR-accredited pharmacist respondents, who are geographically distributed across Australia. Findings from Phases 1 and 2 were used to guide survey design. The recurrent themes related to pharmacist-patient relationships, the role of AHWs and HMR processes were incorporated into the survey. Survey questions can be found in Appendix C.

The online survey link was emailed with study information to all online registered HMR-accredited pharmacists. Email was chosen as it allowed anonymity and ease of completion for respondents, timeliness and low cost.

2.4 Setting

2.4.1 Phases 1 and 2

The AHSs were chosen as the sites for recruitment of patients and data collection, as AHSs are culturally safe environments which support Aboriginal patients’ sense of choice and power (10). Each AHS was given verbal and then written information about the project, and their management and boards were asked to approve participation in the study. The AHSs brokered the relationships with the Aboriginal and Torres Strait Islander communities and assisted with participant recruitment and focus group organisation. Some AHSs provided transport to assist patients to participate in focus groups at the AHS.
The 12 AHSs in Phases 1 and 2 were purposively chosen for their diversity in location, size and governance (as shown in Table 2.2 below), and their willingness to participate. The AHSs are not named to protect confidentiality of participants. The research settings included Aboriginal Community Controlled Health Services and government-funded AHSs, both large and small services, with a range of staff and service delivery models. The AHSs prescribed and dispensed medicines under different schemes, including Section 100, QUMAX and Closing the Gap. Two sites had in-house pharmacists. Three Northern Australian sites were chosen to include Torres Strait Islander people representation.

I had a relationship with two of the AHSs in the study through my previous QUMAX role. However, with the other ten AHSs I was not known and needed to establish the trust and support of the AHS management and staff. It was necessary to convey to them that this study would benefit the participants, their communities and the AHS itself. As a researcher I worked hard to establish the centrality of relationship and reciprocation (11).

Table 2.2: Aboriginal Health Service demographics

<table>
<thead>
<tr>
<th>State</th>
<th>PhARIA* MM**</th>
<th>Governance Medication Programs</th>
<th>Patient Focus Groups HMR Users</th>
<th>Patient Focus Groups HMR Non Users</th>
<th>Health Professional Interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSW</td>
<td>Rural PhARIA 1 MM 4</td>
<td>ACCHS QUMAX</td>
<td>3</td>
<td>9</td>
<td>1 AHW 1 nurse 1 GP</td>
</tr>
<tr>
<td>NSW</td>
<td>Rural PhARIA 3 MM 5</td>
<td>ACCHS S100</td>
<td>1</td>
<td>8</td>
<td>1 AHW 2 nurses 1 Practice Manager 1 GP</td>
</tr>
<tr>
<td>NSW</td>
<td>Urban PhARIA 1 MM1</td>
<td>ACCHS QUMAX</td>
<td>0</td>
<td>13</td>
<td>1 AHW 1 GP</td>
</tr>
<tr>
<td>State</td>
<td>PhARIA* MM**</td>
<td>Governance Medication Programs</td>
<td>Patient Focus Groups</td>
<td>Patient Focus Groups HMR Users</td>
<td>Patient Focus Groups HMR Non Users</td>
</tr>
<tr>
<td>---------------</td>
<td>--------------</td>
<td>--------------------------------</td>
<td>----------------------</td>
<td>-------------------------------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td>NSW</td>
<td>Regional PhARIA 1 MM 3</td>
<td>ACCHS QUMAX</td>
<td>3</td>
<td>6</td>
<td>1 AHW</td>
</tr>
<tr>
<td>Qld</td>
<td>Regional PhARIA 1 MM 2</td>
<td>ACCHS QUMAX</td>
<td>0</td>
<td>10</td>
<td>2 AHWs</td>
</tr>
<tr>
<td>Qld</td>
<td>Remote PhARIA 6 MM 7</td>
<td>Queensland Health S100</td>
<td>0</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>NT</td>
<td>Regional PhARIA 1 MM 2</td>
<td>ACCHS QUMAX S100</td>
<td>2</td>
<td>6</td>
<td>1 AHW</td>
</tr>
<tr>
<td>NT</td>
<td>Remote PhARIA 6 MM 6</td>
<td>ACCHS S100</td>
<td>3</td>
<td>7</td>
<td>1 AHW</td>
</tr>
<tr>
<td>Vic</td>
<td>Urban PhARIA 1 MM 1</td>
<td>ACCHS QUMAX</td>
<td>3</td>
<td>5</td>
<td>1 AHW</td>
</tr>
<tr>
<td>SA</td>
<td>Rural PhARIA 3 MM 4</td>
<td>ACCHS QUMAX</td>
<td>8</td>
<td>3</td>
<td>3 AHWs</td>
</tr>
<tr>
<td>SA</td>
<td>Remote PhARIA 6 MM 7</td>
<td>SA Health S100</td>
<td>0</td>
<td>8</td>
<td>1 AHW</td>
</tr>
<tr>
<td>SA</td>
<td>Urban PhARIA 1 MM 1</td>
<td>ACCHS QUMAX</td>
<td></td>
<td></td>
<td>1 AHW</td>
</tr>
<tr>
<td>All States and Territories</td>
<td></td>
<td></td>
<td>23</td>
<td>79</td>
<td>14 AHWs</td>
</tr>
</tbody>
</table>

Key: ACCHS=Aboriginal Community Controlled Health Service; AHW=Aboriginal Health Worker; GP: General practitioner, QUMAX=Quality Use of Medicines Maximised for Aboriginal and Torres Strait people

* PhARIA (the Pharmacy Accessibility Remoteness Index of Australia), the pharmacy measure for remoteness. PhARIA 6 is the most remote (12).

** Modified Monash categories which use the Australian Bureau of Statistics remoteness classification system, with MM7 being the most remote (13).
In very remote areas there is often a higher percentage of Aboriginal people who speak local languages, and who may not speak English. Participants in this study needed to be able to converse in English. Lack of funding resulted in no interpreters being used. Two of the settings used are classified as remote (MM7), according to the Modified Monash model of remoteness (13). However, the remote settings used had an AHS and pharmacy and so are not viewed by the researcher as very remote. No research was conducted in very remote locations due to lack of funding for travel and lack of AHSs to assist in facilitation of the research. Thus, the views of Aboriginal people who do not speak English and the views of Aboriginal people living in very remote settings have not been explored in this study.

In this study, participants in the remote settings did have access to community pharmacies and pharmacist services, as well as regular GP services, and therefore were able to express their views on their relationships with their pharmacists and GPs. In many remote and very remote areas there are no community pharmacies, and supply of bulk medications under the remote Aboriginal Health Services scheme results in minimal or no interactions with pharmacists (14).

Eleven of the 12 AHSs were sites for patient focus groups. Eleven of the 12 AHSs were sites for health professional interviews. As can be seen in Table 2.2, at one site there were no patient focus groups. This was due to community attendance at a funeral and costs associated with travelling to this site. At a different site there were no health professional interviews as a result of staff shortages due to sickness.
2.5 Sample

2.5.1 Phase 1

Eighteen focus groups were conducted with Aboriginal and Torres Strait Islander patients (n=102) at 11 AHSs in Queensland, NT, SA, NSW and Victoria.

Focus group participants (n=102) were recruited through AHSs. Patients attending the participating AHSs, who were multiple medication users and had a reasonable understanding of the English language, were recruited to the study by AHS staff. Demographic information was not formally collected. Field notes showed that 75% of patient participants were female and approximately 90% appeared to be over 40 years of age.

2.5.2 Phase 2

Thirty-one semi-structured interviews were conducted at 11 AHSs. The numbers of each profession participating were influenced by size of service, staff availability and willingness to participate at each AHS visited. Fourteen AHWs, five nurses, one practice manager and 11 GPs were interviewed.

Health professional staff assisting with patient recruitment for focus groups were provided with information about the study. They were asked to share this information with colleagues and ask them to participate in interviews. Most staff, however, did not commit prior to my visit to their AHS and were opportunistically recruited when I visited the AHS to conduct the focus groups.
2.5.3 Phase 3

Only HMR-accredited pharmacists can deliver HMRs. For this reason, only these pharmacists were asked to participate in the research.

The survey was sent to 983 HMR-accredited pharmacists listed on the Australian Association of Consultant Pharmacists’ database. Questions in the survey explored pharmacists’ engagement with AHSs.

A total of 187 pharmacists responded to the survey. However, not all of these respondents answered all questions, as many had no engagement with AHSs. Only 88 respondents answered all the specific questions on working with AHS staff and conducting HMRs for Aboriginal patients. This appears to reflect the small sample of pharmacists who are actually engaged in delivering services to AHSs.

The results represent only a small percentage of accredited pharmacists and cannot be extrapolated to all pharmacists.

2.6 Data collection

2.6.1 Phase 1

Eighteen focus groups were conducted with 102 patients. These consisted of 11 focus groups for patients (n=79) who had not had an HMR previously (HMR Non Users) and seven focus groups for those patients (n=23) who had had an HMR (HMR Users).

At the beginning of each focus group, time was devoted to developing rapport, and sharing stories and connections to land, place and family. I was aware that:
“In sharing stories it is necessary to share our own, starting with self-location. The researcher’s self-location provides an opportunity for the participant to situate and assess the researchers’ motivations for the research, thus beginning the relationship” (9) pg. 98.

Although focus group participants had received information about the research, I reiterated the objectives and details to ensure complete clarity, especially for those participants with low literacy. Patient information and consent forms can be found in Appendix D.

Each participant was given the opportunity to share their individual experiences and feelings about the taking of medicines, before group discussion occurred on specific issues. Most participants were keen to tell their stories, often wanting to share their individual experiences and some even wanting to talk about their own specific medicines. For a few participants from more remote areas, where English was their second or third language, communication was more difficult. I endeavoured to create a relaxed, respectful atmosphere conducive to the exchange of knowledge and ideas. Holding the focus groups within the familiar and comfortable surrounds of the AHS also helped to engender trust and communication.

Participants were offered travel expenses, and lunch was provided at the end of each focus group. Interactions over lunch allowed me, as a pharmacist, to assist participants with their specific medication queries. These interactions were not recorded but were offered in a spirit of reciprocation. Thus, the focus groups provided a forum for the sharing of information about medications, as well as the opportunity to collect information about patient perceptions and experiences. Many participants enquired after the focus groups about how they could organise an HMR for themselves or family members. I assisted by
providing information to patients as to how to organise an HMR referral. It is hoped, but not measured, that there was an increase in HMRs in communities where research was conducted.

The core questions discussed by focus group participants can be found in the two publications in Chapters 3 and 4.

Focus group discussions were recorded. These recordings were de-identified and sent to a professional transcriber. I then checked transcriptions prior to analysis. Field notes were made immediately after the focus groups were held.

Ideally, transcriptions and themes derived from analysis should have been checked by participants. The researcher elected not to burden participants and AHS staff further by recalling focus groups but made an agreement with participants to report back findings to the AHS at the conclusion of analysis and relied on the AHS to disseminate information about the findings. All AHSs received a summary of the findings from their patient focus groups and AHS staff interviews.

2.6.2 Phase 2

In-depth semi-structured interviews (n=31) were conducted with professional staff who were available and willing to give their time during my visit to their health service. The AHWs were particularly interested in speaking with me to learn more about medication review and chronic disease management. I spent time with nurses and AHWs before and after focus groups and interviews to build relationships and share information about quality
use of medicines and medication review. It is hoped that this reciprocity enabled and empowered the AHS staff to engage with patients to discuss medicines and organise HMRs.

The semi-structured interview guide can be found in Chapter 5.

Interviews were recorded. These recordings were de-identified and sent to a professional transcriber. I then checked transcriptions prior to analysis.

2.6.3 Phase 3

The online survey consisted of 39 items which included closed and open-ended questions and Likert scale questions.

A copy of the survey can be found in Appendix C.

2.7 Analysis

2.7.1 Phases 1 and 2

Interviews and focus groups were recorded, de-identified and transcribed verbatim. Transcripts were coded and analysed for themes that recurred throughout the interviews. Analysis was conducted concurrently with data collection and fed back into continual refinement of this process. Themes were identified by repetition of words and phrases, and shared meanings, evident across data. Focus groups and interviews continued and concepts were explored until no new findings were being generated and saturation of data had occurred. Open coding of focus group and interview transcriptions was used to identify, categorise and describe recurrent themes. Field notes and summaries written at the end of each focus group and interview were also incorporated into the analysis.
Using multiple data sources, that is patients, health professionals and pharmacists, and different methods such as focus groups, interviews and a survey, contributed to a holistic and comprehensive understanding of the findings and helped verify conclusions.

The AHS settings varied in their geographic and governance. Differences by location were examined.

### 2.8 Reciprocity

A “thank you” letter and a summary of findings from the focus groups and interviews were provided to each participating AHS after my visit. It is hoped that sharing of the findings will assist AHSs’ understanding of medication management challenges faced by their patients and staff and thus assist AHSs to improve medication management strategies and build capacity of their staff regarding medication management.

I have shared my publications with all participating AHSs, NACCHO, the Department of Health and the Pharmacy Guild of Australia in an attempt to change current HMR program rules and promote development of a more effective medication review program for Aboriginal and Torres Strait Islander people.

### 2.9 Candidate’s contribution to the research and thesis

I designed the project, completed ethics applications, and organised information and consents from all AHSs and participants.
I conducted all focus groups and interviews. Recordings from focus groups and interviews were transcribed verbatim by a professional transcriber.

I designed the pharmacist survey in collaboration with a pharmacy Honours student and her supervisor. The Honours student organised the distribution and collection of survey data.

I conducted all the analysis of data and coding for themes.

I wrote all the publications and this thesis with guidance and advice from my primary supervisor.

2.10 Next chapter

In Chapter 3 the findings from the patient focus groups in Phase 1 about medication management issues for Aboriginal and Torres Strait Islander patients are reported and discussed.
2.11 References


Chapter 3

Aboriginal and Torres Strait Islander people’s experience with medicines

3.1 Introduction to chapter

The papers in both Chapters 3 and 4 report the findings of the data analysis of 18 semi-structured focus groups with 102 Aboriginal and Torres Strait Islander participants.

This chapter contains an original research paper that has been published in a peer-reviewed journal. This paper shares some important findings about Aboriginal people’s perspectives on medicine taking and sets the scene for Chapter 4 which contains more in-depth discussions related to patients’ perspectives of medication reviews. As the paper in Chapter 4 is longer, it contains a more detailed description of the focus group methodology than found in Chapter 3.

Each focus group began with a sharing of experiences about medicines. Participants were encouraged to “yarn” about how they felt about taking medicines, how they managed their medicines and how they engaged with health professionals. This yarning about medicines helped establish a convivial environment for sharing opinions before I drilled down with more focused questions. These general findings about medicine taking helped situate the rest of this study.
3.1.1 What is known on this subject?

Whilst numerous studies report the social, economic, emotional and physical determinants of Aboriginal and Torres Strait Islander health, and some studies have evaluated medication access schemes, very little research has been conducted into Aboriginal and Torres Strait Islanders’ experiences with medicines. Previously, there has not been national research into Aboriginal and Torres Strait Islanders’ perceptions and understanding of medicines.

3.1.2 What does this study add?

The study outlines Aboriginal and Torres Strait Islander people’s views on medication use. These findings should be used to inform health professionals as to how they can better assist these patients to manage their medications and treatment choices.

3.1.3 Reference


A copy of the published paper can be found in Appendix E.
3.2 Manuscript abstract: “They’ve given me that many tablets, I’m bushed. I don’t know where I’m going.”

Objective

To explore Aboriginal and Torres Strait Islander patients’ experiences with medicines, and the barriers and facilitators to their effective use of medicines.

Design

A descriptive, qualitative study, using 18 semi-structured focus groups with 102 Aboriginal and Torres Strait participants. Groups were conducted at 11 Aboriginal Health Services (AHSs). These were recorded and transcribed and a thematic analysis performed.

Settings and Sample

Participants were Aboriginal and Torres Strait Islander patients, taking multiple medicines, who attended AHSs, and who spoke English. AHSs varied in governance, size and service delivery models as well as their locations which were across urban, regional, rural and remote settings.

Results

Major themes identified were consistent across all settings and patients. These were confusion over medicines, perceived lack of advice from health professionals to patients about medicines, and challenges in having effective interactions with medical practitioners and pharmacists. Participants wanted more information about medicines, indications for medicines, how they should be used, potential side-effects, drug interactions and duration
of therapy. They also reported an absence of appropriate medication labelling and written information.

**Conclusion**

Many Aboriginal and Torres Strait Islander patients take multiple medicines and often find managing their medicines difficult and worrying. These patients require more comprehensive information, verbal and written, and more effective communications from doctors and pharmacists about medication indications, mechanisms, side-effects, drug interactions and duration of treatment. Pharmacists have an opportunity to play a greater role in improving understanding of medicines and treatment choices.
3.3 Manuscript full text

They’ve given me that many tablets, I’m bushed. I don’t know where I’m going.” Aboriginal and Torres Strait Islander people’s experiences with medicines

3.3.1 Introduction

Despite a higher burden of acute infections and chronic diseases, under-use of medicines is evident in Australian Aboriginal populations (1, 2). Poor control of chronic disease states and subsequent higher hospital admissions, morbidity and mortality may be directly attributable to poor medicine management in Indigenous communities (3).

Very little research has been conducted into Aboriginal and Torres Strait Islander patients’ perceptions, experience and understanding of medicines. Similarly, little is known about the role of pharmacists in Aboriginal health. Published research confirms this proposition and has been used to situate this research.

Poor adherence to prescribed medicines is well-documented and associated with adverse health outcomes in all population groups (4). Social circumstances, and deficiencies in health services and systems mean Indigenous Australians often suffer even greater challenges in medicine management than non-Indigenous Australians. Barriers to accessing medicines include financial and geographic constraints, failed patient-clinician interactions, poor healthcare delivery systems and complex therapeutic regimens (5). Social and emotional wellbeing issues deeply pervade the lives of many Aboriginal people and may diminish the value that individuals place upon medicines and the potential of these medicines to improve their quality of life (6).
With the introduction by the Commonwealth Government of the Aboriginal Health Service Remote Access scheme (known as Section 100) in 1999, and Close the Gap in 2010, some of the financial barriers preventing access to medicines for a number of Aboriginal people have been removed. There have been some evaluation studies relating to medication access and supply. Cognitive pharmacy services and medication education, encouraging safe and efficacious use of medicines for Aboriginal and Torres Strait Islander people, now need to be addressed (7).

3.3.2 Method

Aboriginal Health Services (AHSs) were selected to include urban, regional, rural and remote settings. They included Aboriginal Community Controlled Health Services and government-funded AHSs. Each AHS was given verbal, then written information about the project. The AHSs’ management and boards were asked to approve the research participation before approval was sought and granted from the University of Sydney Human Research Ethics Committee, the Aboriginal Health & Medical Research Council (NSW), the Menzies School of Health Research and the Aboriginal Health Research & Ethics Committee (SA).

Patients who were multiple medication users and had a reasonable understanding of the English language were recruited to the study by AHS staff, independently of the researcher. Patient consent was sought by staff and repeated by the researcher.

Focus group methodology was chosen as this allows a semi-structured “yarning” process across the group. This gathers information through conversation. Yarning is compatible with Indigenous cultural process and enables the telling of stories (8, 9). The focus groups
provided a forum for the sharing of information about medications as well as the opportunity to collect information about patient perceptions and experiences. Focus groups were conducted by the first author, a pharmacist. She established a reciprocal relationship (10) with participants sharing information and assisting participants with their specific medication queries at the end of each session.

Focus groups’ questions were designed to be non-leading and to encourage open discussion. They were modified slightly as a result of early groups, to achieve increased engagement and to explore concepts more in depth. Field notes and summaries were recorded after each session and incorporated into the analysis. Areas of interest were explored in subsequent groups, until data saturation occurred. Internal validity and reliability were achieved by questions about the same issues being asked numerous times, in an appropriate, non-leading way, producing similar findings in different settings. Core questions are found in Table 3.1.

Focus groups’ discussions were recorded, de-identified and transcribed verbatim. Transcripts were coded and analysed for themes.

The study incorporated standards of integrity, beneficence, and respect. The need for community consultation, community benefit and cultural sensitivity were acknowledged 10 with participating AHSs receiving written and verbal reports about their own data. System information, not individual information, was shared to assist quality improvement.
Table 3.1: Core questions asked about medicines

<table>
<thead>
<tr>
<th>Item</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>How do you feel about taking medicines?</td>
</tr>
<tr>
<td>2.</td>
<td>Do you know what your medicines are for and how to take them?</td>
</tr>
<tr>
<td>3.</td>
<td>Would you like any further information about your medicines?</td>
</tr>
<tr>
<td>4.</td>
<td>If you need to know more about your medicines, who do you ask, and why?</td>
</tr>
<tr>
<td>5.</td>
<td>How do you manage your medicines?</td>
</tr>
<tr>
<td>6.</td>
<td>What challenges do you face around managing your medicines?</td>
</tr>
<tr>
<td>7.</td>
<td>Does the pharmacist or doctor give you any written information about your medicines?</td>
</tr>
<tr>
<td>8.</td>
<td>What role does the pharmacist play in helping you with your medicines?</td>
</tr>
<tr>
<td>9.</td>
<td>What would help you to manage your medicines?</td>
</tr>
</tbody>
</table>

3.3.3 Results

Eighteen semi-structured focus groups were conducted with 102 Aboriginal and Torres Strait patients at 11 AHSs in Queensland, Northern Territory, South Australia, New South Wales and Victoria.

All participants wanted to know more about their specific medicines and about medicines generally. Most participants felt they received minimal or no information about their medicines. Many had very little understanding of why they took medicines and the purpose of these medicines. The statement, “I don’t know why I take them”, was echoed by over
70% of participants. Some participants knew that they took medicines for their “heart” or for their “diabetes” and knew when they had to take these medicines, but no participants felt they had had potential side-effects or drug interactions adequately explained.

Most of the focus group participants expressed a strong dislike for taking multiple medicines. Comments such as “I don’t like taking medicines” and “I hate them, there are too many” were common. One participant echoed the concerns of many in her statement, “I get a bit concerned because I’m taking a lot of things. Is it necessary to take all these things?”

The taking of multiple medications simultaneously and the potential for drug interactions concerned participants. Many discussed spreading the doses of their tablets as they believed this might negate or minimise potential interactions.

“I don’t know if my tablets all go together. Does one tablet knock out the benefit of another?”

Issues relating to duration of therapy, dosage and allergy were also discussed. There was some confusion over when and if medications could be ceased. Many participants expressed interest in lifestyle measures that might reduce medication usage, for example, “When I had my cholesterol checked it was good, so I was thinking if it was good, why should I be taking them?”

Most participants acknowledged that it was important to take their medications, and many endeavoured to take their medications regularly. Despite this, many said that on occasions they forgot. Many relied on Dose Administration Aids (Webster packs or Dosette boxes), or reminders from family members and carers, to assist them to manage complex medication
regimens. “When I have to take them three times a day, that’s when I muck up because every other thing comes in the way.”

Managing multiple medicines when travelling away from home was problematic for most, especially when it meant negotiating across both Section 100 and Close the Gap medication schemes. “I get my tablets free at home but when I go to the city I have no prescription and then they want me to pay.” There was also criticism of the rules and dispensing protocols at the pharmacy and the difficulty of seeing a doctor for a new prescription.

Many of the participants acknowledged that others in their communities also struggled to manage their medicines. Some community members elected not to take medicines; others tried to be adherent with their medications but found the barriers too great. Distrust and fear of western medicine, family trauma, financial difficulties, lack of transport, distance to the pharmacy and lack of understanding about medicines were reasons given for lack of medication adherence.

“Some people are not very interested in their medicines. They have too much worry.”

“Some people are frightened of taking tablets, thinking if you take them, you die.”

The majority of the focus group participants said that they did not ask questions about their medicines because they either did not know what to ask, were too shy or found it “shameful to take so many tablets”. Those that did ask questions, usually did so of the doctor rather than the pharmacist as most participants felt they had a better relationship with the doctor than with their pharmacist. Some remote participants had little or no access to a pharmacist. Some participants felt the pharmacist was too busy. A number of participants commented on the lack of privacy in many pharmacies, stating, ”It is
embarrassing if everyone hears your business.” The few participants who had had a Home Medicines Review found it an extremely useful and empowering experience. “Time with a pharmacist empowers you to ask more questions.”

All the participants stated that they found generic brand substitution, the varied tablet appearances and different names, very confusing. Some rural and urban participants were prepared to pay for the more expensive branded product but were rarely given the opportunity.

“I’d rather pay for the one I know. Often I say I don’t want the cheaper brand but they give it to me anyway.”

All participants stated that they were rarely given written information about their medications. Often they tried to read package insert information but found the print too small, the information hard to understand and the lists of side-effects worrying. Simplified, jargon-free written resources were preferred. “It would be good to have something to take home, that I can read and understand, without too many big, technical words, that I can show my family.”

All participants agreed that communications by doctors and pharmacists with Aboriginal and Torres Strait Islander people about medicines were often incomplete or ineffective. “He tells me the basics but I want to know more.” Most felt that if they were given more information, improved medication adherence would result. “If I know more, I feel more confident and try harder to take my medicines.”

The majority of focus group participants in this study were proactive in the management of their medicines and were keen to have better understanding of their medicines.
3.3.3 Discussion

Aboriginal and Torres Strait Islander people are hugely diverse and they are not all represented in the study. Therefore, it is difficult to extrapolate findings to all Aboriginal and Torres Strait Islander people. However, the sample size was larger and more representative than many studies with Aboriginal participants, and therefore this study has merit.

Consistent themes were identified across all settings. These themes were: the difficulty of managing multiple medicines; the need for more information, written and verbal, about medicines, to inform patient choices; disempowerment to ask doctors and pharmacists for information about medicines; lack of satisfaction of interactions with doctors and pharmacists about medicines; and the difficulty of negotiating the health system. The extent of the homogeneity of findings about medication issues was surprising across the varied settings and adds validity to findings.

Further studies should aim to capture a broader range of participants by using translators. Further investigation is needed to determine whether the findings from this study apply to non-represented groups.

3.3.4 Conclusion

Complex medicine regimens result in many Aboriginal and Torres Strait Islander patients finding medicines confusing and difficult to manage. More comprehensive information, verbal and written, about medicine indications, mechanisms of action, potential side-effects, drug interactions and duration of therapy, is needed. Currently, communications by the doctor and the pharmacist with these patients about medicines are often incomplete.
or ineffective. More culturally appropriate, jargon-free written resources about medicines are required. Greater understanding and empowerment about medicine choices seem to be likely to improve medicine adherence.

Dispensing protocols, the lack of pharmacist interaction, and the physical settings of community pharmacies have made it difficult for some Aboriginal and Torres Strait Islander patients to have productive relationships with pharmacists. Pharmacists through cognitive pharmacy services, such as Home Medicines Review, have an opportunity to build relationships, increase patients’ knowledge about their medicines, and assist Aboriginal and Torres Strait Islander patients with medication understanding and treatment choices.
3.3.5 References


Chapter 4

Aboriginal and Torres Strait Islander perspectives of Home Medicines Review

4.1 Introduction to chapter

The paper in this chapter reports the findings of the data analysis of 18 semi-structured focus groups with 102 Aboriginal and Torres Strait Islander participants in 11 Aboriginal Health Services.

This chapter contains an original research paper that has been published in a peer-reviewed journal. This paper shares some important findings about Aboriginal and Torres Strait people’s perspectives of the Home Medicines Review program (HMR). It explains the HMR program and reports the participants’ awareness, opinions, and perceived benefits of and barriers to HMR. In the paper I also explore participants’ suggestions for an “improved” or more accessible medication review model.

This study confirmed reports that most Aboriginal and Torres Strait Islander people had little or no access to HMR. Seventy-seven percent of participants had not experienced an HMR. They are referred to in this paper as “Non Users”. The processes of HMR were explained to Non User participants before their opinions were sought. I specifically chose to conduct some focus groups in Aboriginal Health Services (AHSs) in which I knew HMRs were being conducted so that I could explore experiences of “User” participants who had had an HMR. This resulted in a skewed sample, with 20% of participants in this study having
an HMR. The number of participants in User and Non User focus groups can be seen in Table 4.1. There are no accurate, available data on how many Aboriginal and Torres Strait Islander people have had HMRs, but it is far less than 20% of the Aboriginal and Torres Strait Islander population.

4.1.1 What is known on this subject?

There have been numerous studies examining the efficacy, and the barriers against and facilitators to HMR uptake in non-Indigenous population groups. There has been some evaluation and reporting that Aboriginal and Torres Strait Islander people are under-utilising the HMR program. However, there has been very little research to explore why Aboriginal clients are not accessing HMRs and how an increase in HMR accessibility for Aboriginal and Torres Strait Islander people might be achieved.

4.1.2 What does this study add?

This study explores Aboriginal and Torres Strait Islander perspectives on the usefulness or otherwise of HMR. It informs design for a medication review program which is more accessible, acceptable and effective for Aboriginal and Torres Strait Islander people.

4.1.3 Reference

Swain L, Barclay L. An exploration of Aboriginal and Torres Strait Islander perspectives of Home Medicines Review. Rural and Remote Health 15:3009 (Online) 2015.

A copy of the published paper can be found in Appendix E.
4.2 Manuscript abstract

Exploration of Aboriginal and Torres Strait Islander perspectives of Home Medicines Review

Introduction

In Australia, Home Medicines Review (HMR) has been found to be an important tool to raise awareness of medication safety, reduce adverse events and improve medication adherence. Aboriginal and Torres Strait Islander people are “under-serviced” by the HMR program and are the most likely of all Australians to miss out on HMRs despite their high burden of chronic disease and high rates of hospitalisation due to medication misadventure.

The goal of this study was to explore Aboriginal and Torres Strait Islander perspectives of the Home Medicines Review program and their suggestions for an “improved” or more readily accessible model of service.

Methods

Eighteen semi-structured focus groups were conducted with 102 Aboriginal and Torres Strait Islander patients at 11 Aboriginal Health Services (AHSs). Participants who were multiple medication users and understood English were recruited to the study by AHS staff. Seven focus groups were conducted for people who had already used the HMR program (User, n=23), and 11 focus groups were conducted for people who had not had an HMR (Non User, n=79). Focus group discussions were recorded, de-identified and transcribed. Transcripts were coded and analysed for themes.
Results

Focus group participants who had not had an HMR had little or no awareness of the HMR program. All the participants felt that lack of awareness and promotion of the HMR program were contributing factors to the low uptake of the HMR program by Aboriginal people.

Most participants felt that an HMR would assist them to better understand their medicines, would empower them to seek information about medicines, would improve relationships with health professionals and would increase the likelihood of medication adherence. Most of the User participants reported that the HMR interview had been very useful for learning more about their medicines. However, many reported that they found the process confusing and confronting.

The majority of participants felt HMRs for Aboriginal patients should be organised by Aboriginal Health Service staff, with patients being offered a choice of location for the HMR interview. Participants identified that Aboriginal Health Workers should play a key role in communication, knowledge translation, referral and follow-up.

Conclusion

Current HMR rules impede rather than facilitate HMRs for Aboriginal people. Tailoring and remodelling of the HMR program is needed to increase the awareness, accessibility, acceptability and effectiveness of the HMR program for Aboriginal and Torres Strait Islander people.
4.3 Manuscript full text

Exploration of Aboriginal and Torres Strait Islander perspectives of Home Medicines Review

4.3.1 Introduction

The rate of potentially preventable hospitalisations for Indigenous people is 4.9 times the rate for other Australians, with more than half (55%) of these hospitalisations being for chronic conditions (1). Under-use of medicines contributes to poorer control of chronic disease states and higher hospital admissions, morbidity and mortality for Aboriginal and Torres Strait Islander people (2, 3).

Factors which impact Aboriginal people’s engagement with health services and medicines are various. They may include the cost of multiple medicines, the distance to services, poverty, racism, dispossession, lack of control, the stigma associated with a diagnosis of chronic disease, educational disadvantage, shared crowded households, increased patient mobility, and inadequate health professional support (4, 5). Compounding these may be issues of language, health literacy, cultural issues, concurrent use of bush or traditional medicines, lack of continuity of care and the absence of strong relationships with health practitioners (6). Failed patient-clinician interactions, poor healthcare delivery systems, complex medicine regimens and struggles with social and emotional wellbeing decrease the likelihood of effective management of medicines (7, 8).

The Aboriginal Health Service Remote Access (AHSRA) program was established in 1999, providing free Pharmaceutical Benefit Scheme (PBS) medicines, and so improving medication access, for remote Aboriginal people. Two other PBS co-payment schemes, the
QUMAX or Quality Use of Medicines Maximised for Aboriginal People (9) and the Close the Gap (10) programs, were commenced in 2008 and 2010 to provide non-remote Aboriginal people with financial assistance with their medicines. These programs, whilst reducing some financial barriers to medicine access, are not sufficient to address all barriers. Without improved understanding of medicines and increased medicine adherence, chronic disease will remain poorly controlled (11, 12). Engagement of patients in their healthcare goals, communication of medicine information and simplification, of complex therapeutic medicine regimens also need to be achieved (5).

Clinical pharmacists and the cognitive pharmacy services they deliver, such as patient medicine education, medicine reviews, drug interaction checking, dosage and adverse-effect monitoring, medication reconciliation and clinical interventions, can make valuable contributions to improving health outcomes (13). Pharmacists need to develop increased understanding of Aboriginal culture, Aboriginal Health Services and their Aboriginal Health Worker staff, as well as to better understand the needs of their local community, in order to deliver effective primary health care to Aboriginal people and so maximise the therapeutic effects of prescribed medications (14).

The Home Medicines Review (HMR) program (15) is a cognitive pharmacy service, which was introduced in Australia in 2001 by the Commonwealth Government. This home-based program is designed to assist patients maximise the benefits of their medication regimens and prevent the harmful consequences of medication misuse (16). On a referral from the general practitioner (GP), an HMR trained and accredited pharmacist will visit the patient at home, and interview the patient about their medication. The pharmacist would explain the medications and their usage, and provide appropriate medication information to the
patient. The pharmacist then prepares a report of their findings, using information provided by the patient, medical information provided by the GP and the patient’s dispensing history from the pharmacy. The accredited pharmacist reports the findings and their recommendations to the referring GP. This report forms the basis of the Medication Management Plan which the GP may implement with the patient on their next visit. The GP and pharmacist claim payment from Medicare Australia.

Most patients would benefit greatly from an HMR consultation after discharge from hospital when medication confusion and incidents of medication misadventure increase. There may also be occasions when patients are unable to access primary health care services and consult a GP. For these reasons there has been some debate around the need for various health professionals to be permitted to initiate and refer patients for Home Medicines Review. To date, program rules still allow only GPs to refer patients for HMRs.

Home Medicine Reviews have been found to be an important tool. They raise awareness of medication safety and ultimately reduce adverse events and unnecessary hospital admissions (16). Lack of medication information often leads to failure of the patient taking the medicine correctly, which can in turn lead to therapeutic failure or unwanted/dangerous effects from medications (5). An HMR creates an opportunity for the patient to receive medication counselling from an accredited pharmacist. The HMR is the perfect platform to improve medication concordance and reduce medication misadventure in those who have complex medication needs (17, 18). Whilst most HMR studies have found very positive consumer acceptance of the HMR program, some others have reported consumer ambivalence (19).
Evaluations of the Home Medicines Review program provided by consultants employed by the government (16, 20) identified that Aboriginal and Torres Strait Islander peoples had been “under-serviced” by the HMR program and are the most likely of all Australians to miss out on HMRs, despite having the highest rates of hospitalisation due to medication misadventure (16, 20). There are no accurate, accessible data documenting the number of HMRs being undertaken with Aboriginal patients. However, anecdotal evidence suggests that the number is still small, despite marginal increases as a result of some pharmacists working with Aboriginal Medical Services (AMSs) during the implementation of the QUMAX program from 2008 to 2012. The 2007 Campbell report (16) commissioned by the Australian Government called for the urgent introduction of a more culturally appropriate model of HMRs and for expanded HMR services to Aboriginal Australians. To date these recommendations have not been implemented.

The goal of this study was to explore Aboriginal and Torres Strait Islander perspectives of the Home Medicines Review program and their suggestions for an “improved” or more readily accessible model of service. This paper reports the analysis of the views of the Aboriginal and Torres Strait Islander people who participated and informs policy and medication initiatives for these Australians.

Very little research has been conducted in the area of medication management and cognitive pharmacy services for Aboriginal and Torres Strait Islander people or the role of pharmacists in Aboriginal health. Published research has been reviewed and has been used to situate this study.
4.3.2 Methods

This is an exploratory study of Aboriginal and Torres Strait Islander patients’ perceptions of the Home Medicines Review model. An Aboriginal advisory group was established to guide the design and data collection phases of this study. The advisory group members consisted of community elders, an Aboriginal Health Service (AHS) Chief Executive officer and two health administrators. The group advised on engagement with AHSs, focus group management, language, culture and question design.

As research and researchers have had a poor reputation in many Indigenous settings (21), AHSs were chosen as the sites for recruitment of patients and data collection because AHSs provided a culturally safe environment (22). Shyness and distrust of the unknown, non-Aboriginal researcher, was diminished by holding the focus groups in the familiar surroundings of the AHS.

Aboriginal shyness, poverty, effects of long-term discrimination and powerlessness have been identified as barriers to generating information with Aboriginal participants (23). Focus group methodology was chosen as this allows minimally structured “yarning” that gathers information through conversation and storytelling. Storytelling is the preferred communication method for many Indigenous Australians (24).

Each Aboriginal Health Service was given verbal, then written information about the project, and their management and boards were asked to approve participation in the study. Aboriginal staff members were asked to assist with patient recruitment and focus group organisation and acted as cultural brokers managing the relationship between participants and the researcher. They were vital to establishing trust and cooperation.
Eighteen semi-structured focus groups were conducted with Aboriginal and Torres Strait Islander patients (n=102) at eleven AHSs in Queensland, Northern Territory, South Australia, New South Wales and Victoria. The sites were selected for diversity and included urban (n=2), regional (n=3), rural (n=2) and remote (n=4) settings. They ranged across language groups and they varied in governance, size and service delivery models. The AHSs prescribed and dispensed medicines under different schemes, including Section 100, QUMAX and Close the Gap, and two sites had in-house pharmacists. Three Northern Australian sites were chosen to include Torres Strait Islander people representation. Table 4.1 indicates number of participants in each focus group.

Table 4.1: Participants at focus groups

<table>
<thead>
<tr>
<th>Location</th>
<th>Governance</th>
<th>No. of participants in HMR Users Focus Group</th>
<th>No. of participants in HMR Non Users Focus Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural</td>
<td>ACCHS</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Remote</td>
<td>ACCHS</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Urban</td>
<td>ACCHS</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>Regional</td>
<td>ACCHS</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>Remote</td>
<td>State Health</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Regional</td>
<td>ACCHS</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Remote</td>
<td>ACCHS</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>Urban</td>
<td>ACCHS</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Rural</td>
<td>ACCHS</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>Location</td>
<td>Governance</td>
<td>No. of participants in HMR Users Focus Group</td>
<td>No. of participants in HMR Non Users Focus Group</td>
</tr>
<tr>
<td>----------</td>
<td>-----------------</td>
<td>---------------------------------------------</td>
<td>------------------------------------------------</td>
</tr>
<tr>
<td>Remote</td>
<td>State Health</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Regional</td>
<td>ACCHS</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>23</td>
<td>79</td>
</tr>
</tbody>
</table>

Key: ACCHS=Aboriginal Community Controlled Health Service; HMR=Home Medicines Review

The researcher specifically targeted some AHSs where HMRs were being conducted so that she could explore participants’ HMR experiences at these sites, and thus twenty percent of focus group participants in this research had received an HMR. The overall percentage of Aboriginal and Torres Strait Islander peoples having had an HMR in Australia is much lower than this figure.

Participants (n=102) of AHSs (n=11) who were multiple medication users and understood English were recruited to the study by AHS staff. Although no formal demographic data were collected, the researcher recorded in field notes that 75% of participants were female, approximately 90% of participants appeared to be aged over 40 years, and about 70% appeared literate in written English.

Participants were given written material explaining the study by AHS staff, before consent was sought. The researcher confirmed understanding, willingness to participate and permission to record proceedings at the beginning of each focus group before formal consent was obtained.
Two types of focus groups were conducted. Seven focus groups were conducted for people who had already used the HMR program (User, n=23) and 11 focus groups were conducted for people who had not had an HMR (Non User, n=79). All focus groups were conducted by the first author. The challenge of conducting high quality focus groups was not underestimated, and analysis of participant interaction as well as content was recorded in field notes after each group session.

In the User focus groups Home Medicine Review Users were asked to reflect on their experience of having an HMR, and then on their satisfaction or lack of satisfaction with their experience, as well as what they believed might be barriers and facilitators for other Aboriginal and Torres Strait Islander people in accessing the HMR program. Non User focus groups received a description of the HMR program rules and processes. The group then discussed their perceptions of the HMR program, the barriers and facilitators of the HMR model, and strategies to increase accessibility of the HMR program for Aboriginal and Torres Strait Islander people.

Focus group questions were modified slightly as a result of early groups and concurrent analysis, to ensure all content raised in early groups was explored. See Table 4.2 for Focus Group Questions.

Focus group recordings were de-identified and transcribed verbatim. Transcripts were coded and analysed for themes. Analysis occurred concurrently. Themes were identified by repetition of words and phrases, and shared meanings, evident across data. Findings were discussed with my other researchers to ensure the meanings generated were agreed and mutually shared.
### Table 4.2: Core Home Medicines Review questions

<table>
<thead>
<tr>
<th>Item</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>HMR Non Users</strong></td>
</tr>
<tr>
<td>1.</td>
<td>How do you manage your medicines?</td>
</tr>
<tr>
<td>2.</td>
<td>Have you ever heard of a Home Medicines Review?</td>
</tr>
<tr>
<td>3.</td>
<td>Now that I have explained how a Home Medicines Review works, what do you think might be the advantages or disadvantages of such a program?</td>
</tr>
<tr>
<td>4.</td>
<td>Who do you think should organise the HMR interview?</td>
</tr>
<tr>
<td>5.</td>
<td>How do you feel about the HMR pharmacist visiting you at home?</td>
</tr>
<tr>
<td>6.</td>
<td>If available, would you or one of your family consider having an HMR? If yes, what do you hope some of the outcomes might be?</td>
</tr>
<tr>
<td>7.</td>
<td>Why do you think Aboriginal and Torres Strait Islander people are low users of this program?</td>
</tr>
<tr>
<td>8.</td>
<td>Can you suggest ways we could increase the number of Aboriginal and Torres Strait Islander people having HMRs?</td>
</tr>
<tr>
<td></td>
<td><strong>HMR Users</strong></td>
</tr>
<tr>
<td>1.</td>
<td>How do you manage your medicines?</td>
</tr>
<tr>
<td>2.</td>
<td>What were your thoughts when your Doctor organised you a Home Medicines Review?</td>
</tr>
<tr>
<td>3.</td>
<td>Who organised your HMR?</td>
</tr>
<tr>
<td>4.</td>
<td>How did you feel about the pharmacist visiting you at home</td>
</tr>
<tr>
<td>Item</td>
<td>Questions</td>
</tr>
<tr>
<td>------</td>
<td>------------</td>
</tr>
<tr>
<td>5.</td>
<td>How was the pharmacist interview?</td>
</tr>
<tr>
<td>6.</td>
<td>What did you find were the outcomes of the HMR?</td>
</tr>
<tr>
<td>7.</td>
<td>Would you recommend a HMR to others? Why/why not?</td>
</tr>
<tr>
<td>8.</td>
<td>What do you think were the advantages/disadvantages of having an HMR?</td>
</tr>
<tr>
<td>9.</td>
<td>Why do you think Aboriginal and Torres Strait Islander people are low users of this program?</td>
</tr>
<tr>
<td>10.</td>
<td>Can you suggest ways we could increase the number of Aboriginal and Torres Strait Islander people having HMRs?</td>
</tr>
</tbody>
</table>

Focus groups continued and concepts were explored until no new findings were being generated and thus saturation of data had occurred (25). Field notes and summaries written at the end of each focus group were also incorporated into the analysis.

Questions about the same issues produced similar findings in different settings despite urban/rural variability. The homogeneity of most findings was surprisingly strong across the varied settings and groups, adding strength to the findings. There was some small variability relating to more general issues of remoteness, such as lack of availability of health professionals and increased usage by patients of local Aboriginal language. There was no significant difference in understanding of medicines or perceptions of the Home Medicines Review program across the varied geographical settings, and thus it has not been necessary to discuss findings according to location.
Ethics approval was sought and granted from the University of Sydney Human Research Ethics Committee (11504), the Aboriginal Health & Medical Research Council (NSW), the Menzies School of Health Research (NT, SA) and the Aboriginal Health Research & Ethics Committee (Victoria).

4.3.3 Results

Most participants reported difficulties in managing their multiple medicines, and many expressed a desire to better understand their medicines (26).

Most of the User participants reported that the HMR interview had been very useful for learning more about their medicines. However, many reported that they found the process confusing and confronting, as no one had explained what was to happen or for what purpose an HMR was being conducted. Most commented they would have liked some follow-up from the pharmacist after the HMR interview, such as a phone call, written report, written medicine information or another meeting.

The majority of the Non User participants believed that Home Medicines Review could be a useful tool for Aboriginal people, if the process was managed in a culturally appropriate way. Six participants felt the need for an HMR implied “You are not doing the right thing”.

User and Non User participants suggested ways the HMR program needed to be implemented to increase the uptake of this program by Aboriginal and Torres Strait Islander people as cultural issues and living circumstances are not currently addressed by the rules governing the process.
Findings from the Aboriginal patients about Home Medicines Review are grouped into two main themes and their subthemes. The main themes are cultural considerations and adapting the HMR process to suit Aboriginal peoples’ needs.

**Cultural considerations for HMRs with Aboriginal patients**

“It works to be organised by the health service”: Most participants, both HMR Users and Non Users, were adamant that they would only agree to having an HMR if it was suggested and organised by their AHS, because “then you can trust that the pharmacist is appropriate and that it [HMR] is for your benefit”. The AHS was described as a culturally safe service that understood the needs of its Aboriginal patients.

Aboriginal people’s shyness was seen as a barrier to some patients having a HMR. “Some people are shy, some people feel threatened by people they don’t know.” The patients often relied on the AHS to assist them organise appointments, navigate the health system and broker relationships with health professionals.

*The health service people are people you trust, people that look after you, people you know. If they organise it then it must be okay. Also they know about our family, where to find us and can organise transport and the right time.*

“It can’t just be anyone”: As long as the HMR interview had been organised by the AHS the participants were happy to engage with the pharmacist, even when he/she was a “stranger”.

Participants felt that it was important for the AHS to form a working relationship with a specific pharmacist, so that this pharmacist could learn to relate to AHS staff and patients.
“I would just like to be given one pharmacist.” It was important that the pharmacist had a good attitude and respected Aboriginal patients. Many felt it would be desirable, and some felt imperative, for this pharmacist to receive cultural awareness training from the AHS. “It can’t just be anyone. They have to be culturally appropriate or they could offend someone.”

“Sometimes you don’t want someone in your home”: Participants were evenly divided about whether they would be comfortable to have an HMR interview occur in their home or prefer to have it conducted at the health service or clinic. Some discussed the convenience of having it at home for the very elderly and disabled, and others said the benefits included “You’re comfortable in your own home” and that “In my house I’ll open up, I’m the boss kind of thing.” Fifty per cent, however, were adamant that “Sometimes you don’t want someone in your home” and stated that “A lot would rather have it at the clinic” because “A lot of people don’t like strangers in their house” and “Aboriginal people do get shamed if they haven’t cleaned up” and “I have a large family coming and going and sometimes it would be noisy and not very private.”

All participants agreed that to give people having an HMR “a choice [of location] would be a good idea”. Some participants discussed the possibility of having an HMR in the garden, in the park or down by the river. The majority felt that a private space at the AHS was probably a very suitable option for many Aboriginal patients. The majority of study participants agreed that the name “Home Medicines Review would put some people off having one because they think they have to have it in the home”.

“The health worker is the key”: Most participants indicated that they would like to have an Aboriginal Health Worker (AHW) present at the HMR interview with the pharmacist. It was felt that an AHW would break down barriers and aid understanding. They “break the ice”
and “they know about you” and “diffusing people’s fear helps them to understand”. It was also felt that an AHW would aid communication by prompting the right questions, translating and interpreting jargon and explaining concepts. “The health worker breaks things down for us, so that we can understand.”

The AHW, as the most “continuous” member of the health care team, was seen as a useful resource for follow-up questions and reminders. “They can help us remember to take our medicines” and “They can ask the doctor for us” and “They can explain it later if we don’t understand”.

Having an AHW present at a HMR interview was seen as even more imperative when the pharmacist was of a differing gender from the patient. A male AHW should attend a male patient and a female AHW attend a female patient to ensure sensitivities around “men’s business” and “women’s business” are respected. Most stated that the gender of the pharmacist didn’t matter as long as they were accompanied by the appropriate AHW. However, a few male participants stated that they would not discuss private health matters with a female pharmacist, even if an appropriate AHW was present.

It was considered important to give patients the choice of a specific AHW to attend the HMR interview. Sometimes the AHW was a community member and the patient stipulated, “I don’t want her to know my business” and “sometimes because it’s not nice in front of that health worker if they’re not comfortable with that health worker” or if there is “family friction”. The choice of which health worker should be present was very important.

**Group HMRs:** Family members, carers and other community members were often seen as integral to the management of medication and assisting in reminding patients to take their
medicines. A number of participants said when having an HMR they would prefer a family member or carer also to be present. “Sometimes it would be good to have someone else there to help me remember.” It was suggested that family members and carers, as nominated by the patient, should be formally invited to attend the HMR so they feel “welcome”. A small number of participants also stated they would like to have their HMR or a medication session in a group. “Being with other people with similar problems helps us to learn. They might ask things we need to know about.” They commented that it would be “great to get together with other diabetics to see if they have the same issues”.

Adapting HMRs to Aboriginal patients’ needs

Explain the process: Focus group participants who had not had an HMR had little or no awareness of the HMR program. All the participants felt that lack of awareness and promotion of the HMR program were contributing factors to the low uptake of the HMR program by Aboriginal people. “What is an HMR?” and “No one knows that it is available” were common sentiments. It was also suggested that the name, “Home Medicines Review”, would deter some patients as they would not be comfortable with having a pharmacist visit them at home.

Participants who had had an HMR spoke of some “nerves” and apprehension before the pharmacist’s visit and some stated that they were unclear as to the purpose of the pharmacist’s visit. More communication and fact sheets outlining the process would have been helpful.

A few participants expressed the view that more consultation and communication between government and community around health program design would have been “helpful”.

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About half of the participants said they would like follow-up, and feedback from the HMR pharmacist after the interview, and a few even said they would like to see a copy of the report sent to the doctor.

Most participants who had had an HMR thought that an HMR was just a “chat” with a pharmacist about their medicines. Only two participants realised that the pharmacist wrote a report for the doctor and that subsequent medication changes might relate to the pharmacist’s recommendations. Mostly they felt that “Afterwards nothing happened. I don’t think anything changed”.

**Referrals:** Participants felt that many patients were unlikely to take referral documents from a doctor to the pharmacy and then directly liaise with an accredited pharmacist to make an appointment, as is suggested in the HMR program rules. They felt that “If it’s too much mucking around for us, it won’t happen.”

Many participants, and all those from the more remote areas, suggested that an Aboriginal Health Worker (AHW) or AHS nurse should be able to write an HMR referral, as it was the AHWs and nurses who knew them “best”, and were the health professionals with whom they interacted most often. It was the AHWs and nurses who offered continuity of care, whilst many doctors “come and go”.

It was the AHW who they felt best understood if they needed assistance with medication management, assistance with transport to attend the HMR interview, which family member to invite and when to make an appointment with the GP. As the AHW was seen as the person who would be mostly likely to follow up after the HMR, it was viewed as important that the AHW was also involved in and aware of the HMR referral.
**Medication specialists:** AHWs were seen as the most accessible and most approachable of the health professionals at the AHS, and a few participants commented, “We need a health worker that specialises in medicines”.

*We need health workers to be trained as experts, to be able to have this knowledge to link between the pharmacy, the doctor and the patient’s journey in the community so that all the questions can be answered.*

**Written resources:** None of the participants who had had an HMR had received any written material. Most believed “It would have been good if the pharmacist had left some written information, simple to understand, to show to my family and read later”. A number of participants throughout the focus groups commented on the need for simple, jargon-free, culturally appropriate medication resources to assist in the understanding of their medication and health management.

Many participants expressed the desire for a comprehensive medicines list that could be kept in their wallet or bag.

**4.3.4 Discussion**

This study showed that many Aboriginal people were keen to have a pharmacist working within their health service. They felt that a pharmacist working with their Aboriginal Health Service would be someone with whom they could develop rapport and trust, and who would be available to deliver medication reviews, medical education and other clinical services to Aboriginal patients.
The current HMR model and associated rules are restrictive and not conducive to utilisation of the program by Aboriginal and Torres Strait Islander people. Issues of referral, organisation, location, reimbursement and follow-up need to be addressed to increase the number of Aboriginal people who can use this program. As in studies with non-Indigenous patients, barriers to HMR included pride and independence, confidence issues with an unknown pharmacist, concerns regarding the home visit, and lack of information about the program (27). There are facilitators identified in this study which may increase the uptake of HMRs with Aboriginal and Torres Strait Islander patients, improve health and have economic benefits.

Home Medicine Review rules dictate that referrals can only be written by a GP (15). Previous studies have identified that GPs’ lack of understanding of the HMR process and GPs’ time constraints have resulted in low HMR initiation rates (28, 29). In remote areas of Australia GPs are often scarce or on short-term contracts, resulting in lack of rapport and lack of continuity of patient care. Remote GPs need to prioritise acclimatisation, cultural orientation, medical emergencies and acutely ill patients, as well as manage chronic disease. Referrals for HMRs are very low in such areas. In urban and rural AHSs the GPs are often overloaded with complex patients with high disease burden. Long and complex patient consultations may result in low prioritisation of HMRs and low numbers of HMR referrals. Participants in the study identified that they most commonly discussed their medicines with the nurses or AHWs, with whom they more frequently engaged, than with their GPs. AHWs and nurses are best placed to identify patients at risk of medication mismanagement, and therefore program rules need to allow AHWs and AHS nurses to write an HMR referral.
The study confirmed the important role that Aboriginal Health Services play in the primary healthcare for Aboriginal and Torres Strait Islander people (30). AHSs were described as comfortable, safe environments which understood and addressed Aboriginal patients’ needs, and acted as the broker of services to the community. Study participants identified that it was the AHS who should organise the HMR interview and organise follow-up after the interview. It was through the AHS that culturally appropriate information about the HMR process and written information about medicines should be distributed. It was the AHS, commonly described as the clinic, which was identified as the most culturally safe place for the HMR interview to occur. Studies show that having pharmacists integrated in clinics or medical practices has strong patient support and results in improved patient outcomes (31, 32).

The role of Aboriginal Health Workers was seen as pivotal to the success of an HMR by the study participants, reinforcing previous literature which has described the important role of AHWs in brokering communication between health professionals and Aboriginal patients (33). AHWs were described by participants as the health professionals who could best identify the patient need for an HMR, the most trusted organisers, the most effective communicators and the most likely ongoing source of information about medicines. There is currently no reimbursement for AHW involvement in the HMR process. Often, AHWs work across numerous programs within the AHS, including early childhood, sexual health, mental health and healthy lifestyle promotions. They are often overburdened with work commitments, and often attend to community health needs out of work time. To ensure the AHWs’ time is allocated to medication issues and involvement in HMRs, the HMR program needs to be able to reimburse the AHSs for their involvement in medication
management roles. A number of participants suggested the need for some AHWs to specialise in medicines, reinforcing previous studies which have suggested more AHW medication training (34, 35).

Group medical consultations are a new innovation being used to enhance patient engagement and to address issues of GP shortage and overload due to ageing populations and increasing burdens of chronic disease (36, 37). Patients who have received care in groups reported improvement in health outcomes, improved sense of trust in physicians, better co-ordination of care, better community orientation, and more culturally competent care [38]. A few participants in this study identified that they would like to receive medication information as a group. They felt an HMR interview could be a more effective education session if conducted with a group of patients with similar medical conditions, and with the pharmacist, AHW and possibly the nurse and doctor also participating.

Study participants strongly supported the HMR program, stating that the HMR program or similar could greatly assist Aboriginal people manage their medicines and improve their health. More funding and significant time and resources need to be invested in medication management programs for Aboriginal patients. The current HMR program has been designed with little or no understanding of Aboriginal culture and little or no input from Aboriginal people. There is a need to design and implement cognitive pharmacy services which can effectively deliver medication assistance in urban, rural and remote settings and to Aboriginal and Torres Strait Islander communities. The funding for this program needs to be uncapped to ensure viability, sustainability and confidence is invested in this program.

The study was limited by English language requirement for participation. The participants were selected by the AHS staff, not randomly drawn or selected. It is suspected that AHS
staff approached those with whom they had stronger relationships and those they felt would be effective focus group participants. This may have caused some bias. A wide range of sites were used to try to maximise variability. Despite diversity of settings there was considerable consonance across responses. The views of Aboriginal people who do not attend AHSs have not been captured and therefore it is difficult to extrapolate findings to all Aboriginal and Torres Strait Islander people. However, the sample size was larger and more diverse than many studies with Aboriginal participants and therefore has merit.

4.3.5 Conclusion

Increasing HMRs for Aboriginal and Torres Strait Islander people has the potential to increase medication knowledge and medication adherence, and therefore improve chronic disease management.

The current HMR program rules impede rather than facilitate HMRs for Aboriginal people. Changes needed to increase the uptake of HMRs by Aboriginal and Torres Strait Islander people include promotion to increase awareness of HMRs; providing leaflets to patients outlining the HMR process; allowing an HMR referral to be written by a nurse or AHW; facilitating the HMR interview by allowing choice of location, AHW and family member; and reimbursing AHSs for staff organisation and attendance at HMR interviews and providing HMR follow-up to patients. It is suggested that the HMR program be remodelled and renamed after consultation with Aboriginal and Torres Strait Islander people.

Solutions which would assist with health workforce shortages, managing the increasing burden of chronic disease and funding shortfalls, include employing pharmacists within
AHSs, training AHWs to specialise in medicines and reimbursing pharmacists to conduct individual or group medication education sessions.

If the Australian Government is serious in addressing the health inequities that exist for Aboriginal and Torres Strait Islander people it needs to invest in medication education strategies which will assist Aboriginal people to manage their medicines. The Home Medicines Review program could be a useful tool, but tailoring of this program is needed to increase awareness, accessibility, acceptability and effectiveness for Aboriginal and Torres Strait Islander people. Until the government engages Aboriginal people to assist in health program design it will continue to exclude Aboriginal people from mainstream programs, such as Home Medicines Review, and continue to increase the inequity.

4.3.6 Acknowledgements

Sincere thanks to the members of the Aboriginal advisory panel, the Aboriginal Health Service staff and focus group participants who gave of their time so generously to assist this research. Travel for this project, was partially funded by a Small Projects Grant from the Department of Health and Ageing as part of the Research and Development Fund managed by the Pharmacy Guild of Australian under the Fourth Community Pharmacy Agreement 2010.
4.3.7 References


Chapter 5

Perspectives of Aboriginal Health Service health professionals on Home Medicines Review

5.1 Introduction to chapter

This chapter reports the findings of the data analysis of 31 semi-structured interviews with 14 Aboriginal Health Workers (AHWs), five nurses, one practice manager and 11 GPs in 11 Aboriginal Health Services (AHS).

This chapter contains an original research paper that has been published in a peer-reviewed journal.

This paper analyses the attitudes and perceptions of AHS service providers towards medication review, and specifically the Home Medicines Review (HMR) program, for their clients. Although there was strong health professional support for HMRs, very few HMR referrals were written or organised for their clients. Lack of relationship, heavy workloads and complicated HMR processes were some of the barriers to implementation of HMRs by the AHSs. Perceptions that pharmacists lacked cultural sensitivity were also reported. Table 5.2 in the paper contains a number of health professional quotes which summarise the main perceived benefits and barriers of the HMR program.

Aboriginal Health Service health professionals made recommendations for changes to the medication review model. The findings and AHS service provider suggestions are discussed in some detail and have been represented diagrammatically to show the components
needed for an Aboriginal and Torres Strait Islander medication review model (See Figure 5.1 in the paper).

The perspectives of Aboriginal and Torres Strait Islander patients from Chapter 4, when combined with findings from AHS health professionals, as discussed in Chapter 5, inform how the HMR model needs to be modified to become more culturally appropriate, and therefore more accessible, for Aboriginal and Torres Strait Islander people.

5.1.1 What is known on this subject?

Previous research has analysed GP attitudes to HMR for their non-Indigenous clients. There is no published research which has analysed the views of AHS health professionals about the use of HMR for their Aboriginal and Torres Strait Islander clients.

5.1.2 What does this study add?

This study explores both attitudinal and procedural barriers and enablers to HMR usage, thus informing future design of medication review models for Aboriginal and Torres Strait Islander people.

5.1.3 Reference

Swain L, Barclay L. “Medication reviews are useful, but the model needs to be changed”: perspectives of Aboriginal Health Service health professionals on Home Medicines Review. BMC Health Services Research. 2015;15:366.

A copy of this published paper can be found in Appendix E.
5.2 Manuscript abstract

“Medication Reviews are useful, but the model needs to be changed”: perspectives of Aboriginal Health Service health professionals on Home Medicine Reviews

Background

The Australian Home Medicines Review (HMR) program consists of a pharmacist reviewing a patient’s medicines at their home and reporting findings to their general practitioner (GP) to assist optimisation of medicine management. Previous research has shown that the complex HMR program rules impede access to the HMR program by Aboriginal and Torres Strait Islander clients.

This study explores the attitudes and perceptions of health professional employees working within Aboriginal Health Services (AHSs) towards the HMR program. The goal was to identify how the HMR program might better address the needs of Aboriginal and Torres Strait Islander people.

Methods

Thirty-one semi-structured interviews were conducted with health professionals at eleven diverse AHSs. Fourteen AHWS, 5 nurses, 1 manager and 11 GPs were interviewed. Interviews were recorded, de-identified and transcribed verbatim. Transcripts were coded and analysed for themes that recurred throughout the interviews.
Results

This study identified a number of barriers to provision of HMRs specific to Aboriginal and Torres Strait Islander clients. These included paternalistic attitudes of health professionals to clients, heightened protection of the GP-client relationship, lack of AHS–pharmacist relationship, need for more culturally responsive pharmacists and the lack of recognition of the AHS’s role in implementation of culturally effective HMRs.

Changes to the HMR model, which make it more effective and culturally appropriate for Aboriginal and Torres Strait Islander people, were recommended. Improved relationships between GPs and pharmacists, between pharmacists and the AHS, and between pharmacists and Aboriginal and Torres Strait Islander clients were identified as key to increasing HMRs for Aboriginal and Torres Strait Islander people.

Conclusions

Aboriginal Health Services are well-placed to be the promoters, organisers, facilitators and implementers of health programs, such as HMR, for Aboriginal and Torres Strait Islander clients.

Imbedding a pharmacist within an AHS addresses many of the barriers to HMRs. It ensures pharmacists are culturally mentored and that they build strong relationships with health professionals and clients.

The HMR program rules needed to be changed significantly if medication review is to be an effective tool for improving medication safety and adherence for Aboriginal and Torres Strait Islander people.
5.3 Manuscript full text

“Medication Reviews are useful, but the model needs to be changed”: perspectives of Aboriginal Health Service health professionals on Home Medicine Reviews

5.3.1 Background

The Australian Home Medicine Review (HMR) has been found to be an effective tool for improving medication safety, reducing adverse events and unnecessary hospital admissions (1-3). It consists of a pharmacist reviewing a patient’s medicines and reporting findings to the patient’s general practitioner (GP) to assist optimisation of medicine management. It is a “free to patient”, Australian Government managed program. An HMR referral is initiated by the patient’s GP, and then an HMR-accredited pharmacist is organised to visit and interview the patient in their home. The pharmacist sends a report of his/her findings to the GP, who then discusses recommendations and makes any appropriate medication changes in collaboration with the patient (4).

To claim funding from the Australian Government for an HMR, the GP and pharmacist must adhere to program rules (4). In the 2008 evaluation report (5) the complexity of business rules and the number of steps involved in the HMR process were identified as barriers to initiation of HMRs. The program rules stipulate the HMR referral can only be written by a GP. The GP must obtain the patient’s consent, a GP can only claim funding through the Medical Benefits Scheme after a second visit from the patient to discuss the pharmacist’s HMR report and formulate the Medication Management Plan, and the GP can only bill one out of the two consultations relating to the HMR. The suggested HMR referral form requires
the GP to specify detailed patient information, medical and medication history. GPs often confuse the suggested indications on referral forms, such as taking 5 or more regular medications, with the specific rules for HMR program eligibility (5). Rules state that a patient may only receive an HMR every 24 months or if a GP deems an HMR is specifically necessary due to significant changes to the patient’s condition or medication regimen. The latter part of this rule is rarely applied, for most GPs and pharmacists are concerned they will not receive payment if they step outside the specified 24 months. Thus, some eligible patients are not being referred for HMRs. The 24-month rule appears to have been applied due to budgetary restrictions of the program rather than as a result of any data that determine that this is an appropriate timeline for maximising medication management (6).

The HMR program rules and claim lodgement processes are also restrictive for pharmacists. The program rules have actually increased rather than decreased under the recent Fifth Government–Community Pharmacy agreement (4). HMR payments can only by claimed by pharmacists if the HMR is conducted by an HMR-accredited pharmacist, if the patient is living in a community setting, if the claim is submitted within 30 days of conducting the patient interview and the HMR-accredited pharmacist has conducted fewer than 20 HMRs within the month. Rules state that an HMR interview must occur in the patient’s home unless prior approval has been obtained. This prior approval has to be sought by the pharmacist on a case to case basis, giving full patient details, at least 10 days prior to the proposed interview date (4).

The evaluation of the HMR program in 2008 (5) included health professionals’ perspectives of the HMR program. Those interviewed described how whilst HMRs were a “good idea”, the program was not working well. Dominant themes in the evaluation report included the
complexity of business rules, time delays between HMR initiation and completion, and communication difficulties between GP and pharmacist. It reported that whilst the health professionals who had experienced HMRs were very positive, the others were mostly ambivalent. Many valued HMRs as a lower priority than a health assessment (5).

The 2008 HMR evaluation report, commissioned by the Department of Health (5), also identified that Aboriginal and Torres Strait Islander people, despite their high burden of chronic disease, were the most likely of all Australians to miss out on an HMR and that the HMR current model was not appropriate for Aboriginal and Torres Strait Islander people (5). A recent study (7) has explored the views of Aboriginal and Torres Strait Islander patients of the Home Medicines Review program. The Aboriginal and Torres Strait Islander patients in that study felt an HMR would assist them to better understand their medicines and empower them to seek information about medicines, would improve relationships with health professionals and would increase the likelihood of medication adherence. These Aboriginal and Torres Strait Islander patients concluded, however, that current HMR rules impeded rather than facilitated HMRs for Aboriginal and Torres Strait Islander people (7).

This study explores the attitudes and perceptions of health professional employees working within Aboriginal Health Services towards the Home Medicines Review program. The goal was to identify how the HMR program might better address the needs of Aboriginal and Torres Strait Islander patients. No previous HMR studies have analysed the views of health professionals working with Aboriginal and Torres Strait Islander patients.
5.3.2 Method

This qualitative descriptive study explored Aboriginal Health Service (AHS) employees’ perceptions of the HMR model. The design was appropriate for this study because it facilitated the gathering of rich, contextual data related to service delivery in AHSs. Participants included general practitioners, nurses, Aboriginal Health Workers (AHWs) and an AHS manager.

Eleven AHSs in Queensland, Northern Territory, South Australia, New South Wales and Victoria participated. The sites were selected for diversity and included urban (n=2), regional (n=3), rural (n=2) and remote (n=4) settings. They varied in governance and size. Some AHSs were initiating HMRs for their patients whilst others were not.

Each AHS was given verbal, then written information about the project, and their management and boards were asked to approve participation in the study. An interview guide was designed with key open-ended questions to encourage a natural exploratory conversation with the interviewee. The interviewer used the questions to prompt the sharing of participants’ experiences and ideas. All interviews were face to face and all conducted by the same researcher. Questions were modified to ensure all content raised in early interviews was explored subsequently.

Thirty-one semi-structured interviews were conducted at eleven AHSs. The numbers of each profession participating was influenced by staff availability and willingness to participate at each AHS. Fourteen AHWs, 5 nurses, 1 manager and 11 GPs were interviewed. See Table 5.1 for interview guide.
Table 5.1: Semi-structured interview guide

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<table>
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<tr>
<td>1. Explore attitudes to HMR program</td>
<td>How do you feel about the HMR program? How likely are you to order a HMR for a patient? How often do you order HMRs? What determines this?</td>
</tr>
<tr>
<td>2. Explore understanding of HMR processes</td>
<td>Who do you order HMRs for? Why? How do you find the HMR process? Do you have assistance from other staff members in organising HMRs? If so, how?</td>
</tr>
<tr>
<td>3. Identify reasons for ordering HMRs (benefits)</td>
<td>How useful have you found HMRs? or How useful do you think an HMR could be? What is the most useful aspect of an HMR? What feedback have you had from your patients about the HMR? How do you find the pharmacists’ reports?</td>
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<tr>
<td>4. Identify barriers to initiating HMRs</td>
<td>Is there a reason why you don’t order more HMRs? Please explain. Would you like to order more HMRs? Please explain. What are the limiting factors in referring patients for an HMR? Why do you think there are not many HMRs being conducted for Aboriginal and Torres Strait Islander patients?</td>
</tr>
<tr>
<td>5. Encourage recommendations</td>
<td>Do you believe the current HMR model is effective/not effective? Please explain. How appropriate is the HMR model for your patients? Are there any ways the model could be improved? If so, how?</td>
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Key: HMR=Home Medicines Review
Of the 11 participating AHSs in this study, three were conducting HMRs regularly, 4 occasionally and 4 not at all. Only at the three AHSs where there was a contracted pharmacist were patients being referred regularly for HMRs. One of these AHSs had a salaried pharmacist employed by the AHS for a range of clinical pharmacy roles, including HMRs. The other two had each contracted an HMR-accredited pharmacist to work to conduct HMRs, with one using a chronic care nurse and the other an AHW to co-ordinate the program. Although only 3 GPs were referring patients for regular HMRs, all interviewed GPs were aware of the HMR program although some lacked understanding of the HMR referral processes. The majority of nurses and AHWS interviewed were unaware of the HMR program.

Interviews were recorded, de-identified and transcribed verbatim. Transcripts were coded and analysed for themes that recurred throughout the interviews. Analysis occurred concurrently.

Ethics approval was sought and granted from the University of Sydney Human Research Ethics Committee (11504), the Aboriginal Health & Medical Research Council (NSW), the Menzies School of Health Research (NT, SA) and the Aboriginal Health Research & Ethics Committee (Victoria).

5.3.3 Results

The study participants who had experienced an HMR were extremely supportive of the program. The four GPs who had never referred patients for HMRs expressed reservations about the value of HMRs and concerns over the need to burden patients with another
referral. Two of the nurses interviewed were not supportive of HMRs. These nurses believed that although HMRs were “good in theory” Aboriginal patients were “not interested” and “there’s no point filling them up with a huge amount of education if they are not going to take the medicines anyway”. The Aboriginal Health Workers who had not previously been involved in HMRS were very keen to understand the details of the HMR program as they felt it would greatly assist their clients who they believed often “don’t understand how the medicines work, when they work, and they don’t take them at the right times or the right way”. Most of the interviewees were positive regarding the potential benefits of HMRs for their patients’ health.

The emergent themes, and the perceived benefits and barriers of the HMR program, are discussed below and are summarised in Table 5.2.

Table 5.2: Most common perceived benefits and barriers of the HMR program

<table>
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<tr>
<th>Benefits of HMRs</th>
<th>AHS staff comments</th>
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<tr>
<td>Increased patient understanding and confidence</td>
<td>The HMR interview is a good opportunity to iron out some confusion about medicines. (AHW)</td>
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<td></td>
<td>The clients need to know the importance of taking medicines and why they are taking them. (AHW)</td>
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<td></td>
<td>It helps my patients understand their medicines a bit more. (GP)</td>
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<td></td>
<td>Just having another person go over it, having a bit more time and in different words can be very useful. (GP)</td>
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<td></td>
<td>There’s the empowerment they [the patients] get from a more clear understanding. (nurse)</td>
</tr>
<tr>
<td>Benefits of HMRs</td>
<td>AHS staff comments</td>
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</table>
| Improve medication adherence | *Because the people don’t feel they’re working, they tend not to take them.* (AHW)  
*If you explain to them [the patients] what it is, how it works and what to watch out for, then there’s some informed decision-making and they’re more likely to take them (medicines).* (AHW)  
*It gave my patient more confidence to take his medicines, just having someone reassure him that the medicines he was taking were appropriate.* (GP) |
| Supporting GP practice | *You get to learn stuff that you wouldn’t normally know about your patient. You learn about the gap, about what you think is going on and what is really going on, and you also learn stuff about medicines that you didn’t know.* (GP)  
*The reports can be revelationary. You find out people are taking all sorts of things, some that you ceased months ago.* (GP)  
*When a locum comes, and we have lots, they just prescribe the drugs because the patient asks for them. They don’t review them or work out if they really need them.* (AHW) |
| Lack of awareness | *None of us here know about Home Medicines Review.* (AHW)  
*People are not aware they can ask for, or should ask for their medicines to be reviewed.* (AHW)  
*They [the patients] don’t know that pharmacists can do things like reviews.* (AHW) |
| Workload | *Time is the main thing that has put me off.* (GP)  
*We are already inundated with administrative tasks.* (GP) |
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<th>Benefits of HMRs</th>
<th>AHS staff comments</th>
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<td></td>
<td>Aboriginal Medical Service workloads are pretty demanding. A lot of these people that qualify for an HMR also qualify for EPC, care plans, health assessments and that kind of stuff, so that might be where they’re going first. (nurse)</td>
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<td></td>
<td>One of the difficulties is having enough health workers on board to do it [participate in an HMR]. Having a health worker who is trained enough to go with the pharmacist, who is trained in quality use of medicines and who understands what the pharmacist is talking about and take a lead in the whole process would be the ideal. (AHS manager)</td>
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<tr>
<td>Protection of the clinician-client relationship</td>
<td>They’re [patients] already getting referred to lots of different people for lots of different things. So another referral might just feel like too much. (GP)</td>
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<td></td>
<td>Gaining someone’s confidence and trust and having a meaningful clinical interaction requires proper cross-cultural training and working with the community over some time. (GP)</td>
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<td></td>
<td>Doctors are concerned about overloading the patient. (nurse)</td>
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<td>Lack of Clinician/AHS pharmacist relationship</td>
<td>The GPs aren’t driving it [HMR referral] as they don’t have a relationship with a pharmacist who can do it for them. (GP)</td>
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<td>The relationship between the doctor and the pharmacist might not be established. If they had a rapport and a referral pathway going already that would really help. (nurse)</td>
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<td>The community pharmacists around here are very busy. I don’t think they have time to get it done. (GP)</td>
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<tr>
<td>Benefits of HMRs</td>
<td>AHS staff comments</td>
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<td></td>
<td>It would be important for the pharmacist to have some cross-cultural training. (AHW)</td>
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<td>The chronic health nurse or AHW needs to have a direct link with the accredited pharmacist, not the pharmacy. (nurse)</td>
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<td></td>
<td>Generally our clients do not have a relationship with a pharmacist. (nurse)</td>
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<td>Lack of an HMR facilitator/driver/program manager</td>
<td>We need someone at the health service allocated to encouraging the Home Medicines Review, co-ordinating it, blocking out time for GPs to do referrals, taking on the role of doing the consent. (GP)</td>
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<td>It needs something set in place so that it can be done regularly. (GP)</td>
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<td>We rely on a co-ordinator to organise all the logistics. (GP)</td>
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<td>There needs to be a single point of contact, health worker to patient. (AHW)</td>
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<td>Somebody who is well-known to the patient needs to ring and explain the process. (AHW)</td>
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<td>Complex HMR model and rules</td>
<td>It took a while to make sense of the steps. (GP)</td>
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<td>I think the criteria are a bit restrictive. (GP)</td>
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<td></td>
<td>It was not clear that all pharmacists were not accredited. I was sending off referral letters and nothing happened. (GP)</td>
</tr>
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<td></td>
<td>It would be better if someone else could refer. For a multi-disciplinary team to work effectively everything should not be done by the GP. (GP)</td>
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</table>
### Benefits of HMRs

<table>
<thead>
<tr>
<th>AHS staff comments</th>
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<tbody>
<tr>
<td><strong>A lot of them think it is all done once the pharmacist has left the house.</strong> (AHW)</td>
</tr>
<tr>
<td>The health service should promote it [HMR] and align it with other programs or something they do already. (nurse)</td>
</tr>
<tr>
<td>We don’t organise Home Medicine Reviews for all sorts of reasons – around privacy, judgement, people not being home, lots of people being transient or homeless, lots of people in one household and people not wanting strangers in their home. (nurse)</td>
</tr>
<tr>
<td>We need a flexible mixed model where some people can come here on an appointment, or we can go there if it suits today or where a pharmacist can just add on to an existing program. (AHW)</td>
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<table>
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<tr>
<th>Lack of financial reimbursement</th>
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<tbody>
<tr>
<td>The AMS should be able to claim something for organising an HMR. (AHS manager)</td>
</tr>
<tr>
<td>It should be the AMS who is doing all the organising who gets a cut, not the pharmacy. (nurse)</td>
</tr>
<tr>
<td>AHWs are very important to the process. They need to be reimbursed for their time, just like the pharmacists and GPs. (GP)</td>
</tr>
</tbody>
</table>

Key: AHW=Aboriginal Health Worker; GP=General practitioner; HMR=Home Medicines Review

**“Home Medicines Reviews are useful”**

Three of the five nurses and all AHW interviewees described increased medicine knowledge and empowerment of patients to make medicine choices as the potential benefits of the program, stating “HMRs were good for understanding what they’re taking and why they are
taking medicines and the importance of medicines”. They also felt HMRs would assist patients learn about potential dangers in storing medicines and sharing medicines. Most of the interviewees strongly agreed that a Home Medicine Review could be useful in reducing medication “fear and worries about the unknown”.

All the AHW interviewees expressed concern about patient confusion around their medicines stating, “Generics confuse the hell out of people” and “In hospital they start swapping and changing medications. It gets very confusing.”

The majority of the GP interviewees also felt patients would benefit from increased medicine knowledge and that patients would benefit from having “someone else reinforcing information that the doctor has given”. The majority of GPs believed that HMRs could assist their patients to feel more confident about taking their medicines and felt HMRs would “elevate the medications up the priority list”. The majority of participants believed that most patients would be “really keen” to have an HMR, although there may be a few patients who “see it as a failure to have someone come and talk to them”.

The GP interviewees who had referred patients for HMRs praised how HMRs had identified potential drug interactions and had identified “an astounding number of discrepancies between what we had on our system and what clients were taking”. Also, these GPs valued how HMRs assisted their therapeutic decision-making, assisted them to sometimes cease medications and increased their own understanding of medicines. The GPs liked the HMR reports as the “pharmacists fed back lots of information about whether there are lots of other medications from other places and whether there is confusion and that sort of thing”.

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Other benefits of HMRS stated by the GP interviewees included improved understanding of whether their patients had high falls risk, were medication adherent, and were sharing or hoarding medicines. A few GP participants also commented that they felt HMRs would assist with building relationships between patients and pharmacists.

“I just don’t get around to ordering HMRs”

Despite most of the participating AHS GPs agreeing that HMRs would be very useful for their complex patients and for supporting their therapeutic decisions, only 3 of the 11 GPs interviewed were actually referring their patients for HMRs regularly.

The most common reasons for the GPs not “getting around” to ordering HMRs for their patients included lack of time, protection of their client-clinician relationship, lack of relationship with pharmacists, and cultural inappropriateness of the HMR program. Some other reasons included complex HMR processes, not prioritising medicines in their patient discussions, GP ownership of their role in advising on medicines, and perceived lack of evidence for the value of HMRs. Two of the GPs reflected paternalistic attitudes, commenting “they [their Aboriginal patient] are not particularly interested in having an intervention like a HMR” and “In terms of education, which I know is one of the really important parts, I’m not sure. I’m not convinced that those people think it is a high priority and that we have any way of educating these people about their medications”. Two GPs commented that reviewing patients’ medicines was part of their practice, stating, “If a patient had concerns about their medicines they would come and talk to us about it. The clinic has primary responsibility for those things” and “I do a lot of it [medication review] myself actually.”
All the GP interviewees commented that the biggest barrier to writing HMR referrals was “being pushed for time”, and half of the doctors felt that writing an HMR referral was a barrier as it was “just another bureaucratic, red tape thing to do when you’re seeing patients”. Patients at the AHSs often had complex co-morbidities, and although most interviewees agreed that HMRs were desirable, the doctors felt they had “to sort out the multiple things a patient presents with, do a GP plan and a team arrangement and a health check first. An HMR is just another thing on a list of things that you know you need to do”. At times some felt they were “snowed under with the acute stuff before you even get to the chronic stuff”. In the 3 AHSs where GPs were writing regular HMR referrals they had found other staff members to assist the process and one commented “It takes time to offer and explain it [HMR] and do the referral. That is just too onerous to fit into an appointment, so I get the health worker to do it”.

The 8 GPs who were not regularly referring patients for HMRs made comments which reflected their wish to protect their clinician-client relationship. “There are lots of practitioners with lots of clinicians involved already” and “We need to make sure we are not overburdening them [the patients] with our efforts”. These GPs particularly showed some uncertainty about referring their patients to a pharmacist, indicating a lack of GP-pharmacist relationship. Five GPs perceived that their local pharmacists were too busy to do HMRs, commenting, “We think that some pharmacists are too busy. I guess we worry that the pharmacist might not be very receptive.” Two GPs had had their HMR referrals ignored or returned by pharmacies. “I was sending off referral letters and nothing happened.”
Seven of the GPs commented that pharmacists needed to be culturally sensitive, have some cultural training and/or show an interest in working with Aboriginal people before they would feel comfortable referring their Aboriginal patients to them. Comments included, “I am not sure how culturally aware the pharmacists are” and “If we [the AHS] had a relationship with a particular pharmacist who we knew our people were comfortable with that would really help.” The nurses also felt that the lack of pharmacist-client relationship was problematic stating that “It’s not very often that you will have a relationship between the client and the pharmacist.” Conversely, in the AHSs where a pharmacist had been contracted, the pharmacists were highly valued and regarded. “They [the doctors] really like having the pharmacist here. The doctors specially allocate time when she is here for the day. Now that they have built up a rapport the doctors will actually ring her up and ask her questions about medications.” The AHWs also commented, “It would be important for the pharmacist to have some cross-cultural training. For them to be good at it, for it to be worthwhile they need proper cultural training. That would be key.” A few of the interviewees bemoaned the lack of Aboriginal or Torres strait Islander pharmacists. The majority of AHWs commented on their clients’ lack of understanding of a pharmacist’s role and on their lack of established relationship with the local community pharmacist.

The GPs, nurses and AHWs all showed some misgivings about a pharmacist visiting an Aboriginal or Torres Strait Islander person’s home. “I think sending a pharmacist cold to a patient’s house is inappropriate” and “Many Aboriginal people are not comfortable with non-Aboriginal people going to their home”. Half the GPs did, however, state a preference for the HMR interview being conducted at the patient’s home whenever possible as they cited the advantage of being “able to see what is really happening” and that “one of the
great benefits is seeing the context at home so it would be a shame to lose that.” However, most felt that although “It is better if it happens in the home. I wouldn’t want them to not get a HMR just because the home is not appropriate or suitable”, and some believed that it was preferable to “have something in the clinic where they’re use to coming”. A couple of interviewees also commented that having a pharmacist at the clinic would assist in establishing relationships between GPs, pharmacists and AHWs and would allow valuable case conferencing and discussion around patients.

Despite most of the GPs at first stating that HMRs could be beneficial in assisting their patients to manage their medicines, later in their interviews, half the GPS from the AHSs where HMRs were not occurring, showed some scepticism around the value of HMRs. Two of the eleven 11 GPs perceived “if patients had concerns about their medicines they would come and talk to us [GPs] about it”. These GPs appeared to doubt the need for an HMR as they felt they adequately dealt with medication issues themselves, saying “I do a lot of it [medication education] myself actually” and “I believe it is my role to talk to patients about their medicines.” Three GPs also expressed concern that their patients “might not see the value in it” and stating, “The doctors spend a lot of time dealing with medicines so it might be seen as doubling up.” The majority of GPs who were not ordering HMRs felt that currently “the process isn’t in place for it to happen”.

The AHWs perceived that their lack of awareness and their clients’ lack of awareness of the HMR program contributed to the low uptake of HMRs by their community. Some also commented on the lack of continuity of GPs and the number of health checks already being conducted, as barriers to implementing another program, such as HMR, in their health service.
“Need someone to be the main organiser”

All the AHS health professionals interviewed agreed that for HMRs to become a regular occurrence at their AHS it required “having someone at the health service allocated to encouraging the Home Medicines Review, co-ordinating it, blocking out time for GPs to do the referral, taking on the role of doing the consent”. They all agreed that this role should be done by a senior health worker or a nurse who really understands the process. Each of the 3 AHSs where HMRs were being done had a “co-ordinator to organise all the logistics”. One AHS used the chronic care co-ordinator nurse, another an AHW dedicated to Quality Use of Medicines and the third a salaried pharmacist to organise their HMRs.

Explaining the process to the patient and brokering trust in the process was seen as important in the success of the program with Aboriginal and Torres Strait Islander patients. The GPs explained that “Someone who is well-known to the patient, such as a health worker, needs to ring and explain the process” and “I think if the health worker is the first port of call and clearly explains everything, then I think people will take it up.”

Across the health professional groups there was discussion as to how best manage the extra work load that HMRs would create. Most agreed that there should be health workers specifically employed as chronic disease health workers or even specifically as medication specialists, and part of their role should be facilitating the HMR process. All agreed, “The AHS should be able to claim something for their [the organiser’s] time” and stated that “It should be the AHS who is doing all the organising who gets a cut, not the pharmacy.”

Most GPs agreed an AHW should accompany a pharmacist to a client interview to broker cultural trust and because “it provides an opportunity to up-skill the health worker”. Most
commented that the health worker or the AHS should receive financial reimbursement for the health worker’s time, in alignment with the fees received from the Government by the GP and the pharmacist. Many interviewees felt the organising health workers should also be the one attending the interview.

“It would be better if someone else could refer”

A few of the GPs showed a lack of confidence and knowledge about who was eligible for an HMR, how to write a referral and the HMR process, as indicated by their comments, “So you don’t have to wait until they are on 5th medication to order an HMR?” and “It takes a while to make sense of the steps”. All the GPs, nurses and AHWs agreed that “It is not practical for the patient to have to take the referral to the pharmacy.” Most of the GPs indicated that as they were time-poor, they would be happy for a health worker or nurse to organise the HMR and even write the referral or alternatively “we could do the referral retrospectively.” The AHWs iterated their willingness to initiate referrals. “We know the patients best so it would make more sense if we organised the referral.”

The nurses and AHWs believed that it was crucial that the AHS could select and refer to a specific pharmacist known to the AHS, with whom they had a relationship and who had been assessed by the health service for their cultural sensitivity. The GPs also expressed the need to establish rapport with a trusted and culturally appropriate pharmacist before they would refer their patients.

“The model needs to be changed”

In addition to changing referral pathways, having the AHS organise the HMR and having an AHW attend the HMR interview, GPs also suggested other changes to the HMR model.
These included the pharmacists providing patients with a brief follow-up report that also prompted them to make an appointment with the GP to discuss, as “it is a very important step when the patient sits down with the GP and makes the changes that are needed”. Many lamented that often HMR patients did not revisit the clinic to discuss a revised medication plan with the GP.

Half the study participants mentioned that HMRs should be incorporated into the Aboriginal health assessment process, or be part of the existing GP management plan. A number of health workers also stated that the HMR program would work best if it was a “flexible model where you can work in with existing programs rather than trying to develop a whole other system of doing things”. The AHWs suggested a pharmacist should join in existing groups, run by the AHS, such as cardiac rehab, cooking or diabetes groups or “run alongside a chronic disease clinic that’s happening on the day”. Most of the AHWs mentioned that group meetings would be favoured by many clients, and so group HMRs should be an option.

All interviewers agreed that for the HMR program to work within their AHS it needed to be simplified. At present there are “way too many steps”. It also needed a systematised approach to ensure HMR referrals were written, interviews organised, and patients followed up. “It needs something set in place so that it can be done regularly.” The HMR system required a “driver” who was not too overburdened with other duties, preferably an AHW dedicated to chronic disease and medicines. All the AHWs interviewed stated that advising patients about medicines was a key part of their role and that they would like more training in this area.
The AHWs suggested that AHS need to promote the HMR program and inform their clients of the steps involved, through pamphlets and posters in the AHS.

GPs and AHWs suggested changing the name of Home Medicines Review program. “The title is not good as some patients don’t like that home bit. Some don’t like strangers coming to their home. It needs an Aboriginal title or at least a bit more of a friendly title.”

Figure 5.1 summarises the recommendations for a revised, more culturally appropriate HMR model. It is hoped that the findings and recommendations from this study will inform the Sixth Community Pharmacy agreement on HMR program rules for Aboriginal and Torres Strait Islander people.
Figure 5.1: Suggested model for Medication Review for Aboriginal and Torres Strait Islander people

- Culturally appropriate
  - AHS to organise
  - AHW to attend
  - Location of clients’ choice
  - Cultural training/mentoring of pharmacists, doctors, nurses

- Flexible and integrated
  - Opportunistic referrals
  - Integrated into PHC programs
  - Reduce red tape

- Remuneration
  - AHS for organising
  - AHW for attending
  - no cap on numbers for pharmacists
  - Uncapped program budget

- Aboriginal Health Service (AHS)

- Relationships
  - Dr-pharmacist
  - Pharmacist-AHS
  - Pharmacist-patient

- Medication Review referral from GP, AHS nurse or AHW to pharmacist

- Medication review with individual or group. AHW of patients’ choice to attend. Carers, family to be invited

- Patients increase medication knowledge

- Medication review report to GPs, referees, patients

- GPs, AHWs increase medication knowledge

- Improved medication adherence

- Optimal medication therapy and Improved health outcomes

- Patient recalled for medication plan with GP
5.3.4 Discussion

Previous research has shown that consumers identified improved medicine information, feeling cared for and increased confidence to discuss medicines with the GP, as potential benefits of an HMR (7, 8). In this study, the perspectives of the nurses and GPs who had experienced HMRs, and the perspectives of all the AHWs, strongly supported the findings from research with consumers, as they identified that increased medicines knowledge and empowering consumers to make medicines choices were the major HMR benefits. Although the majority of GP participants, especially those who had experienced an HMR, agreed that HMRs could assist their understanding of their patients’ medicine practices and provide clinical support, very few HMRs were being ordered. GPs were only referring their patients for HMRs in three out of the 11 AHSs in this study.

The 2008 Campbell report identified that GPs need assistance with structure around HMRs and that an HMR is very dependent on the relationship between GP and pharmacist (5). This study reinforced this need for structure and relationship, with HMRs only occurring in AHSs where structure had already been established, with an AHS staff member “driving” the process and where a pharmacist-AHS relationship had been established. This study also reinforced the Campbell report findings that an HMR was not seen as being high on the list of priorities for GPs due to competing demand for GP time, and as a result the HMR program existed in isolation rather than parallel to other Medicare items (6). The participants in this study reiterated that the HMR program workload needed to be shared and a team approach adopted, especially in areas where there were medical workforce shortages.

This study confirmed a number of the barriers around provision of HMR services identified in previous studies by both consumers and stakeholders. These included complexity of
program rules, concerns regarding the home visit, lack of information about the program, GP workload and GP fears of pharmacists encroaching on their professional space (5, 7-9). It also identified a number of barriers specific to Aboriginal and Torres Strait Islander clients. These included paternalistic attitudes of health professionals to clients, heightened protection of the GP-client relationship, lack of AHS-pharmacist relationship, need for more culturally responsive pharmacists and the lack of recognition of the AHS’s role in implementation of culturally effective HMRs.

One-quarter (n=4) of the non-Indigenous health professionals (n=16) interviewed demonstrated paternalistic or racist attitudes to their clients, claiming that their clients were uninterested or incapable of learning more about their medicines and thus not suitable for an HMR. This directly contradicted research conducted with the Aboriginal and Torres Strait Islander patients and the AHWs at the same AHSs. The majority of patients at these AHSs were extremely interested in learning more about their medicines and very supportive of having an HMR (7, 10). The AHWs strongly believed their clients would benefit from HMRS as long as the HMRs were conducted in a culturally appropriate manner. The small sample of non-Indigenous health professionals interviewed does not allow for extrapolation across the AHS workforce but does support previous work which suggests that GPs and non-Aboriginal staff at AHSs would benefit from cultural mentoring (11). These attitudes require further investigation to assess if some health professionals at AHSs may require screening or further cultural training.

The majority of the GPs interviewed in this study were very protective of their client-clinician relationships, with much of the GP concern being around not overloading the patient with information and too many appointments. Further research is needed to
ascertain whether this concern about “overloading” the patient is culturally influenced. There was also considerable concern from the AHS GP and nurse interviewees that the pharmacist may be culturally insensitive and thus, by association, may damage patient trust. Only at the AHSs (n=3) where a pharmacist was contracted or imbedded was their real understanding of the clinical role of a pharmacist. The lack of relationship between the AHS staff, including the GP, with any pharmacist, including their local community pharmacist, appeared to be a major barrier to the initiation of HMRs. The lack of relationship with AHSs was also noted by pharmacists themselves in recent research (9). This supported previous research which suggested that lack of face-to-face interactions and established relationships between GPs and community pharmacists may be a significant barrier to collaboration (12). It appears that some significant work is needed to build bridges between pharmacists and GPs and between pharmacists and AHSs, and in the cultural training of pharmacists. Pharmacy organisations are currently lobbying the Commonwealth Government to fund salaried pharmacists within AHSs, enabling culturally trained pharmacists to develop relationships with AHSs and their clients (13).

All the interviewees agreed that for many of their Aboriginal and Torres Strait Islander clients to feel confident in engaging with an HMR, the HMR needed to be organised and facilitated by AHS employees. This was also the finding of recent research which examined the views of Aboriginal and Torres Strait Islander patients who also identified the need to offer the option of having an AHW attend the HMR interview (7). Despite the acknowledgement by the Australian Government that pharmacies organising HMRs are entitled to a fee [4] there has been no acknowledgement of reimbursement for AHSs, which fulfil an even larger role in HMR facilitation for Aboriginal and Torres Strait Islander people.
Aboriginal Health Workers in this study identified the need for AHSs to have AHWs who specialised in assisting patients with medication management and who could facilitate the HMR process. Most AHWs were keen to undertake further training around medications as they saw assisting patients with their medications as an important part of their role. In the AHSs (n=3) which were initiating HMRs, a number of the AHWs were identifying patients and organising HMR referrals. All interviewees, including the GPs, were keen for nurses and AHWs to be allowed to write HMR referrals, seeing it as unnecessary for GPs to be involved in this process. Another study has requested community nurses be allowed to refer patients for HMR (14). A one-off HMR every 12-24 months was not seen as ideal. For complex patients with multiple medications, regular pharmacist interactions to reinforce medication messages is needed.

Despite the Australian Government’s commitment to improving the health and wellbeing of Aboriginal and Torres Strait Islander Australians and closing the health inequality gap (15), Aboriginal and Torres Strait Islander health status remains poor and burdens of chronic diseases, such as respiratory disease, diabetes and cardiovascular disease, remain very high (16). A number of studies have identified that medication management is an important issue which urgently needs to be addressed if the progression of chronic disease and all the associated complications are to be slowed (10, 17-19). Although the Australian Government has implemented a number of programs to assist Aboriginal patients with financial barriers to accessing medicines, recent changes to the HMR program rules have increased the barriers to accessing HMRs, and thus exacerbated issues of medication management, efficacy, safety and adherence. Changes to the HMR program have purposively been implemented to curtail the number of HMRS being conducted to reduce expenditure in a
program with a capped budget [4]. These program changes have disproportionately affected those most in need, i.e. Australia’s sickest, elderly, rural and Aboriginal populations (6).

The VALMER study was an economic evaluation of the HMR program by the University of Tasmania, which analysed 180 HMRS across Australia. It concluded that HMRs could significantly decrease healthcare utilisation costs as well as improving patients’ quality of life (20). Overall healthcare savings and benefits should be taken into consideration when funding for the Home Medicines Review program is assessed and guidelines rewritten in the Sixth Pharmacy Community Agreement 2015. New health models, such as shared medical appointments, which use group consultations to improve patient health, should be used to inform new HMR modelling and maximise outcomes from expenditure (21, 22). Recommendations from this study and from the 2008 Campbell evaluation report should be considered in developing an HMR model which is effective and culturally appropriate for Aboriginal and Torres Strait Islander people.

5.3.5 Study limitations

The sample of AHS health professionals who were interviewed was small, and the representatives of each profession even smaller, and therefore findings cannot be extrapolated to all AHS employees or across professions. The views of health professionals who work with Aboriginal and Torres Strait Islander people in settings other than AHSs were not sought. However, internal validity and reliability were achieved by questions about the same issues being asked numerous times, in appropriate, non-leading ways, and producing many similar findings in a range of different settings. Many of the findings in this study
endorsed results from research undertaken with Aboriginal and Torres Strait Islander patients (7) and pharmacists working with Aboriginal Health Services (9).

5.3.6 Conclusion

Increasing HMRs for Aboriginal and Torres Strait Islander people has the potential to increase patients’ medication knowledge and medication adherence, and thus improve chronic disease management (7). HMRs teach health service staff about their patients and about medications. HMRs provide GPs with invaluable information which assists them to more optimally manage their patients’ medications and health.

Currently, very few HMRs are being conducted with Aboriginal and Torres Strait Islander people, largely due to lack of awareness, the paternalistic attitudes of some health professionals and the logistics of navigating the HMR program rules. The GPs at most AHSs are writing very few HMR referrals due to complexities of patients’ needs, shortage of time and lack of trust in pharmacists’ ability to appropriately manage their patients.

Aboriginal Health Services, as the trusted brokers of Aboriginal social, emotional and physical wellbeing and with their understanding of community history and relationships, are well-placed to be the promoters, organisers, facilitators and implementers of health programs, such as HMR for Aboriginal and Torres Strait Islander clients. Within AHSs, staff juggle numerous programs and funding streams, and so the HMR program needs to be simplified, yet integrated within existing programs, and needs to have a “champion” in each health service to promote and drive the program.
The name of the HMR program and the myriad of HMR rules need to be changed and simplified. Referral, feedback and follow-up processes in particular need to be revised. Much work is needed to improve GP-pharmacist professional relationships and pharmacist-AHS relationships. GPs, nurses and AHWs who have no previous experience with HMRs have little or no understanding of the role of a pharmacist. A big-picture approach is needed for the HMR program restructure, using evidence-based decision-making and Aboriginal community consultation.

Imbedding a pharmacist within an Aboriginal Health Service, even in a part-time capacity, is a solution which addresses many of the barriers to HMRs which have been identified in this study. It enables the HMR program to be integrated with other services and assists GPs to offer optimal medication therapy. It ensures pharmacists are culturally mentored and that they build strong relationships with health professionals and patients. It encourages regular “coaching” of patients to assist medication adherence. If the Australian Government is to honour its commitment to improve Aboriginal and Torres Strait Islander health it needs to fund an uncapped medication review program and imbed salaried pharmacists within AHSs.
5.3.7 References


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Chapter 6

Pharmacists and Aboriginal Health Services

6.1 Introduction to chapter

This chapter contains an original research paper that has been published in a peer-reviewed journal. This paper explores pharmacists’ attitudes to the provision of pharmacy services, including HMR, to Aboriginal and Torres Strait Islander people and AHSs.

This chapter reports the findings of the data analysis of a cross-sectional survey completed by 187 HMR-accredited pharmacists. The survey results showed that many pharmacists had little or no interaction with their local AHS and did not deliver professional pharmacy services, such as HMR, to the AHS clients. A number of survey respondents did not complete the survey questions pertaining to Aboriginal people. Only 88 participants completed all questions. It is surmised that some pharmacists did not complete all questions as they perceived that they had no Aboriginal clients.

Lack of awareness of HMRs by AHS staff, and consequently a lack of HMR referrals, was the biggest barrier to HMR service delivery, together with lack of remuneration to pharmacists for professional services. The lack of relationship between the pharmacist and the AHS was also a significant barrier to delivery of services to the AHS. These findings concerning relationships and lack of referrals directly reflect the findings discussed in Chapter 5 when GPs expressed concerns about referring their patients to pharmacists.
Although most of the pharmacists had not delivered HMRs to Aboriginal people and had not tried to organise HMR interviews, some of the pharmacists perceived that interview appointments would be difficult to organise, thus exhibiting a somewhat racist perspective. Pharmacists reported little or no cultural understanding and training, but a real willingness to learn and to deliver more services to AHSs.

6.1.1 What is known on this subject?
Apart from a few individual pharmacist reports on their own work with Aboriginal and Torres Strait Islander people there is no research which examines pharmacists’ attitudes to service delivery to AHSs.

6.1.2 What does this study add?
The findings of this study will inform design of future medication programs for Aboriginal and Torres Strait Islander people. Pharmacists need assistance in brokering relationships with AHSs and GPs. The study findings confirm that pharmacists’ continuing professional development programs and pharmacy school curricula need to imbed cultural awareness training.

6.1.3 Reference

A copy of the published paper can be found in Appendix E.
6.2 Manuscript abstract

**Attitudes of pharmacists to provision of Home Medicines Review for Indigenous Australians**

**Background**

Home Medicines Reviews could improve the quality use of medicines and medicines adherence among Aboriginal people. Despite high levels of chronic disease very few Home Medicines Review are currently being conducted for Aboriginal and Torres Strait Islander people.

**Objective**

The aim of this research was to explore the barriers and facilitators from the pharmacists’ perspective for the provision of Home Medicines Review to Aboriginal people attending Aboriginal Health Services.

**Setting**

A cross-sectional survey was used to gather demographic, qualitative and quantitative data from 945 Australian pharmacists accredited to undertake Home Medicines Review.

**Method**

The survey consisted of 39 items which included closed, open-ended and Likert scale questions. Data were extracted from the online survey tool and analysed. Descriptive
statistics were used to explore the quantitative data, whilst qualitative data were thematically analysed and coded for emergent themes.

**Main outcome measure**

Number of Home Medicines Reviews conducted for Aboriginal and Torres Strait Islander patients.

**Results**

A total of 187 accredited pharmacists responded to the survey. They reported that barriers to Home Medicines Review for Aboriginal patients may include lack of understanding of cultural issues by pharmacists; lack of awareness of the Home Medicines Review program by Aboriginal Health Service staff; difficulties in implementation of Home Medicines Review processes; burdensome program rules; the lack of patient-pharmacist relationship, and the lack of pharmacist–Aboriginal Health Service relationship.

**Conclusion**

Changes to the medication review processes and rules are needed to improve the accessibility of the Home Medicines Review program for Aboriginal and Torres Strait Islander people. Improved relationships between pharmacists and Aboriginal Health Service staff, would increase the likelihood of more Home Medicines Reviews being conducted with Aboriginal and Torres Strait Islander patients.
Impact of findings on practice

Currently, there is no comprehensive data as to why Aboriginal people are under-utilising Home Medicines Reviews and other pharmacy services from the pharmacists’ perspectives.

The findings from this study:

- Inform future policy and medication initiatives for Indigenous Australians
- Identify gaps in pharmacists’ education and ability to work inter-professionally
- Identify facilitators for increasing pharmacist delivery, and patient accessibility, of clinical pharmacy services, such as medication review.
6.3 Manuscript full text

Attitudes of pharmacists to provision of Home Medicines Review for Indigenous Australians

6.3.1 Introduction

The Australian Home Medicines Review (HMR) is a professional pharmacy service that aims to achieve safe, effective and appropriate use of medicines and to improve the health outcomes and knowledge of medicines in participating patients (1). Studies show that HMRs can improve medication suitability, reduce adverse drug events, increase patient medication knowledge and improve adherence rates (2, 3).

The HMR program (1) was introduced in Australia in 2001 by the Commonwealth Government. On a referral from the GP, an HMR trained and accredited pharmacist will visit the patient at home, and interview the patient about their medication and lifestyle. The pharmacist explains the medications and provides appropriate medication information to the patient. The pharmacist then prepares a report of their findings, using information provided by the patient, medical information provided by the GP and the patient’s dispensing history from the pharmacy. The accredited pharmacist reports the findings and their recommendations to the referring GP. This report forms the basis of the Medication Management Plan which the GP may implement with the patient on their next visit. The GP and pharmacist claim payment from Medicare Australia.

Indigenous Australians have poorer health, higher rates of chronic disease and lower average life expectancy than non-Indigenous Australians (4). Despite a higher burden of acute infections and chronic diseases, under-use of medicines is evident in Australian
Aboriginal populations (5). Poor control of chronic disease states and subsequent higher hospital admissions, morbidity and mortality may be directly attributable to poor medicine management in Indigenous communities (6).

Qualitative, interview-based studies have explored perspectives of Aboriginal patients and Aboriginal Health Workers (AHW) as to why medications are under-utilised by Aboriginal and Torres Strait Islander people. They have identified lack of knowledge and understanding about medicines and ineffective engagement with health professionals as the two biggest barriers to appropriate medication use (7-11).

Complex medicine regimens result in some Aboriginal and Torres Strait Islander patients finding medicines confusing and difficult to manage. Greater understanding and empowerment about medicine choices seem to be likely to improve medicine adherence (10). Pharmacists through cognitive pharmacy services, such as Home Medicines Review, have an opportunity to build relationships, increase patients’ knowledge about their medicines, and assist Aboriginal and Torres Strait Islander patients with medication understanding and treatment choices (10).

Aboriginal and Torres Strait Islander patients have identified some of the reasons why the HMR program is under-utilised by Aboriginal people. These include the need for a GP to write HMR referrals, lack of relationship with a pharmacist, the inappropriateness of a pharmacist visiting an Aboriginal patient’s home and lack of understanding of the benefits of the HMR program (12,13).
This study explored pharmacists’ attitudes to the delivery of HMRs to Aboriginal and Torres Strait Islander people and contributed to knowledge of the processes and supports needed to enable increased HMR delivery to Aboriginal and Torres Strait Islander people.

6.3.2 Aim

The aim of this research was to explore the barriers and facilitators, from pharmacists’ perspectives, for the provision of HMRs and other pharmacy services to Aboriginal people attending the Aboriginal Health Service.

Ethical approval was granted from the University of Sydney, Human Research Ethics Committee (approval number: 11504).

6.3.3 Methods

Data collection

A cross-sectional survey was used to gather demographic, qualitative and quantitative data on the barriers and facilitators to the provision of professional pharmacy services and HMRs to Indigenous Australians. A literature review and results from preliminary qualitative studies (10,13) were used to guide the survey design.

The survey was sent to pharmacists accredited to undertake HMRs in September 2012. At that time, email contact details were listed for 983 HMR-accredited pharmacists across Australia on the online database of the accredited pharmacists’ credentialing body, the Australian Association of Consultant Pharmacists (14). The researcher successfully contacted 945 of those listed online, with the other 38 having incorrect email addresses. Thus, the majority of accredited pharmacists listed were invited to participate in the study.
They were each emailed an invitation to participate in the study, containing a hyperlink to an online survey.

The survey consisted of 39 items which included closed, open-ended and Likert scale questions. Survey questions explored types of services provided by respondents to Aboriginal Health Services (AHSs), pharmacist attitudes to working with AHSs, and the barriers and facilitators impacting on the provision of HMRs to Aboriginal and Torres Strait Islander people. The respondents were also asked a range of general demographic questions. The survey was piloted on 8 accredited pharmacists working in community pharmacy, hospital pharmacy and academia. As a result of the pilot the question order was changed slightly to make question progression more relevant, and the wording of one question was altered to clarify meaning. The results of the pilot were included in the analysis.

Interactions and relationships between pharmacists and AHSs were explored in this study as AHSs have been identified as playing a key facilitating role in the successful organisation and implementation of HMRs for Aboriginal people (13).

**Data analysis**

Data were extracted from the online survey tool (Survey Monkey) and analysed using Excel 2007. Descriptive statistics were used to explore the quantitative data, whilst qualitative data were thematically analysed and coded for emergent themes.
6.3.4. Results

This study explored the pharmacist perspective on the provision of HMRs to Aboriginal Australians to inform better understanding of the under-utilisation of HMRs and to gain insight into strategies for increasing HMR provision.

Participants

Of the eligible participants, 187 pharmacists responded to the survey, representing a response rate of 19.7%. Not all respondents answered all questions. Only 88 respondents (n=88/945 9.3%) answered the specific questions around working with AHS staff and conducting HMRs for Aboriginal patients. This appears to reflect the small sample of pharmacists who are engaged with delivering services to AHSs.

Approximately 23% of Australia’s pharmacists reside and work in non-urban areas, mainly in rural areas and their regional towns. The number of pharmacists decreases with increasing rurality, and only 1% of Australia’s pharmacists work in areas classified as remote (15). Over 50% of the survey participants were from rural areas and regional towns, 4% identified their workplaces as remote, and approximately 40% were from urban areas. The higher level of rural than urban responses may reflect the higher percentage of Aboriginal and Torres Strait patients in rural and remote areas, and thus a greater interest in completion of this survey by pharmacists in those areas.

Over 40% of respondents were community pharmacists, and 46.7% identified themselves as consultant pharmacists, thus implying that their primary occupation was to conduct medication reviews.
Most of the respondents regularly conducted HMRs, with over half conducting over 5 HMRs per month and about a third conducting more than 10 HMRs per month. However, only a quarter of respondents had conducted more than 5 HMRs for Aboriginal patients in the last 3 years, and about half of respondents had not conducted any HMRs for Aboriginal people in the last 3 years. Demographics and HMR activity of respondents is summarised in Table 6.1.

Pharmacist engagement with Aboriginal Health Services

More than half of the respondents (59.1% n=97/164) indicated they worked within 30 km of an Aboriginal Health Service (AHS). However, close to one-third of respondents (28.7% n=47/164) did not know how far they were from their local AHS. This may be indicative of limited interaction with their local AHSs.

Despite the close geographical proximity to AHSs, most respondents and their staff (72.6% n=119/164) had not visited an AHS in the previous 12 months, and 55.5% (n= 91/164) had had no contact with the AHS. For the 45% of the respondents who had had a contact with the AHS, the contact was most commonly by phone (47.7% n=42/88). The main purpose for contact was medication supply and dispensing queries. Their most common contact was with the prescribing GP. Only 17% (n=15/88) of respondents indicated that their engagement with the AHS related to patient medication counselling, and 63% (n=55/88) of respondents identified that they had not provided any Quality Use of Medicine Services to AHSs. Thirty-two percent of respondents (n=28/88) provided Dose Administration Aids (DAAs, often called Webster packs) to their local AHS.
Table 6.1: Demographic and HMR profile of respondents

<table>
<thead>
<tr>
<th>Demographic</th>
<th>Options</th>
<th>% of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Remote</td>
<td>3.7% (n=7/187)</td>
</tr>
<tr>
<td></td>
<td>Rural</td>
<td>20.3% (n=38/187)</td>
</tr>
<tr>
<td></td>
<td>Regional</td>
<td>34.8% (n=65/187)</td>
</tr>
<tr>
<td></td>
<td>Urban</td>
<td>41.2% (n=77/187)</td>
</tr>
<tr>
<td>Primary role</td>
<td>Community pharmacy owner</td>
<td>15.5% (n=29/187)</td>
</tr>
<tr>
<td></td>
<td>Pharmacist in charge</td>
<td>11.8% (n=22/187)</td>
</tr>
<tr>
<td></td>
<td>Community Pharmacist</td>
<td>12.3% (n=23/187)</td>
</tr>
<tr>
<td></td>
<td>Hospital Pharmacist</td>
<td>8.0% (n=15/187)</td>
</tr>
<tr>
<td></td>
<td>Consultant Pharmacist</td>
<td>46.0% (n=86/187)</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>6.4% (n=12/187)</td>
</tr>
<tr>
<td>HMRs per month</td>
<td>0</td>
<td>6.7% (n=11/164)</td>
</tr>
<tr>
<td></td>
<td>1 to 4</td>
<td>35.4% (n=58/164)</td>
</tr>
<tr>
<td></td>
<td>5 to 10</td>
<td>26.2% (n=43/164)</td>
</tr>
<tr>
<td></td>
<td>&gt; 10</td>
<td>31.7% (n=52/164)</td>
</tr>
<tr>
<td>HMRs over last 3 years</td>
<td>0</td>
<td>47.6% (n=78/164)</td>
</tr>
<tr>
<td></td>
<td>1 to 4</td>
<td>27.4% (n=45/164)</td>
</tr>
<tr>
<td></td>
<td>5 to 10</td>
<td>11.0% (n=18/164)</td>
</tr>
<tr>
<td></td>
<td>11 to 20</td>
<td>6.7% (n=11/164)</td>
</tr>
<tr>
<td></td>
<td>&gt;20</td>
<td>7.3% (n=12/164)</td>
</tr>
</tbody>
</table>

Key: HMR=Home Medicines Review
The vast majority of respondents (89.6% n=147/164) indicated that they would like to have provided more services to their local AHSs. They indicated that they would like to provide services such as HMRs (72.5% n=119/164), AHS staff education (49.4% n=81/164) and health promotion assistance (54.0% n=88/164).

The two largest barriers to working with an AHS were identified as lack of relationship with the AHS (57.9% n=95/164) and lack of financial viability for delivering clinical services to the AHS (61.6% n=101/164).

**Home Medicines Reviews for Aboriginal and Torres Strait Islander people**

*Perceived benefits:* Respondents expressed high to very high agreement that an HMR would result in an increased understanding of their illness (72.7% n = 64/88) and an increased understanding of how to take medicines (84.1% n = 74/88). Similarly, respondents agreed that an HMR would increase the understanding of potential medication side-effects (71.2% n=62/88), improve medication adherence (69.3% n=61/88), improve pharmacist-patient relationships (77.7% n=66/88) and encourage patients to ask more questions about their medicines (68.2% 60/88).

*Perceived barriers:* Lack of GP referrals (74.7% n=121/164), lack of pharmacist time (40.5% n=66/164) and low financial viability (16.6% n=27/164) were seen as barriers to delivery of HMRs to all population groups.

Barriers to delivery of HMRs to Aboriginal patients also included difficulties in organising HMR interviews (57.4% n=51/88) and lack of understanding of cultural issues (49.4% n=43/88). Over half the respondents (52.8% n=47/88) also had a perception that Aboriginal patients may not want “a stranger in their home”, and 53.4% (n=47/88) expressed some
concern that the lack of an existing patient–pharmacist relationship could cause a barrier to the delivery of HMR services to Aboriginal patients. By far the biggest perceived barrier (79.5% n=70/88) was lack of awareness of the HMR program by GPs and AHS staff. Barriers to the provision of HMRs for Aboriginal patients are summarised in Table 6.2.

Table 6.2: Respondents’ perceptions of barriers to the provision of HMRs to Aboriginal and Torres Strait Islander patients

<table>
<thead>
<tr>
<th>Respondent Perceptions</th>
<th>Percentage of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=164</td>
</tr>
<tr>
<td></td>
<td>Not at all</td>
</tr>
<tr>
<td>Lack of awareness of HMRs by GPs/AHSs</td>
<td>6.8%</td>
</tr>
<tr>
<td>Organising an HMR referral</td>
<td>15.9%</td>
</tr>
<tr>
<td>Lack of patient interest</td>
<td>14.8%</td>
</tr>
<tr>
<td>Patient not wanting a stranger in their home</td>
<td>20.5%</td>
</tr>
<tr>
<td>Difficulties in organising appointments</td>
<td>13.6%</td>
</tr>
<tr>
<td>Liaising with AHW/AHS</td>
<td>31.0%</td>
</tr>
<tr>
<td>Understanding cultural issues</td>
<td>19.5%</td>
</tr>
<tr>
<td>Liaising with patient’s doctor</td>
<td>30.7%</td>
</tr>
<tr>
<td>Effectively communicating with patients</td>
<td>28.7%</td>
</tr>
<tr>
<td>Providing feedback to patients</td>
<td>28.7%</td>
</tr>
</tbody>
</table>

Key: AHS=Aboriginal Health Service; AHW=Aboriginal Health Worker; GP=General practitioner; HMR=Home Medicines Review
Respondents who had conducted an HMR with an Aboriginal patient identified that the GP was responsible for organising the majority of the referrals (77.5% n=69/88) whilst the pharmacist was responsible for organising the majority of the interviews (74.2% n=66/88). Difficulty organising an HMR referral was rated by the majority of respondents to have a high or very high impact on the provision of HMRs. A few respondents’ comments indicated that they felt some GPs did not highly rate HMRs.

“Prescribers do not see the benefit in a HMR and may not feel a pharmacist can add any more insight than themselves.”

Just over half of the respondents (56.1% n=92/164) identified lack of professional relationships with their local AHS as the greatest barrier to providing professional pharmacy services to Indigenous communities. The pharmacy-AHS relationship was identified by 39.0% (n=64/164) of the respondents to highly or very highly impact on their ability to provide services to the AHS.

Other barriers to HMR delivery to Aboriginal patients were also suggested by respondents in their answers to the open-ended qualitative questions. These included difficulty allocating time for HMRs due to current work commitments, difficulty co-ordinating pharmacy opening times and visits to the AHS, excessive amounts of paper work, restrictive program rules and inconsistent HMR demand.

Whilst some respondents indicated that they felt visiting Aboriginal patients’ homes was not always culturally appropriate, most of the HMRs (83% n=73/88) that had been conducted by respondents had been performed in the homes of the patients, and were by appointment (88.6% n=78/88), as per the HMR program regulations. However, a few
respondents indicated that as regulations make it very difficult to conduct HMRs in a venue other than the home that many patients were opting not to use the service.

“By far the main barrier to doing HMRs in this area is the unwillingness of Aboriginal people to have visitors in their homes. The only viable method of doing HMRs for Aboriginal people in this community is on an opportunistic basis in the pharmacy. But this is not allowed.”

The majority of respondents (69.5% n=114/164) indicated that they had never received any form of cultural awareness training or training relating to Aboriginal health or engagement with Aboriginal patients. Approximately half (49.4% n=43/88) of respondents felt that their lack of understanding of cultural issues impacted to a moderate to high degree on their ability to conduct HMRs for Aboriginal patients.

**Facilitators to HMR**

Greater involvement of AHS staff in the HMR process was seen as a facilitator for HMR delivery to Aboriginal patients. Although AHWs played no role in close to half of the HMRs (46.6% n=41/88) which had been conducted with Aboriginal patients, study participants expressed their desire for greater AHW or AHS nurse involvement, stating:

“It would be great to have the nurse and a health worker present during interview and involved in follow-up discussions, especially regarding disease management and continuity of care.”
When AHWs were involved in HMRs it was to liaise with pharmacists and patients (38.6% n=34/88), to help organise HMRs (22.7% n=20/88), to help in the follow-up process (17% n=15/88) or to act as an interpreter (10.2% n=9/88).

The majority of respondents (90.8% n=79/88) believed that allowing an AHW or AHS nurse to write HMR referrals would facilitate more HMRs being performed for Aboriginal patients, especially when GPs were time-poor and where there was high reliance on locum GPs. Participants commented:

“The GPs want more HMRs done but don’t want to have to do all the paperwork. It would be great if AHWs and nurses could write the referrals as they know which patients would benefit and usually have more time than the GPs.”

Most respondents felt that it was appropriate for AHS nurses and AHWs to be involved in the referral process as “the nurses and AHWs are closer to the patient and are more likely to identify medicine issues”.

A small number of respondents reflected the opinion, “Working at the AHS would be a great job. I could make a real difference. It is a pity that there is no funding to support this”.

6.3.5 Discussion

Although the respondents in this study were HMR-accredited pharmacists who conducted regular HMRs, over 70% of respondents had conducted fewer than 5 HMRs for Aboriginal people in the last 3 years. These findings endorsed those in earlier government reports which identified that very few HMRs have been performed for Aboriginal and Torres Strait Islander people (16,17). In 2013 approximately 107,000 HMRs were conducted across
Australia (18). However, there are no available statistics on how many of these were conducted for Aboriginal and Torres Strait Islander people.

More than half of the respondents had no contact with their AHSs and very few had been involved in Aboriginal patient interaction; yet many of the pharmacists who participated in this study wanted to interact with their local AHSs and staff. This reflects similar studies which indicate that pharmacists are keen to work more closely with mainstream GP practices and deliver inter-professional healthcare, but are unsure as to how to facilitate the process (19-20). Studies have found that pharmacists are not confident in clinical decision-making, largely due to personality type and professional training (21-23). More investigation is needed to explore whether these factors influence pharmacists’ ability to engage with other health professionals and build relationships with other primary healthcare organisations.

The respondents expressed an interest in delivering clinical services to the AHS if they could make the services financially viable. Respondents expressed the need for a suite of services for which they could be remunerated or the need for a salaried position within an AHS or GP practice to enable viability, sustainability and relationship building. Currently, the HMR program is the only clinical service in Australia for which a pharmacist can claim financial reimbursement from the Government.

Pharmacists received $194.07 (AU) remuneration for an HMR service (in 2014) (1) but have suggested in this study and in other evaluations that HMRs are not financially viable due to the large amount of time required for HMR administrative costs (16,17). This lack of financial viability is exacerbated when the pharmacist has to travel large distances to patients’ homes, especially in rural areas; when a pharmacist has to apply for a prior approval so that
they can conduct an HMR outside a patient’s home; and when a patient has multiple co-
morbidities, multiple healthcare providers and complex medication regimens (24).

Discussions between the Pharmacy Guild of Australia and the Australian Department of Health have commenced in preparation for negotiation of the Sixth Community Pharmacy Agreement (6CPA) by July 2015. These five-year Community Pharmacy Agreements provide remuneration and guidelines to around 5000 community pharmacies for the dispensing of Pharmaceutical Benefit Scheme subsidised medicines and the provision of pharmacy programs and services. Revised remuneration levels and program rules for HMR will be stipulated in 6CPA, and it is hoped that this study may persuade policy-makers that current remuneration levels for clinical services are inadequate and unsustainable. Pharmacy educators, organisations and policy-makers also need to be working with the Australian Government to develop service delivery models where pharmacists are remunerated for working in inter-professional primary healthcare settings, such as AHSs.

The majority of respondents found the main barrier to delivery of clinical services, such as HMR to Aboriginal patients, was their lack of relationship with the AHS, despite dispensing and supplying DAAs, to the AHS and its patients. This lack of relationship with the AHS may reflect the lack of training of pharmacists in Aboriginal health and cultural awareness. The National Australian Pharmacy Student Association conducted a survey of students in 2012 which showed that students felt it was important to be taught about Aboriginal and Torres Strait Islander health issues, but many pharmacy school curricula include very little or no content on Aboriginal health or cultural awareness (25). Respondents in this study indicated that they would like more education on issues of Aboriginal health and cultural awareness.
This study will be used to inform pharmacy schools of the need for increased cultural awareness training and Aboriginal Health education for pharmacy students. As a result of this study the main author is commencing work with the Pharmaceutical Society of Australia to develop a guide and a series of workshops for Australian pharmacists to assist them to be culturally responsive practitioners and assist them to engage with Aboriginal Health Services.

The respondents in this study, similar to other HMR studies with non-Indigenous Australians (26, 27), indicated that two significant barriers to HMR program uptake were lack of awareness of the program by health professionals and lack of GP referrals. Studies have also found that some GPs often do not value the role of pharmacists in performing medication management review (16, 17). Research has also suggested that due to time constraints GPs often find it difficult to fulfil the administrative requirements of HMR referrals, as the current process is complex (16). An Urbis Keys Young evaluation (2005) of the HMR program found that incomplete or unclear referral forms from the GPs hindered the HMR process. This evaluation also found that the majority of accredited pharmacists believed GPs were unaware of HMRs and were reluctant to collaborate professionally with pharmacists (17).

In February 2014 a lack of funding for the HMR program, under the Government - Pharmacy Guild agreement, resulted in the number of HMRs a pharmacist performed being capped at 20 HMRs per pharmacist per month (1). This capping of HMR program funding has negated the ability to promote HMRs to a wider audience despite the evidence that indicates the improved health outcomes and reduced preventable hospitalisations that result from medication reviews (2, 3, 28). Respondents in this study strongly indicated that
they believed that HMRs could greatly assist Aboriginal patients to better understand their medicines and health, and could improve medication adherence.

The views of the pharmacists in this study reflected the views of Aboriginal patients in a recent study (13) which indicated that barriers to HMR for Aboriginal patients included the “home setting”, and the complex referral and interview arrangements. The pharmacist respondents noted the need for a closer relationship with the AHS and the AHS staff, to ensure successful implementation of the HMR process. This confirms previous studies which emphasise the important role the AHS plays in delivering primary care to Aboriginal people (29-31).

Respondents acknowledged that GPs in AHSs are often overloaded or are transitory, and thus nurses and AHWs are often the primary contacts with patients. Respondents strongly endorsed greater involvement of AHS nurses and AHWs in the HMR process, from initial referral to follow-up post pharmacist intervention. The vast majority of pharmacists surveyed suggested allowing AHWs or AHS nurses to write HMR referrals and play a more key role in the HMR process to help facilitate good communication during the HMR interview and to aid in the administration procedures of the interviews and follow-ups (14-18).

The expanded role for AHS staff and the ability to conduct an HMR in a setting other than the home, were also identified as facilitators to increasing the number of HMRs for Aboriginal patient participants in a previous study (13).

This study will be used to advise 6CPA negotiations of the need for changes to HMR program rules and suggest new and more appropriate medication review models for
Aboriginal and Torres Strait Islander people. The new models will suggest that medication reviews for Aboriginal and Torres Strait Islander people be uncapped in number, allow referrals from nurses, Aboriginal Health Workers and doctors, and allow flexibility of location.

The issues of financial viability, lack of GP referrals and lack of program awareness were consistent with barriers identified by pharmacists in HMR studies with other population groups. The lack of ability to build relationships with Aboriginal health Services is a unique finding of this study and needs further investigation.

6.3.6 Limitations

Some of accredited pharmacists who were not regularly working with Indigenous patients were reluctant to participate in the survey. Several pharmacists contacted the authors to support the work but believed they could not contribute to the survey as they did not work with Aboriginal patients. Consequently, there was a limited sample, and the results of this study may under-estimate the barriers to performing HMRs for Aboriginal Australians.

This study does not analyse the views of pharmacists working with AHSs who are not accredited to perform HMRs. Non-accredited pharmacists may be providing pharmacy services to AHSs. However, their views on the barriers and the facilitators to providing pharmacy services for Aboriginal Australians have not been captured in this study.

6.3.7 Conclusion

This study showed that HMR-accredited pharmacists are currently providing very limited clinical pharmacy services to Aboriginal Australians. Accredited pharmacists were very keen
to provide more services to AHSs. However, assistance and training to overcome the barriers which are inhibiting them from working more closely with AHSs and AHS staff are needed. Pathways and mechanisms to facilitate increased relationship building between pharmacists and other health professionals, and with primary care organisations, such as AHSs, need to be further investigated.

Increased promotion of the HMR program, GP education, increased and consistent financial remuneration to pharmacists, changes to the HMR referral process, improved relationships between pharmacists and AHS staff, and increased involvement of AHS staff in the HMR processes are needed to increase HMR delivery to Aboriginal and Torres Strait Islander people.

Future government policies need to support and encourage pharmacists to conduct medication reviews for Aboriginal and Torres Strait Islander patients.

6.3.8 Acknowledgements

We would like to thank accredited pharmacists who participated in this survey.

This study was made possible by Sanofi Pamela Nieman Grant funding from the Society of Hospital Pharmacists of Australia.
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Chapter 7

Discussion

7.1 Introduction

This chapter relates the main findings from all phases of this study to previous research and the available literature. Whilst this study explores medication management for Aboriginal and Torres Strait Islander people, most existing literature on medication management and medication review is based on studies with non-Indigenous people. In this chapter I draw conclusions and make recommendations based on the analysis and synthesis of the data generated in this study and use literature to position the findings.

This aim of this study was to investigate how pharmacists, through the national HMR program (1), might better address the medication management needs of Aboriginal and Torres Strait Islander people. The barriers and facilitators to utilisation of the HMR program and medication review program modifications were investigated. To achieve this, three empirical studies were conducted.

Aboriginal and Torres Strait Islander patients’ experiences with medicines were explored, as were their views of the HMR program. Aboriginal Health Service health professionals’ perceptions of the HMR program and their suggestions for an “improved” or more readily accessible model of medication review service were analysed. Pharmacists’ attitudes to provision of services to AHSs were examined.
Aboriginal Health Service staff assisted in facilitating focus groups with patients and interviews with health professionals. Aboriginal Health Services were used as sites for this research as they provide culturally safe places for Aboriginal and Torres Strait Islander people (2). The AHSs deliver holistic care and are often multi-disciplinary. However, most do not include a pharmacist in their multi-disciplinary teams.

The views and perceptions of Aboriginal and Torres Strait Islander patients, AHS service providers and HMR-accredited pharmacists are amalgamated to inform the conclusions of this research. The importance of relationship, trust and culturally sensitive health professionals were recurrent themes.

7.1.1 Research questions

The goal of this study was to investigate how medication management programs, such as HMR, might address the needs of Aboriginal and Torres Strait Islander people. The following research questions were explored:

1. What are the experiences and perceptions of Aboriginal and Torres Strait Islander people regarding taking medicines?
2. What are the experiences and perceptions of Aboriginal and Torres Strait Islander people of the HMR program?
3. What are the attitudes and perceptions of AHS service providers of the HMR program?
4. What are the barriers and facilitators, from pharmacists’ perspectives, for the provision of pharmacy services, including HMR, to clients attending an AHS?
5. What strategies or program changes are needed to increase utilisation of the medication review programmes by Aboriginal and Torres Strait Islander people?

7.2 Main findings

7.2.1 Medication management

Findings from this study confirmed previous research which reported that Aboriginal and Torres Strait people found medicines confusing and difficult to manage (3-5). The findings also reiterated that the level of Aboriginal and Torres Strait Islander people’s engagement in their health management often directly reflected the effectiveness of communication between patient and health professional, the level of patient empowerment and involvement in collaborative decision-making, and the cultural appropriateness of available health services (6-8). Prior experiences of individual or organisational racism and power imbalance influenced perceptions of health services by Indigenous patients (9-11).

Australia’s mainstream medical model often focuses on compliance with medical advice and frequently ignores the complex historical and sociocultural influences that shape patients’ responses to their health and healthcare. Murray, an experienced remote medical practitioner and researcher, laments that non-compliance is an unhelpful construct used by health professionals with Aboriginal patients, and reflects that non-compliance is often used to defend poor standards of clinician practice (12). Murray feels that it is the clinician’s responsibility to ensure a patient’s understanding of the reasons for treatment, and that the prescriber should assess and discuss any barriers a patient may face (12).
Poor adherence to prescribed medication is documented and associated with adverse health outcomes in all population groups (5). Whilst accepting that compliance or adherence often has negative and judgemental connotations, it is appropriate to discuss medication adherence here in the context of how to improve health outcomes through improved clinician interactions and to examine the potential role of HMRs in improving medication adherence.

The AHS health professionals in this study reported anecdotally that many of their patients were medication non-adherent (13). This may reflect the low levels of medication adherence for all population groups with chronic disease (14, 15) or may indicate even higher levels of medication non-adherence for Aboriginal and Torres Strait Islander people. Although the literature on health professionals working with Indigenous patients reports higher levels of non-adherence in Indigenous communities (16, 17), there are actually no conclusive comparative studies which measure medication adherence in Aboriginal and Torres Strait Islander people against other population groups. However, research does show that low patient self-efficacy, depression and stress, low education, low outcome expectations, fear of adverse effects and lack of knowledge of medication benefits, all negatively influence medication adherence (18-20).

The majority of patients in this study reported they tried to be medication adherent. However, forgetfulness, financial pressures and other priorities, such as managing family, often reduced the likelihood of medication adherence (21). Lack of knowledge of medicines, polypharmacy and the fear of drug interactions and adverse effects were also mentioned as key factors contributing to poor medication adherence (21). Previous studies have shown
that pharmacist interventions and/or counselling can improve medication management and adherence in non-Indigenous populations (22-24).

Previous studies have shown that communication failures between patients and health professionals and insufficient patient counselling about medicines, contribute to preventable hospital admissions (25). Patients in this study indicated that they received little or no medication counselling (21). Effective communication between health professional and patient is fundamental to optimal healthcare (26). This study, like previous studies, has identified significant concerns regarding communication between health professionals and Aboriginal and Torres Strait Islander patients (21, 27, 28).

Very few of the patients in this study had asked their GP or pharmacist about their medicines, reflecting lack of relationship, power imbalance and sometimes lack of trust between some health professionals and patients. Many patients felt disempowered, too shy, ashamed or too ignorant to ask questions. For those who felt they could ask questions, it was usually to the GP or AHW rather than to the pharmacist, as they had a closer relationship with the GP and AHW than with the pharmacist and because they perceived that their community pharmacists were too busy or disinterested (21). The findings in the pharmacist survey section of this study confirmed that very few pharmacists had interacted with or counselled their Aboriginal clients (29).

Most the GPs who participated in this study were unaware of their patients’ confusion about medicines. The majority of GPs in this study felt that their communications about medicines were effective and adequate. However, a few admitted that they did not prioritise medicine discussions with their patients (13). A quarter of the nurse and GP participant sample exhibited paternalistic attitudes, stating that Aboriginal and Torres Strait
Islander people were not interested in receiving medication information or reviews (13). This differs from what the Aboriginal and Torres Strait Islander patients in this study reported (21). The Aboriginal and Torres Strait Islander study participants stated that they received little or no medicines information, and that they wanted to know what medicines were for, how they worked and how to take them, as well as be informed of potential adverse effects or interactions (21). The gap between nurse-GP perceptions and patients’ perceptions indicates a real need for pharmacists to play an increased role in medication education.

Many patient participants had little understanding of the role of a pharmacist and found community pharmacies uncomfortable environments for discussion of health, and some reported racist experiences in pharmacies (21). For some participants, confusion and poor explanations of the pharmacy program and dispensing rules, such as the 20-day rule, generic substitution and GP endorsement of “Closing the Gap” prescriptions (30), had reduced patient-pharmacist trust (21). Some participants commented that their only communications with pharmacists had been concerning these procedural issues rather than on matters concerning their health. Further studies need to be conducted into how complex and inflexible pharmacy program rules may damage pharmacist-client relationships and how this may impact medication management.

The majority of AHSs participating in this study, although recognising that medication non-adherence was negatively influencing the health of their clients, had not implemented any comprehensive medication management services. A few AHSs had organised for Dose Administration Aids for their clients to be financially subsidised (via QUMAX or Care Coordination and Supplementary Services (CCSS) funding (31)) but recognised that this only
assisted those clients who were non-adherent due to forgetfulness, without addressing the many other barriers to medication adherence and safe use of medicines (3, 5, 32, 33). Some of the participating AHS staff expressed concerns that pharmacists were too busy or not culturally competent to manage their clients (13). Most of the pharmacists who participated in this study did not work closely with their local AHS staff or clients to improve medication management (29). Many of the pharmacists expressed a desire to work more closely with AHSs but were uncertain as to how to broker a relationship which would facilitate a more collaborative approach to patient management (29).

The Aboriginal and Torres Strait Islander participants in this study expressed a desire to better understand their medicines, to be provided with more medication information and to be given resources and tools to assist them with managing their medicines (34). Specifically, they requested written information in simple, plain English, and a medication history list. Very few, including those who had participated in HMRs, had received any written information. The majority of patients and AHS staff in this study supported a medication review process which might assist better medication management and adherence (34).

The majority of nurses and AHWs in this study reported that they would benefit from more medication education training (13). The GPs in this study also commented that assistance with therapeutic decision-making and learning more about medicines were valued outcomes from their HMR interactions with pharmacists (13).

This study found that many Aboriginal and Torres Strait Islander people in urban and rural settings had little or no relationship with community pharmacists and received little or no medication counselling, even though they had access to pharmacies (21). In some remote
areas there are no community pharmacies, often little or no pharmacy services, and no pharmacist-patient interactions (35).

More interaction between pharmacists and Aboriginal and Torres Strait Islander people in all settings is needed to assist chronic disease management, safe and effective medication use and improved health outcomes. The pharmacist participants in this study indicated that they would like to provide HMRs, medication education and health promotion assistance but were hindered from doing so due to lack of remuneration models and lack of relationship with the AHS and its staff and patients (29).

Similar to other GP settings, co-locating a pharmacist within an AHS may enable the pharmacist to address the medication education needs of health service staff, develop relationships with staff and patients, develop resources and protocols, conduct effective medication counselling with patients and perform a liaison role with the community pharmacy (36-38).

7.2.2 Medication review

*Medication reviews are useful*

Despite the high burden of chronic disease and the resultant multiple medicines prescribed, very few Aboriginal and Torres Strait Islander people are referred for HMR (39, 40). Previous studies indicate that medication review may reduce hospital readmissions, improve medication knowledge, improve medication adherence, reduce inappropriate prescribing and improve health outcomes (41-45).
An evaluation of HMR eligibility criteria in 2014 recommended patients’ eligibility for an HMR be based on needs categorisation (46). This needs categorisation and refined eligibility were designed to reduce over-usage or injudicious usage, and subsequent cost blow-outs, of the HMR program. The evaluation identified patients who had chronic disease and/or complex management requirements, in addition to instability of health status and likelihood of compromised adherence, as being at high risk of medication misadventure. This high risk of medication misadventure, together with the poor health status of many Aboriginal and Torres Strait Islander patients, should result in unquestioned eligibility and prioritisation of Aboriginal and Torres Strait Islander people for medication review. Investment in medication review for Aboriginal and Torres Strait Islander people could significantly improve health outcomes (e.g. reduced renal dialysis from poorly controlled hypertension and/or diabetes) and reduce hospitalisations, and should result in a significant net saving to the state and national health budgets. Significant investment to increase awareness and implementation of medication review programs in AHSs is needed.

Awareness of the existence of the HMR program was low among many of the patients, AHS nurses and AHWs who participated in this study. Similarly, low HMR awareness and lack of understanding of HMR were found by other studies in other demographic groups (47-49). As in previous studies, the awareness by GPs of the mechanics of how and when to refer a patient for an HMR was also found to be low in this study (13, 50). The 2015 evaluation of Fifth Community Pharmacy Agreement programs (5CPA) found that consumers had difficulty accessing programs due to low awareness and low GP engagement, and that this was especially the case for Aboriginal and Torres Strait Islander people and other CALD people (51).
Some patients involved in this study expressed frustration that they had not been informed of this “useful” HMR program previously. This study has not recorded the number of HMRs due to difficulty in obtaining accurate data. Aboriginal identity of HMR participants is not confirmed or recorded as part of the HMR process, and so there are no accurate data about the number of HMRs being conducted with Aboriginal and Torres Strait Islander people. Even within each AHS site the number of HMR referrals may show great variability over a period of time, reflecting fluctuations in AHS staffing and awareness, and the availability and prioritisation of the HMR program by individual staff members.

Most of the health professionals in this study were supportive of the HMR program benefits, and stated that potential drug interaction and adverse-effect advice from the pharmacist were important HMR outcomes (13). Both patients and health professionals viewed a culturally appropriate medication review as a very useful tool and stated that because medication review engaged patients in discussions about their medications and empowered patients with knowledge and medication choices, they would be likely to improve medication adherence (34).

In line with previous reports (40, 51, 52) in which practitioners and patients saw clear benefits of improved health outcomes resulting from medication review programs, the majority of Aboriginal and Torres Strait Islander patients, and the AHS staff who participated in this study, perceived that HMRs would be useful for increasing medication knowledge and improved health outcomes. In this study, however, it was clarified that the program would only be beneficial if the design and processes were more culturally appropriate (13).
**Culturally appropriate medication review**

Providing patient-centred, culturally safe healthcare requires the provision of services that meet patient needs in an individualised, holistic, respectful and empowering way which facilitates the development of professional and patient relationships (53). Effective, patient-centred care for Aboriginal and Torres Strait Islander people also requires a culturally safe environment (8).

This study confirmed that most Aboriginal and Torres Strait Islander people do not consider community pharmacies to be culturally safe environments (21). To improve pharmacist engagement with Aboriginal and Torres Strait Islander patients, pharmacy environments needed to be made welcoming, with private counselling areas. Aboriginal health training needs to be imbedded in university curricula, and cultural competency needs to be imbedded into the profession’s competency standards, as has been done in New Zealand (54).

The Australian government funds a number of pharmacy programs, including HMR, which have been designed and implemented without consultation with Aboriginal and Torres Strait Islander people. Consequently, there are many aspects of the HMR program rules which are culturally inappropriate and contribute to low utilisation of the HMR program by Aboriginal and Torres Strait Islander people (40, 52). For Aboriginal-specific programs, such as QUMAX, RAAHS (S100) and Closing the Gap PBS Co-payment measure, there has been consultation with NACCHO, a peak Aboriginal representative body. However, there is still limited consideration of Aboriginal cultural safety and little or no Aboriginal representation on committees, when designing mainstream pharmacy programs.
The findings of this study concord with program evaluations which found that greater flexibility of administration and rules is needed to allow for cultural difference (51). To improve HMR cultural safety the following changes need to occur.

1. The HMR processes need to be explained to patients (34).
2. The interviews should be organised by a trusted, familiar party, such as the AHS.
3. Patients should be given a choice of location for the interviews (13, 34).
4. The AHWs should be integrated throughout the HMR process, writing referrals, attending the interviews and providing follow-up (13, 34).
5. A remuneration model which acknowledges AHS and AHW input is needed to ensure sustainability and viability (13).
6. Family members and significant community members need to be included in the HMR interviews (34).
7. Group or shared medication reviews should be an option for patients (34).
8. The pharmacist must be a culturally responsive health professional who builds relationships, is trusted and communicates appropriately and effectively (13, 34).

Most pharmacists receive little or no cultural training (55). The majority of pharmacist respondents (69.5%) in this study indicated that they had never received any form of cultural or Aboriginal health training. Almost half of the pharmacists in this study (49.4%) admitted that they had a lack of understanding of cultural issues (29). The lack of understanding of cultural issues by pharmacists was identified, by both patients and health professionals in this study, as a major barrier to patients’ engagement with pharmacists and as a barrier for referral of a patient to a pharmacist by a GP (13, 29).
Cultural training is an important first step to achieving cultural awareness and understanding, but alone may not be enough to achieve cultural competency (2). A number of studies have shown that health professionals need to be working closely with Aboriginal people before developing true understanding and attitudinal shift (2, 56). An evaluation of a pharmacist-led medicines education programme for AHWs reported that the pharmacists’ changes in attitude and improved cultural competency were more significant after the pharmacists worked closely with local AHWs, than directly after they received some cultural training (57).

Co-locating a pharmacist within an AHS would enable the pharmacist to work closely with Aboriginal colleagues and patients, acquiring local cultural knowledge, trust, strong relationships and a higher level of cultural competency. This AHS pharmacist, even if only employed part-time, would facilitate closer relationships between the AHS and the dispensing, community pharmacists. Pharmacist respondents in this study were unsure how to facilitate and build relationships with their local AHS and its staff, and this inhibited their engagement and service delivery to the health service (29). An AHS pharmacist would assist with brokering these relationships and thus increase Aboriginal patient engagement with pharmacists both within and external to the AHS.

*Integrating medication review into Aboriginal Health Service systems*

As in other HMR studies, some GPs in this study, although aware of the HMR program, did not regularly refer patients and were at times the “bottleneck” to the process (48, 52). As in previous research in non-Indigenous populations, barriers to GPs’ referring patients for HMR included the time needed to undertake the administrative tasks of HMR referral, complex HMR program rules, lack of conviction of HMR outcome benefits, and poor GP-
pharmacist relationships (58, 59). The 5CPA evaluation stated that whilst GP engagement with pharmacists in the provision of programs and services appeared to have improved, that collaboration remained sub-optimal (51).

Additional barriers to GPs’ referring Aboriginal and Torres Strait Islander patients for HMRs were identified in this study. The complexity and co-morbidities of Aboriginal patients resulted in increased workloads, greater time pressures and lower prioritisation of medicine discussions for AHS GPs (13). Also evident were a heightened protection by GPs of their patient relationships, paternalistic attitudes to patients, perceptions that pharmacists were not culturally sensitive, and a lack of available AHS staff to support HMR processes (13). This study reinforced the 2008 Campbell report findings from mainstream population groups that GPs needed assistance with administration of HMRs and that HMRs were very dependent on the relationship between GP and pharmacist (52).

The research undertaken for this thesis found that in addition to low levels of GP referral, other barriers included the lack of relationship between pharmacists and AHSs, and that pharmacists found HMR interviews for Aboriginal patients difficult to organise (29). The patients participating in this study were adamant that they would only agree to an HMR if it was organised by someone they trusted (34). Thus, HMR referral, implementation and follow-up of medication reviews should be organised by AHS staff who are known to and trusted by their patients.

As a previous evaluation has shown, changes to the medication regimen by the GP subsequent to the HMR interview were not often seen by the patient as resulting from the HMR (52). Many patients in this study viewed the HMR interview as a stand-alone information session and stated that more regular follow-up would be useful (34). Some AHS
staff commented that often patients did not return to the AHS within a timely period after the HMR, and thus medication management plans were not necessarily revised in accordance with the HMR report (13). It is suggested that systems be implemented in AHSs to recall patients after an HMR, and that medication reviews be conducted regularly rather than infrequently. A previous study has shown that a pharmacist’s recommendations are much more likely to be accepted and implemented by the GP when the HM-accredited pharmacist is co-located in a GP practice (60).

Evaluators of the QUMAX program found that QUMAX progressed most successfully where a person was appointed to champion program implementation (55). Similarly, all the AHS health professionals interviewed in this study agreed that for medication reviews to become a regular occurrence within the AHS, a dedicated organiser/driver of the program within the AHS was needed (13). Many suggested that there should be health workers specifically employed, trained and reimbursed as AHW medication specialists to drive and assist such medication systems and processes. Whilst many AHWs in this study stated that they required more medication training and that a dedicated medication specialist role would be optimal, many were sceptical that such a role would occur due to the many competing priorities for AHWs.

A number of both patient and health professional participants in this investigation suggested that medication review should be integrated into existing health assessment and chronic disease management processes (13, 34). This was also identified in the Campbell evaluation report in 2008 (52). Previous research has shown that integration of patient care plans and HMRs provide positive health outcomes for patients (61).
The Medicare Benefits Schedule (MBS) has Chronic Disease Management items which enable GPs to co-ordinate the care of patients with chronic disease and adopt multi-disciplinary team-based care. Under this schedule, GPs, assisted by practice nurses, Aboriginal and Torres Strait Islander health practitioners, and AHWs, can refer patients to eligible allied health clinicians for a maximum of five allied health services in a calendar year (62). There are currently 13 allied health professions listed as eligible providers, but pharmacists are not included. General practices can also claim on MBS for Indigenous Health Assessments (63). This health assessment allows another five allied health services, but once again pharmacists are not included in the list of eligible providers. Revision of the MBS to imbed pharmacist services such as medication review programs within current Indigenous health plans would enable engagement of a pharmacist, prioritise medication management and streamline processes for AHS health professionals.

This study reinforced the Campbell report findings that the HMR program exists in isolation rather than in parallel with other Medicare items (52). The 2015 evaluation of the suite of Fifth Community Pharmacy Agreement (5CPA) programs (2010-2015) also stated that HMRs were undertaken in isolation from other primary care initiatives, and that there was little integration and unclear linkages between pharmacy programs (51) Only one AHS participating in this study had established internal systems which triggered an HMR referral as part of an Indigenous health assessment or a Chronic Disease management care plan. Arguably, referral for medication review should be an essential component of chronic disease management in primary care.

This research clearly identified the lack of relationship between pharmacist and AHS, and between GP and pharmacist. Professional collaboration and co-management of chronic
disease have been found to improve patient outcomes and reduce the risk of medication misadventure (64, 65). The 5CPA evaluation report calls for incentivised professional collaboration using a model based on pay-for-performance patient outcomes, similar to the United Kingdom Quality Outcomes Framework (51, 66). Integrating a pharmacist into a GP practice is known to increase rapport between health professionals, enhance information exchange and facilitate communication (38, 67, 68). In this research health professionals and patients alike called for a pharmacist to be co-located within AHSs (13, 34). Pharmacists working in primary care need to have the right personality attributes and may need communication training (69). A number of studies have found that many pharmacists deliver information in an instructional way rather than as a two-way discussion (70, 71). Co-located AHS pharmacists may need motivational interviewing and communication training, as well as cultural training.

A previous evaluation has reported that HMRs had not resulted in much improvement in cooperation within the healthcare team (52). Co-location of pharmacists in GP practices has been shown to have enabled greater communication, collaboration and relationship building among the co-located health professionals (72, 73). Thus for effective collaboration and integration of medication reviews into health assessment or chronic disease management plans, pharmacists need to be co-located with GPs, nurses and/or AHWs conducting health assessments and implementing chronic disease care plans in AHSs. Pharmacists, when imbedded within GP services, both overseas and in Australia, are providing advanced clinical services resulting in significant reductions in medication-related problems and improvements in medication adherence (74, 75). This co-location of pharmacists in AHSs could result in interventions which significantly improved blood
pressure, glycosylated haemoglobin (diabetes), cholesterol, osteoporosis management and cardiovascular risk, as has occurred in general practice clinics (76).

Co-location of a pharmacist with an AHS could result in the pharmacist, with AHW collaboration, being the driver of the medication review processes. The AHS pharmacist would develop relationships with the referring GPs and potentially reduce some barriers associated with GPs’ protective or paternalistic patient relationships. The AHS pharmacist would liaise closely with community pharmacies and enhance the valuable contribution of community pharmacies to the AHS and its patients.

**Tiered, flexible and regular medication review**

This study, like previous research, found that HMRs provided medication information and benefits on a number of levels. For patients, in this study as well as in previous studies, the HMR interview provided increased medication knowledge and health literacy, validation, affirmation, emotional reassurance and empowerment (77). Comprehensive HMR reports have been found to assist GPs to rationalise prescribing, use evidence-based medicine, identify drug interactions and adverse effects, understand patient medication adherence and reconcile medications across a variety of settings and prescribers (50). The GPs in this study similarly valued the HMR reports (13).

The 2005 Urbis evaluation of the HMR program recommended a tiered payment structure reflecting levels of complexity of medication reviews from case to case (40). The recent 5CPA evaluation suggested delivery of services and programs according to complexity of patient need, with appropriate funding allocated across the continuum of service (51). Most Aboriginal and Torres Strait Islander patients have multiple co-morbidities and thus high
complexity. These, together with higher rates of death at a younger age than the non-Indigenous population, suggest that a greater proportion of the medication review funding should be allocated to Aboriginal and Torres Strait Islander people.

A type of tiered medication review structure was introduced in 2012 with the commencement of the MedsCheck program. MedsCheck was introduced to provide patients with medication information from non-accredited pharmacists, without referral by or need for GP collaboration. MedsCheck and Diabetes MedsCheck services focus on education and medicines literacy and are offered opportunistically by community pharmacists within their pharmacies to patients taking multiple medicines. There is no integration of these services with GP management plans, team care arrangements or medication management plans (78).

This study showed that patients highly valued the education component of the HMR interview (34). This medicines information could be similarly received in a MedsCheck-style process. There are no recorded numbers of Aboriginal and Torres Strait Islander people who have had a MedsCheck. Anecdotally, it is believed that very few Aboriginal and Torres Strait Islander people have participated in MedsCheck (78). This may be a result of Aboriginal and Torres Strait Islander people’s unease in discussing their health in community pharmacies, which are viewed as culturally unsafe environments. It may also be a result of their lack of relationship with community pharmacists (21, 51). The more concise MedsCheck-style consultation (Medication Usage Review) (78), which focuses on medication reconciliation and providing medicines information to the patient without collaboration with the GP, may be a useful adjunct to HMR for Aboriginal and Torres Strait Islander people, if conducted in a setting other than a community pharmacy.
Currently, there is limited evidence about whether multiple interventions and/or a combination of medication review programs is the most effective strategy to improve behavioural and health outcomes (51). Participants in this study called for regular engagement with pharmacists regarding medication issues, rather than annual or every two year engagements (34). Regular health coaching has been proven to be more effective than once-only advice (79, 80). Haynes et al’s systematic review found that regular communication, follow-up and family engagement led to improvements in health outcomes (81). In this study, participants were disappointed that there were no follow-up visits or engagements with the pharmacist after the HMR interview (34). Participants in this research called for regular follow-up to discuss their medicines, aligning with findings from the Campbell report, which recommended that Aboriginal and Torres Strait Islander patients have multiple visits with a pharmacist (52). In the NZ Medicines Use Review model, the pharmacist provides at least two follow-up consultations (82). The current HMR program rules, which only allow one HMR per patient every 24 months, conflict with previous recommendations (39) and the findings in this study. To maximise medication management, multiple interactions with patients are needed.

A blended program of full medication reviews, like HMRs and MedsCheck style medication information programs, is needed to resolve medication issues, reduce medication misadventure and improve medication adherence. A program consisting of a medication information session, followed by a full medication review, and then one or two follow-up sessions within a 12-month period, appears optimal, based on the available evidence.

Co-location of a pharmacist within an AHS would allow the pharmacist to regularly engage with patients and to deliver appropriate levels of service, be that stand-alone medication
counselling, medication reconciliation, a full medication review, a group medication education session, a tailored interaction to address a patient’s individual needs or a combination of all of the above.

7.2.3 Pharmacists in primary care

A non-dispensing pharmacist co-located within an AHS would be able to address many of the issues identified in this research and in the literature. The literature outlined that for a health professional working with Aboriginal patients to be effective, they needed to commit time to building rapport, take time to develop effective communication and decision aids, be culturally competent, provide services in a culturally safe environment, deliver holistic care, work closely with AHWs, integrate services and work in team care arrangements. This model can best be delivered by a pharmacist working within the AHS.

The AHS pharmacist would be the “driver” of the medication review processes and integrate medication review into AHS systems and chronic disease management programs. Close working relationships between the pharmacist and AHS GPs and AHWs would facilitate inter-professional healthcare. The AHS pharmacist would develop the trust, relationships and cultural competency needed to enable effective, appropriate communication with Aboriginal and Torres Strait Islander patients and AHS staff. The AHS pharmacist would be able to source or create appropriate written medication resources for his/her patients. Access to medical software and complete patient histories would enable the AHS pharmacist to make meaningful, informed clinical interventions (83, 84).

The pharmacist role within the AHS needs to be more than just one that facilitates and implements medication review. High levels of prescribing errors and hospitalisations due to
medication interactions, adverse effects, and under- or over-dosing may indicate that GPs would benefit from prescribing assistance and a review system, such as medication review by a pharmacist (59, 85). This is especially true in settings where GPs have a heavy patient load or complex patients, such as in AHSs, and do not have time to reconcile patient histories and review patients’ medications (86). Consultations undertaken by pharmacists located within primary healthcare clinics have been proven to be effective in identifying and resolving medication-related problems and improving medication adherence. (74)

Aboriginal Health Service pharmacists would have a role to play in providing daily advice about prescribing to GPs, as well as regular medication education and prescribing protocols for AHS nurses, AHWs and GPs (83). Pharmacists have a role to play in monitoring chronic disease and medication outcomes, and in coaching patients for better medication adherence. Also, they should be involved in community health promotion, immunisation, and health assessments when appropriate. Pharmacists are well-qualified to facilitate shared medical appointments and group education sessions. An AHS pharmacist would assist patients to navigate our complex health and dispensing systems, overcome any medication access barriers and liaise closely with community pharmacies on such services as DAAs, prescriptions and medication supply. He/she could also assist with administration of programs such as QUMAX, and in remote AHSs where medicines are received in bulk and usually dispensed by nurses, GPs or AHWs, the pharmacist would also oversee the dispensing and supply processes.

The Pharmaceutical Society of Australia, with support from the Australian Medical Association, have lobbied government to fund salaried positions for pharmacists in GP practices and AHSs in line with current funding arrangements for practice nurses (87). This
research endorses the funding of salaried positions which will imbed pharmacists within AHSs. To date no funding has been made available for salaried pharmacist positions.

The few pharmacists who are employed by AHSs are mostly funded through chronic disease programs and sometimes funding from the Medical Specialist Outreach Assistance program for Indigenous Chronic Disease. It is complicated and time-consuming to achieve this funding, and often AHSs have to choose between pharmacy and nursing staff. Whilst AHSs have little understanding of a non-dispensing pharmacist’s role, and there is no remuneration specifically allocated for pharmacists, they will continue to prioritise employment of nurses.

Revision of the MBS to remunerate pharmacists for provision of services, other than just medication review, would allow for more service delivery from pharmacists to AHSs. Pharmacists need to be included in the list of MBS eligible allied health service providers. Income from HMRs may provide some pharmacist time to an AHS but restricts pharmacists to medication review services only. In rural and remote areas, travel time and cost contribute to lack of viability and sustainability of HMRs (78).

If pharmacists were employed in salaried positions within AHSs they would not need to claim for HMRs through the MBS program and this would “free up” some of this capped funding pool for HMRs. The salaried AHS pharmacists could tailor their service delivery to their client and AHS needs. By my rough calculations, for a modest annual investment of $10 million the government could employ 100 pharmacists in approximately 100 AHSs across the country, making a significant difference to Aboriginal health outcomes. Follow-up research which evaluates alternative medication review models and multiple interventions is needed.
If pharmacists were funded for salaried positions in AHSs, the government could abolish the current S100 support allowance to pharmacists, and some of the components of the QUMAX programme, as these services would be delivered by the AHS pharmacist. The abolition of the S100 support allowance and half of QUMAX funding would save approximately $5 million (according to expenditure allocated in 6CPA). This saving, together with improved health outcomes (e.g. reduced renal dialysis from poorly controlled hypertension and/or diabetes) and reduced hospitalisations due to medication misadventure, should result in a significant net saving to the national health budget. Proper economic analysis is needed of this proposal.

Having a pharmacist co-located within an AHS allows a sustainable systems-based approach to implementing medication management processes.

7.3 Congruence of perspectives across participants and settings

Although Phase 1 of this research was conducted with patients in different AHS sites across urban, regional, rural and remote settings, recurrent themes emerged at all sites. These included difficulty in managing medicines, the need for more medication information, the lack of effective engagement between patients and GPs, and between patients and pharmacists. Other recurrent themes included lack of awareness of the HMR program and support for a more culturally appropriate medication review program.

Phase 2 of this research was conducted with health professionals in AHSs, including AHWs, GPs and nurses. Across these professions there were recurrent themes. These included difficulty in managing medicines, the need for more medication information, lack of
awareness of the HMR program, support for a more culturally appropriate medication review program, a need for less bureaucratic HMR processes, and poor relationships with pharmacists.

Findings from the pharmacist survey in Phase 3 also found a perceived lack of awareness of the HMR program by consumers and health professionals, support for a more culturally appropriate medication review program, a need for less bureaucratic HMR processes, and pharmacists’ poor relationships with GPs and staff at AHSs.

Although this study had limitations, recurrent themes emerged across all three phases of research. Significant congruence exists between patients and their service providers on how to improve medication management and HMR services for Aboriginal and Torres Strait Islander people. Patients, AHS service providers and pharmacists agreed that HMRs should be organised by the AHS, that referrals should be written by AHS nurses and AHWs, as well as GPs, and that success of the program depends on having a “driver”.

This congruence of perspectives related to medication knowledge, awareness, relationships and culturally appropriate HMR, across the three phases of the research and across all sites, adds validity to this research.

7.4 Study limitations

The limitations of this study included small sample sizes of AHS sites, Aboriginal and Torres Strait Islander participants, AHS health professionals and pharmacists.

All AHS sites used in this study were located within reasonable proximity to pharmacies, and thus the views of patients who cannot access pharmacy services have not been
investigated. Only Aboriginal and Torres Strait Islander patients who could speak English and who attended an AHS were recruited to participate in focus groups. Thus the views of non-English-speaking Aboriginal and Torres Strait Islander people have not been explored. The views of Aboriginal and Torres Strait Islander people who do not attend AHSs have also not been captured. Therefore, it is difficult to extrapolate findings to all Aboriginal and Torres Strait Islander people.

Most of the Aboriginal and Torres Strait Islander people who participated in focus groups had no experience or knowledge of HMRs. Their perceptions of the HMR program are based on the HMR program description presented by the researcher.

The researcher was a non-Indigenous woman with no relationship with study participants. Although the researcher worked hard to establish trust, the lack of relationship may have inhibited participants from sharing some thoughts.

Despite the limitations described here and in Chapters 3-6, the findings endorse conclusions from previous literature. The triangulation of findings across the three phases of the study adds validity to this research.

### 7.5 New findings and recommendations

Previously, there has been very little research which has explored medication management challenges and potential solutions for Aboriginal and Torres Strait Islander people.
7.5.1 Culturally appropriate medication reviews are useful for Aboriginal and Torres Strait Islander people

As well as endorsing previous research, which found that HMRs provided medication information and benefits for the general population, this study found that culturally appropriate medication review could also build pharmacists’ relationships with their Aboriginal and Torres Strait Islander patients, and empower Aboriginal patients to ask questions and make medication choices. This would potentially increase medication adherence and improve medication management for Aboriginal and Torres Strait Islander people.

During this research, participants suggested strategies to improve medication management and the HMR program for Aboriginal and Torres Strait Islander people and AHS staff. To increase HMR or alternative medication review programs uptake by Aboriginal and Torres Strait Islander people, strategies are required to increase awareness, prioritise medication management, streamline processes, reduce administrative burden and increase medication review referrals.

To increase the accessibility and effectiveness of medication review for Aboriginal and Torres Strait Islander people, the following strategies, as identified by this research, are recommended.

- Rename the HMR program, removing the word, “Home”, so that there is no implication that the HMR has to occur in a “home”
- Develop culturally appropriate HMR promotional resources, including leaflets and posters for the AHS, that describe the purpose and processes of HMR
• Encourage AHS management to prioritise medication management programs such as medication review, and appoint staff to implement medication management programs

• Broaden referral options. The AHW staff, as well as GPs, need approval to write HMR referrals for their patients

• Facilitate HMR processes through the AHS. The AHS staff need to refer patients, conduct all administrative processes, organise HMR interviews, and call back patients after interviews to revise medications with GPs

• Remunerate the AHS for its participation in facilitating an HMR and for attendance of an AHW at an HMR interview

• Increase options for the AHS patient regarding the HMR interview
  o a single or group HMR
  o location of HMR at home, clinic or other suitable place
  o choice of AHW to attend the interview
  o option to invite family or other significant community members to attend

• The HMR pharmacist to be chosen and trained by the AHS

• Culturally appropriate clinical resources to be sourced by the pharmacist and made available to patients

• Make an HMR report/Action plan available to the patient

• Remunerate for regular follow-up visits and medication education by the HMR pharmacist, using a tiered payment scale

• Provide community pharmacists and accredited pharmacists with cultural training

• Encourage pharmacists to make their community pharmacies culturally safe environments.
7.5.2 Better relationships and cultural training needed

One of the most significant findings of this research was the poor relationships between community pharmacists and AHS patients, GPs, nurses and AHWs. Even pharmacists working in close proximity to an AHS had little or no engagement with the AHS service providers or clients, other than to facilitate medication supply (29). The GPs hesitated to refer patients for HMRs as they felt pharmacists were too busy, unavailable, not culturally trained and/or not suitable to clinically engage with their patients (13). The AHWs commented on pharmacists’ lack of cultural sensitivity and their lack of relationship with their Aboriginal and Torres Strait Islander clients (13).

Over half the pharmacist participants identified the lack of relationship with their local AHS as the greatest barrier to providing professional services to Aboriginal and Torres Strait Islander people (29). Pharmacist participants were keen to deliver more education and clinical services to AHSs if their services were remunerated appropriately and if relationships could be brokered. Pharmacists were unsure how to facilitate these relationships.

Many pharmacists felt they would be more confident in engaging with Aboriginal and Torres Strait Islander people and organisations if they received some cultural awareness training. Currently, there is little or no cultural training imbedded in many pharmacy school curricula or pharmacists’ continuing education.

Aboriginal pharmacists could better facilitate relationships with Aboriginal people, but to date there are very few Aboriginal pharmacists. In line with medicine and other allied health
disciplines, more pathways and scholarships for Aboriginal students to enter university and study pharmacy need to be created (88).

7.6 Conclusion

The aim of this thesis was to identify strategies for improving medication management for Aboriginal and Torres Strait Islander people who attend AHSs. Whilst the original focus was to identify strategies to increase utilisation of the HMR program, major organisational and cultural issues were identified which could affect the delivery of all pharmacy programs. Thus, the conclusion presented here extends beyond the original aim.

Data from this study did inform and answer the research questions. Participants from patient, service provider and pharmacist groups confirmed that little or no medication education occurs with Aboriginal and Torres Strait Islander clients, and that Aboriginal and Torres Strait Islander people are low users of the HMR program, despite their high burden of chronic disease. All groups agreed that medication review could be a useful tool to increase medication knowledge and adherence. However, most found the current HMR program rules and processes inappropriate, from both cultural and AHS systems perspectives.

A specific medication management program addressing the needs of Aboriginal and Torres Strait Islander people needs to be designed in collaboration with Aboriginal and Torres Strait Islander people and their key organisations. Such a medication management program needs to deliver culturally appropriate medication education on a regular basis to clients and their families/communities, to increase health and medication understanding, address
low health literacy, support clients in their medication choices, liaise with dispensing pharmacies, and build trust and rapport.

The multiple co-morbidities of many Aboriginal and Torres Strait Islander people often result in polypharmacy, complex medication regimens and potential medication misadventure. Therefore, comprehensive medication reviews which enable medication reconciliation, assist rational prescribing, identify potential adverse effects and drug interactions, and recommend dosing and monitoring regimens and optimisation of medicines, are essential. Many GPs highly value the checking and safety support that HMRs provide to their prescribing. Most GPs find the HMR reports informative and educational. Some AHSs have part-time/locum/fly-in fly-out GPs, and a high staff turnover. Often, rural and remote AHSs have difficulty recruiting GPs and employ overseas trained doctors. In these settings, HMRs are especially important as they assist GPs and nursing staff to provide safe and appropriate prescribing of medicines and continuity of care.

Medication programs need to be integrated into the myriad AHS programs and funding sources. Medication programs need to provide income to AHSs and so have equal status and value as other chronic disease management programs. Medication management programs need to be facilitated by the AHS, an organisation which is trusted and culturally sensitive to community needs. This research showed that most patients would only participate in medication reviews if they were organised by the AHS.

The cultural divide between many community pharmacists and their Aboriginal and Torres Strait clients, and the lack of a culturally safe space within many community pharmacies in which to discuss health issues, are large and real barriers to effective communication between pharmacists and their Aboriginal clients. Community pharmacists need to receive
comprehensive cultural training. A program needs to be developed which connects community pharmacists with their local AHSs, local AHWs and local Aboriginal communities. A pharmacist who is co-located within an AHS could work with Aboriginal colleagues to help facilitate the building of these relationships with community pharmacists. It takes time to build relationships. Not until trust, respect and rapport are developed can effective two-way communication with Aboriginal and Torres Strait Islander clients occur.

There are currently very few Aboriginal pharmacists in Australia. To increase the number of Aboriginal pharmacists, more pathways for Aboriginal students into university pharmacy schools and more scholarships for Aboriginal students are needed.

The role of a pharmacist in an AHS should be more comprehensive than just being a provider of one-off medication reviews. Previous studies indicate that medication management programs are most effective if they include multiple interactions between a pharmacist and the patient, and close collaboration between pharmacists and the patients’ other healthcare providers (45, 89). An Aboriginal medication management health assessment should include individual or group patient education on disease, lifestyle modifications and medicines, as well as a full medication review and action plan, and at least two follow-up medication adherence/monitoring reviews. The suite of medication management programs needs to be integrated into AHS systems.

Without appropriate medication management and improved medication adherence, chronic diseases will continue to be poorly managed and there will be high incidences of complications and increased hospitalisations. Co-location or integration of culturally responsive pharmacists in AHSs to implement medication management services and
engage patients and service providers in discussions about medications is crucial to improving health outcomes and “Closing the Gap” for Aboriginal and Torres Strait Islander people.

7.7 Translation of research into Practice

This research has already contributed significantly to discussions regarding the need for revised medication programs for Aboriginal and Torres Strait Islander people. Translation of this research into practice is outlined in the Epilogue.
7.8 References


13. Swain L, Barclay L. Medication reviews are useful, but the model needs to be changed: Perspectives of Aboriginal Health Service health professionals on Home Medicines Reviews. BMC Health Services Research. 2015;15(366).


Epilogue

Since commencing my PhD research in 2008 I have led a number of projects driving improvements to provision of pharmacy services to Aboriginal and Torres Strait Islander people. I have also been advocating for change and have contributed to government submissions and education programs.

My learnings from my PhD study have enabled me to bring skills and expertise to these projects. My increased cultural understanding and development of relationships with Aboriginal and Torres Strait Islander people have assisted further research. Research skills, such as focus group facilitation with Aboriginal and Torres Strait Islander people and Aboriginal Health Service staff, have been used. The key principles of respect and reciprocity needed in Aboriginal research have been applied and taught to other researchers. I frequently work with an Aboriginal colleague who has helped me and provided more cultural credibility, wisdom and learning.

The projects listed below address the findings of my research and thus are examples of translation of research into practice. They respond to the need for more Aboriginal people working in pharmacies, improved written medication information for Aboriginal people, much-needed cultural training and guidelines for pharmacists, changed medication review models and co-location of pharmacists in Aboriginal Health Services.

Although it is difficult to prove, I believe that many of these projects have been initiated due to my advocacy for equity and improvements to pharmacy services for Aboriginal and Torres Strait Islander people. They have been initiated as a result of this doctoral work and
informed by it. I have sent all my publications to the appropriate representatives at the NACCHO, the Department of Health and the Pharmacy Guild of Australia.

2010-2016: Aboriginal Pharmacy Assistant School Based Traineeships – Northern Rivers Career Link Pharmacy program

This program won the National Medicines Symposium (NMS) National MedicineWise Award 2012 for Building a MedicineWise community through consumer programs.

My role: I designed the program and brokered the collaboration between Connect, TAFE and the Department of Education and Training. Connect now runs this program, but each year I work with local pharmacists to obtain employment sites for trainees.

Project overview
Pharmacists have had little or no training in Indigenous health or cultural issues and consequently may fail to convey the correct messages about medication usage in terms understood by their Indigenous patients. Aboriginal Pharmacy Assistants could play a vital role in bridging the gap between pharmacists, pharmacy assistants and Indigenous patients.

The CareerLink Pharmacy project in NSW’s Northern Rivers has implemented Aboriginal school student pharmacy assistant traineeships, and supported these trainees to complete a Pharmacy Assistant Certificate II at TAFE, complete high school and attain employment in local pharmacies. This program has given Aboriginal school students employment pathway opportunities and helped them play an important role in assisting the medication management and healthcare of Aboriginal patients.

This program works with community members to select and mentor students identified as potential advocates for Aboriginal health, and offers Aboriginal youth employment
opportunities and support. A number of the trainees have now been employed full-time in pharmacies as the pharmacists have found them invaluable employees who can play an important role in assisting the medication management and healthcare of Aboriginal patients. This program still continues today and has graduated over 25 Aboriginal pharmacy assistants with Certificate II Pharmacy Assistant.

2010: Development of the *Living Everyday with My Heart Failure* resource for the National Heart Foundation

This resource won the NMS National MedicineWise Award 2014 for Excellence in Consumer Information.

My role: As one of the lead researchers I was involved in project tender, study design, establishment of participant sites through relationships, facilitation of focus groups and interviews with Aboriginal clients and AHS health professionals in needs assessment and audience-testing phases, expert input into content and language, and thematic analysis.

**Project overview**

Chronic heart failure (CHF) is a major course of illness and death among Aboriginal and Torres Strait Islander communities. Whilst self-management resources have been developed to support heart failure patients, standard health resources were not culturally or linguistically useful for many Indigenous people. This project produced an evidence-based resource for supporting CHF self-management in Aboriginal and Torres Strait Islander Australians.

Consultation, collaboration and partnership underpinned this project. It was critical that the resource met the needs of the clients and health professionals who would be using it,
and input from all stakeholders guided each step of the resource development. A partnership between the Heart Foundation’s Aboriginal and Torres Strait Islander Chronic Heart Failure Working Group and a multi-disciplinary research team comprising researchers, pharmacists, health promotion educator and specialist cardiovascular nurse was established. Both the working group and the research team included Indigenous and non-Indigenous members. Consultation and collaboration was a key focus of the project, with an initial national needs analysis providing input from 54 stakeholders across the country. During development of the resource, extensive consumer consultation saw input from 33 Indigenous community members throughout Australia and from an additional 15 health professionals.

Phase 1 comprised an extensive needs analysis, whilst Phase 2 was the development and audience-testing Phase. Key findings from the needs analysis guided the resource development. The aim of the audience-testing phase was to allow input from the community into the final resource and to determine if the layout, content and design of the resource met the needs of clients with CHF and their health professionals. A combination of individual semi-structured interviews and focus groups was used in both Phase 1 and Phase 2, with AHWs and members of the CHF working group acting as cultural brokers between the research team and their local communities.

The resource, published by the Heart Foundation, is used extensively throughout Australia. Whilst the resource was developed for the Indigenous community, feedback has indicated a high uptake of use among non-Indigenous clients with CHF, showing that an attractive, easily understood resource meets the needs of many CHF clients. The *Living Everyday with My Heart Failure* resource is available from the Heart Foundation:

2014: Guide to Providing Pharmacy Services to Aboriginal and Torres Strait Islander People

This guideline was developed by the Pharmaceutical Society of Australia (PSA), with funding from the Department of Health, to assist pharmacists to become more culturally competent and better able to address the needs of their Aboriginal and Torres Strait Islander clients.

My Role: I was the consultant and author for this guideline. Content was guided by a working group which consisted of Indigenous people and pharmacists who work with Indigenous people.

The guide includes information on understanding culture, building relationships, communication, Aboriginal and Torres Strait Islander pharmacy programs, improving cultural safety in the pharmacy, and considerations for provision of pharmacy services to Aboriginal and Torres Strait Islander people.

This guide was launched at the PSA national pharmacy conference in 2014. Printed copies were distributed to pharmacists. It is also available online at http://www.psa.org.au/wp-content/uploads/Guide-to-providing-pharmacy-services-to-Aboriginal-and-Torres-Strait-Islander-people-2014.pdf.

After the guideline launch I conducted a PSA online educational webinar on Providing Pharmacy Services to Aboriginal and Torres Strait Islander People. The webinar was attended by approximately 140 pharmacists.
2014–2015: North Coast Cultural Competency Workshops

In 2014-2015, in conjunction with an Aboriginal colleague from the North Coast Medicare Local/Primary Health Network, I conducted a series of workshops for pharmacists and pharmacy staff on Better Provision of Pharmacy Services to Aboriginal and Torres Strait Islander People. Workshops were conducted in Ballina, Lismore, Grafton, Coffs Harbour and Kempsey. A total of 61 pharmacists and 40 pharmacy staff attended.

2014–2016: Pharmacy student education

Together with an Aboriginal colleague, I annually deliver lectures and workshops to pharmacy students (n=70 each year) at the University of Technology Sydney (UTS) on Provision of Medicines to Aboriginal and Torres Strait Islander People. In 2016 for the first time I was invited to provide workshops at UTS on Medication Reviews for Aboriginal and Torres Strait Islander People.

I organise cultural awareness training provided by local Bundjalung people for all pharmacy and allied health students attending clinical placements facilitated by the University Centre for Rural Health in the NSW Northern Rivers region.

2011–2016: Government submissions

From 2011 to early 2016 I was employed part-time as the Director, Rural and Indigenous Policy, for the Pharmaceutical Society of Australia. During my time in this role I wrote submissions to:

- The Senate Community Affairs References Committee Inquiry into the effectiveness of Section 100 supply of PBS medicines to the remote area Aboriginal Health
Services program. This submission advocated for the Commonwealth to fund clinical pharmacists in remote Aboriginal Health Services.


2016: Pharmacy Competency Standards

In 2016 I assisted Indigenous Allied Health Australia (IAHA) with their submission to the consultation on National Competency Standards Framework for Pharmacists. The IAHA submission suggested that cultural competency needed to be imbedded in all pharmacy training and practices. The original standards had no mention of Aboriginal and Torres Strait Islander people. I believe the new standards, soon to be released, have specifically incorporated attention to the special needs of Aboriginal and Torres Strait Islander people and the need for culturally competent pharmacists.

2010–current: Pharmacists in Aboriginal Health Services on NSW North Coast

In 2009 I assisted Dharah Gibinj AHS, Casino to recruit a pharmacist to conduct HMR monthly. This service, with the same pharmacist, still runs in 2016.

In 2010 I assisted Galambila AHS, Coffs Harbour to recruit a pharmacist to conduct HMR weekly. Galambila found the services of the pharmacist so useful that they now employ her as a full-time staff member. She runs diabetes and respiratory clinics, and medication education days, and conducts medication reviews.
From 2014-2015 I established a clinical pharmacist role at Bullinah Aboriginal Medical Service for one day per week. I provided medication education to elders’ groups, medication review, GP advice and facilitation of shared medical appointments. In 2015 I trained another pharmacist to take over this role from me, and she is still providing these services to Aboriginal clients in Ballina.

**2016–2020: Medicines Management Review Trial for Aboriginal and Torres Strait Islander people**

In March 2016 Health Minister Ley announced that an Aboriginal medication management program would be a priority of the 6CPA Pharmacy Trials Program (PTP). I have been asked to join the successful team and be a researcher and consultant for this project. This project will evaluate medication review models for Aboriginal and Torres Strait Islander people in Queensland and is a direct translation of my PhD research into a trials phase. I am also a member of a team which is applying in the Second Tranche of the PTP for a program piloting Pharmacists in Aboriginal Health Services.
Appendices

Appendix A

Author statements
Publication 1

Reference:

Swain L, Barclay L. “They’ve given me that many tablets, I’m bushed. I don’t know where I’m going.” Australian Journal of Rural Health (2013) 21, 216-219

Lindy Swain (Candidate)

I conceived and designed the study, carried out the literature review, collected all data, analysed and interpreted that data, drafted, wrote and critically revised this manuscript.

Signed:  
Date: November 18th 2016

Professor Lesley Barclay

My contribution to this paper involved providing qualitative research expertise, advising on data analysis and editing drafts of the manuscript. I give my consent for Lindy Swain to present this paper for examination towards Doctor of Philosophy.

Signed:  
Date: November 18th 2016
Publication 2

Reference:

Swain L, Barclay L. An Exploration of Aboriginal and Torres Strait Islander Perspectives of Home Medicines Review. Rural and Remote Health. 2015;15:3009

Lindy Swain (Candidate)

I conceived and designed the study, carried out the literature review, collected all data, analysed and interpreted that data, drafted, wrote and critically revised this manuscript.

Signed:  

Date: November 18th 2016

Professor Lesley Barclay

My contribution to this paper involved providing qualitative research expertise, advising on data analysis and editing drafts of the manuscript. I give my consent for Lindy Swain to present this paper for examination towards Doctor of Philosophy.

Signed:  

Date: November 18th 2016
Reference:

Swain L, Barclay L. “Medication reviews are useful, but the model needs to be changed”: Perspectives of Aboriginal Health Service health professionals on Home Medicines Review. BMC Health Services Research. 2015;15:366

Lindy Swain (Candidate)

I conceived and designed the study, carried out the literature review, collected all data, analysed and interpreted that data, drafted, wrote and critically revised this manuscript.

Professor Lesley Barclay

My contribution to this paper involved providing qualitative research expertise, advising on data analysis and editing drafts of the manuscript. I give my consent for Lindy Swain to present this paper for examination towards Doctor of Philosophy.
Publication 4

Reference:


Lindy Swain (Candidate)

Conceived and designed the study, carried out the literature review, conceptualised and directed survey design and analysis, interpreted that data, drafted, wrote and critically revised this manuscript.

Signed: [signature] Date: November 18th 2016

Professor Lesley Barclay

Provided qualitative research expertise, advising on data analysis and editing drafts of the manuscript. I give my consent for Lindy Swain to present this paper for examination towards Doctor of Philosophy.

Signed: [signature] Date: November 18th 2016
Dr Lisa Pont

Supervised a pharmacy student, Claire Griffits who assisted in survey design, collecting data and data analysis. I give my consent for Lindy Swain to present this paper for examination towards Doctor of Philosophy.

Signed: [Signature]
Date: November 18th 2016

Claire Griffits

As part of my Honours project I assisted with survey design, data collection and analysis for this phase of this thesis. I give my consent for Lindy Swain to present this paper for examination towards Doctor of Philosophy.

Signed: [Signature] (Dr Lisa Pont on behalf of Claire Griffits)
Date: November 18th 2016
Appendix B

Aboriginal Health Service Letters of Consent
to Participate in Research
13th January 2010

Lindy Swain
Pharmacist Academic
Northern Rivers University Dept of Rural Health
PO Box 3074, Lismore, 2480

RE: Strategies to Increase Uptake of Home Medicines Review for Aboriginal and Torres Strait Islander people*

Dear Lindy,

As discussed Ceduna Koonibba Aboriginal Health Service would be pleased to participate in your study into strategies to increase uptake of Home Medicine reviews for Aboriginal People.

Tracey Gurney, Registered Nurse and Ashley Milera, Aboriginal Health Worker will be the initial contact points should you have any queries.

We look forward to your upcoming visit in February 2010. Please do not hesitate to contact Tracey, Ashley or myself if you have any Queries.

Yours sincerely

Andrew Lane
A/Director
Lindy Swain
Northern Rivers University Dept of Rural Health
PO 3074
Lismore, 2480

Monday 10th August 2009

Re. Research project: Increasing Home Medicine Reviews in Aboriginal and Torres Strait Islander Communities

Dear Lindy,

Thank you for inviting us to participate in your research project. Here at Danila Dilba, Darwin, we are concerned with the low levels of understanding many patients may have about their medications. We welcome any project that may result in greater understanding of treatments and better medication management.

Danila Dilba would like to participate, as long as ethics approval is obtained from Human Research Ethics Committee of the Menzies School of Health Research.

Kind Regards,

Kane Ellis
Practice Manager
14th December 2009

Lindy Swain  
NRUDRH  
PO Box 3074  
LISMORE NSW 2480

Dear Lindy

RE: Strategies to Increase Home Medicines Review in Aboriginal and Torres Strait Islander Communities

It is with pleasure that I endorse the above project and support your endeavours.

I look forward to a visit early in 2010 to have Pika Wiya Health Service participate in this project.

Should further correspondence be required please contact Amanda Sanburg as you have been.

Yours sincerely

Charles Jackson  
Director

cc. Alwin Chong  
Senior Research & Ethics Officer  
Aboriginal Health Council SA Inc  
PO Box 981  
UNLEY SA 5061

Administration  
Phone: 08 8642 9904  
Fax: 08 8642 6621

Community Health Centre  
Phone: 08 8642 9999  
Fax: 08 8642 4456

40-46 Dartmouth Street  
PORT AUGUSTA

Davenport Health Centre  
Phone: 08 8642 2556  
Fax: 08 8641 0258

Simmons Street  
DAVENPORT

271
7 August 2009

Lindy Swain
Northern Rivers University Dept of Rural Health
PO 3074
Lismore, 2480

Dear Lindy

Re: Increasing Home Medicine Reviews in Aboriginal and Torres Strait Islander Communities Research Project

Thank you for the invitation for Wurlu Wurlinjang Health Service to participate in your research project. Wurlu Wurlinjang Health Service supports the research objective to further understanding of treatments and better medication management by our clients.

Wurlu Wurlinjang Health Service would like to participate in this research project, on the provision that the appropriate ethics approval is obtained from Human Research Ethics Committee of the Menzies School of Health Research.

Yours sincerely,

Leigh Trevillian
Director of Medical Services
Lindy Swain  
Project Manager  
Department of Rural Health  
Northern Rivers University  
LISMORE NSW 2480

Dear Ms Swain,

Re: Home Medication Review Program in Aboriginal and Torres Strait Islander Communities.

Thank you for your email of the 29th September 2008 regarding the above project and the possible involvement of this organisation in the project.

I am writing to firstly inform you that the Board of Directors have in place a policy covering participation by our organisation in any research project. Basically the policy requires that the organisation should only participate in research initiative that seek and have been granted ethical approval from the AH&MRC's Ethics Committee.

The other purpose for my letter is to officially notify you that your letter was tabled for consideration at our BOD meeting on the 7th October 2008, and upon reviewing the documentation that was provided to the BOD the Board is fully supportive of this research project and Board now requires that a submission be made to the AH&MRC's Ethics Committee for ethical approval. And subject to the approval of Ethics Committee the Board is willing for this organisation to participate in the project.

Should any further information or advice be required please do not hesitate contacting the CEO Mr. Frank Vincent on the telephone number below during office hours

Yours truly,

Brad Deleaney  
Chairman

16 October 2008
Lindy Swain
Northern Rivers University Dept of Rural Health
PO 3074
Lismore, 2480

January 19, 2010

Re. Research project: Increasing Home Medicine Reviews in Aboriginal and Torres Strait Islander Communities

Dear Lindy,

Thank you for inviting us to participate in your research project regarding Home Medicines Review and Aboriginal people. Galambila Aboriginal Health Service, Coffs Harbour, welcomes any project that may result in greater understanding of medications.

The management and board of Galambila have discussed this project and have agreed that we would like to participate, as long as ethics approval is obtained from the Aboriginal Health and Medical Research Council ethics committee.

Yours sincerely

David Kennedy
CEO
Galambila AHS Inc
Friday, 10 October 2008

To Whom It May Concern

The Dharah Gibinj Aboriginal Medical Service Board of Directors met today and discussed a proposal by Lindy Swain to conduct a research project around Home Medication Reviews. The directors were very interested in the project and were convinced that the project had the potential to give the AMS a means of addressing a serious problem within the population serviced. Further more the Directors were convinced that the research would be carried out in a culturally appropriate manner. Lindy Swain has worked with and assisted our service on numerous occasions and has always enjoyed the support and trust of our staff and clients. The Board has no hesitation in stating their support for the project and for the proposed method of collecting information and community involvement.

Yours Sincerely

Jeff Richardson

CEO Dharah Gibinj
Appendix C

Pharmacist Survey Questions

• Research Phase 3
## Pharmacist Survey

1. **What is the postcode of your place of work?**

   

2. **Please indicate your age group**
   - 20-30 years
   - 31-40 years
   - 41-50 years
   - 51-60 years
   - >60 years

3. **Please explain your work situation**
   - I am a community pharmacy owner
   - I am an employee pharmacist in charge
   - I am an employee pharmacist
   - I am a hospital pharmacist
   - I am a consultant pharmacist
   - Other (please specify)

4. **What would you classify the area in which you do most of your work as?**
   - Remote
   - Rural
   - Regional
   - Urban
Pharmacist Survey

5. What services does the pharmacy in which you work offer?
   - DAA packing
   - BPI/BG testing
   - Clinical Interventions
   - Medschecks
   - HMRs
   - RMMRs
   Other (please specify)

6. Approximately what percentage of your customers/patients do you think are Aboriginal or Torres Strait Islander?
   - <1%
   - 2-5%
   - 6-10%
   - >10%

7. Approximately how far is the pharmacy/service located from the nearest Aboriginal Health Service or Aboriginal clinic?
   - <10 kms
   - 10-20 kms
   - >20 kms
   - Don't know
# Pharmacist Survey

8. Please indicate which of the following the pharmacy delivers:
- [ ] Section 100 Remote Aboriginal Health Service (RAHS) supply
- [ ] Section 100 RAHS support
- [ ] Provision of DAA to Aboriginal patients though QUMAX funding
- [ ] Provision of QUM support services to Aboriginal Health Services through QUMAX funding
- [ ] Other QUM services for AHSs (please explain in comment box below)
- [ ] None of the above

**Other (please specify)**

---

9. How often in the last 12 months have you contacted an Aboriginal health Service?
- [ ] Never
- [ ] Once or twice
- [ ] Monthly
- [ ] Weekly
- [ ] More than once a week

10. How often in the last 12 months has an Aboriginal Health Service contacted the pharmacy?
- [ ] Never
- [ ] Once or twice
- [ ] Monthly
- [ ] Weekly
- [ ] More than once a week
11. How often do you visit the Aboriginal Medical Service?
- Never
- Once or twice annually
- Monthly
- Weekly
- More than once a week
- Other (please specify)

12. Which member of staff at the AHS do you normally deal with?
- GP
- Nurse
- Aboriginal Health Worker
- Admin Staff
- Other (please specify)

13. What was the purpose of the contact?
- Medication supply - order, stock control etc.
- Dispensing/prescribing query
- DAA query
- HMR
- Medication advice
- QMIM activity e.g. staff education
- Other (please specify)

14. Would you like to have more contact with your Aboriginal Health Service?
- Yes
- No
Pharmacist Survey

15. What services would you like to be able to deliver to an Aboriginal Health Service?

- [ ] Medication supply
- [ ] Education
- [ ] HMR
- [ ] DAA
- [ ] Other QUM activities
- [ ] None

Other QUM activities?

16. Approximately what percentage of your Non-Indigenous patients do you counsel about their medications?

- [ ] <10%
- [ ] 11-50%
- [ ] 51-85%
- [ ] >85%

17. Approximately what percentage of Aboriginal patients do you counsel about medications?

- [ ] <10%
- [ ] 11-50%
- [ ] 51-85%
- [ ] >85%
### Pharmacist Survey

18. Which of the following would you include in a standard medicine counselling of Non-Indigenous patients?

- [ ] Dosage instructions
- [ ] Medicines indication
- [ ] Mechanism of action
- [ ] Potential side effects
- [ ] Potential drug/food interactions
- [ ] Lifestyle information

Other (please specify):

---

19. Which of the following would you include in a standard medicine counselling of Aboriginal patients?

- [ ] Dosage instructions
- [ ] Medicines indication
- [ ] Mechanism of action
- [ ] Potential side effects
- [ ] Potential drug/food interactions
- [ ] Lifestyle information

Other (please specify):

---

20. Do the following factors influence you to counsel Aboriginal patients more or less about their medicines.

- Poor health
- Low medication adherence
- Lack of understanding about medicines/health
- Poor communication skills
- Low literacy
- Ethnicity

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<td>Poor health</td>
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<td>Low medication</td>
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<td>adherence</td>
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<td>Lack of understanding</td>
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<td>about medicines/health</td>
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<td>Poor communication skills</td>
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<td>Low literacy</td>
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<tr>
<td>Ethnicity</td>
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21. Please rate on a scale of 1-5 the extent that the following may prevent service delivery to a local AHS?

<table>
<thead>
<tr>
<th>Barriers</th>
<th>1 Never</th>
<th>2</th>
<th>3 Sometimes</th>
<th>4</th>
<th>5 Always</th>
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<tr>
<td>Geographic distance</td>
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<td>Relationship with AHS staff</td>
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<td>Number of pharmacy staff/Pharmacists</td>
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<td>Financial viability</td>
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<td>Interaction with Aboriginal patients</td>
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</table>

Other barriers

22. Have you or your employers/employees had the opportunity for any professional development in relation to Aboriginal patients?

- Yes
- No

If yes, please describe. If no, please indicate what type of training/professional development you believe would be helpful

23. Are you a HMR accredited pharmacist?

- Yes - please complete questions 24-35
- No - The END. Thank you for your participation in this survey. Please go to question 36 to complete details for iPad competition
Pharmacist Survey

24. How many HMRs do you do per month on average
   □ 0
   □ 1-4
   □ 5-10
   □ >10

25. What are the barriers to conducting HMRs in your area?
   □ Lack of accredited pharmacists
   □ Lack of GP referrals
   □ Time
   □ Financial Viability
   □ Other (please specify)

26. How many HMRs have you done for Aboriginal patients in the last 3 years?
   □ 0 - please go to Q34
   □ 1-4
   □ 5-10
   □ 10-20
   □ >20

27. Who mostly organised the HMR referrals for Aboriginal patients?
   □ GP
   □ Pharmacist
   □ Aboriginal Health Worker
   □ Aboriginal Health Service staff
   □ Other (please specify)

28. Who mostly organised the HMR interviews with the Aboriginal patients?
   □ GP
   □ Pharmacist
   □ Aboriginal Health Worker
   □ Aboriginal Health Service staff
   □ Other (please specify)
29. Where did you mostly conduct the HMR interviews with Aboriginal patients?

- Home
- AHS
- clinic
- All above

Other (please specify)

30. Were the HMR interviews mostly?

- By appointment
- Opportunistic
- Both by appointment and opportunistic

Other (please specify)

31. What roles did Aboriginal Health Workers play in the HMR process?

- Organisers
- Liaison between pharmacist and patient
- Interpreters
- Follow up
- None

32. How would it impact the HMR process if nurses and/or Aboriginal Health Workers could write the HMR referral?
### Pharmacist Survey

**33. Please indicate on a scale of 1-5 your ability to undertake the following when conducting HMRs with Aboriginal patient**

<table>
<thead>
<tr>
<th>Activity</th>
<th>1 Always easy</th>
<th>2 Slightly easy</th>
<th>3 Neutral</th>
<th>4 Slightly difficult</th>
<th>5 Always difficult</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organising an HMR referral</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organising the HMR interview</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liaising with AHWAHS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visiting the patient’s home</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effectively communicating with patient</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Explaining the process to patient</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Understanding cultural issues</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liaising with patient’s doctor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Providing feedback to patient</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**34. What do you perceive as barriers to conducting HMRs for Aboriginal patients?**

<table>
<thead>
<tr>
<th>Barrier</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited pharmacist-patient relationship</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cultural difference</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender difference</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of awareness of HMRs by GPs/AHSs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difficulties in organising appointments</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient not wanting a stranger in their home</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Lack of patient interest</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Pharmacist not comfortable/secure</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
Pharmacist Survey

35. What do you perceive are the likely outcomes of a Home Medicines Review (HMR) for an Aboriginal patient?

<table>
<thead>
<tr>
<th>Increased understanding of health</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased understanding of how to take medicines</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increased understanding of potential side effects</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improved medication adherence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improved patient-pharmacist relationship</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most likely to ask questions about medicines</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

36. If you would like to make further comments regarding the delivery of medication counselling, HMRs or other pharmacy services for Aboriginal and Torres Strait Islander peoples, please do so below

37. Many thanks for completing this survey. Your assistance is greatly appreciated.
We hope the feedback from this research will be used to inform future professional services for Aboriginal and Torres Strait Islander people.
If you have any queries please contact Lindy Swain on 02 6620 7389 or at lindy.swain@uclh.edu.au

Name: 
Company: 
Address: 
Address 2: 
City/Town: 
State: 
ZIP: 
Country: 
Email Address: 
Phone Number:
Appendix D

Information sheets and consent form templates

- Patients
- Aboriginal Medical Service staff
Patient Information Sheet for HMR-Users

Strategies to Increase Home Medicines Reviews in Aboriginal and Torres Strait Islander Communities

(1) What is the study about?

The purpose of this research is to obtain information regarding patients' awareness, perception, and satisfaction regarding the services where a pharmacist does a home medicines review.

(2) Who is carrying out the study?

The study is being conducted by Professor Lesley White, of the Faculty of Pharmacy. The University of Sydney and Lindy Swain, Pharmacist, Northern Rivers University Department of Rural Health. The research project will be the basis Lindy Swain's Masters Study.

(3) What does the study involve?

Participants in this study will be asked to participate in a focus group of six to twelve people at a mutually convenient and suitable location. The focus group will be audiotaped if all participants agree. The researcher will ask the participants to talk about how they found their Home Medicines review. Participants will not have to share personal information about their health or medications.

(4) How much time will the study take?

The focus group is expected to take approximately 60 minutes.

(5) Can I withdraw from the study?

Being in this study is completely voluntary and you are not under any obligation to consent to being part of the focus group. You can withdraw any time prior to or during the focus group without penalty. Once you have participated, your responses cannot be withdrawn.

(6) Will anyone else know the results?

All aspects of the study, including results, will be strictly confidential and only the researchers will have access to information on participants. Your doctor and pharmacist are not part of the research team. They will have access to the results, but not to patient responses. A report of the study may be submitted for publication and presented at conferences, but individual participants will not be identifiable in such a report.

(7) Will the study benefit me?

Quite possibly, you will learn about some of the services that pharmacists can provide. In addition you will be paid $50 to cover travel expenses and attendance.
(8) Can I tell other people about the study?

Yes.

(9) What if I require further information?

If you would like to know more at any stage, please feel free to contact Lindy Swain at the Northern Rivers University Department of Rural Health on 02 6620 7389.

(10) What if I have a complaint or concerns?

Any person with concerns or complaints about the conduct of a research study can contact the Senior Ethics Officer, Ethics Administration, The University of Sydney on (02) 9351 4811 (Telephone); (02) 9351 8706 (Facsimile) or rpliody@usuexd.edu.au

And

Ethics Officer, Aboriginal Health & Medical Research Council, on (02) 9212 4777 (Telephone): (02) 9212 7211 (Facsimile) or KHaywood@ahmrc.org.au (Email)
PATIENT CONSENT FORM A (HMR-Users)

I, .................................................., give consent to my participation in the research project. Patient Name (please print)

Strategies to Increase Home Medication Reviews in Aboriginal and Torres Strait Islander Communities

In giving my consent I acknowledge that:

1. The procedures required for the project have been explained to me, and my questions have been answered.
2. I have read the “Patient Information Sheet for HMR-Users” and have been given the opportunity to discuss the information with the researcher.
3. I understand that I can withdraw from the study at any time without penalty, without affecting my relationship with the researcher/AMS now or in the future.
4. I understand that my involvement is strictly confidential and that my voice will be recorded on audio tape and stored privately and de-identified.
5. I understand that no information about me will be used in any way that reveals my identity.

Signed: .......................................................... Date: ..........................................................

Name of Patient: ............................................................................................................................

I have had an HMR conducted in ...........................................................

Approx. Month & Year

If you would like to know more at any stage, please feel free to contact Lindy Swain at the Northern Rivers University Department of Rural Health on 02 6620 7389.

Any person with concerns or complaints about the conduct of a research study can contact the Senior Ethics Officer, Ethics Administration, The University of Sydney on (02) 9351 4811 (Telephone); (02) 9351 6706 (Facsimile) or sbriody@usyd.edu.au

AND

Ethics Officer, Aboriginal Health & Medical Research Council, on (02) 9212 4777 (Telephone): (02) 9212 7211 (Facsimile) or KHaywood@ahmrc.org.au (Email)
Patient Information Sheet for Non HMR-Users

Strategies to Increase Home Medicines Reviews in Aboriginal and Torres Strait Islander Communities

(1) What is the study about?

The purpose of this research is to obtain information regarding patients’ awareness, and perceptions of medication services offered by a pharmacist, such as home medicines review (HMR). The current HMR model will be explained and patients will be asked what they like & dislike about this model.

(2) Who is carrying out the study?

The study is being conducted by Professor Lesley White, of the Faculty of Pharmacy, The University of Sydney and Lindy Swain, Pharmacist, Northern Rivers University Department of Rural Health. The research project will be the basis Lindy Swain’s Masters Study.

(3) What does the study involve?

Participants in this study will be asked to participate in a focus group of six to twelve people at a mutually convenient and suitable location. Focus groups will be audiotaped, if all participants agree. The Home Medicines review process will be explained. The researcher will ask the participants what they think about Home Medicines reviews. Participants will not have to share personal information about their health or medications.

(4) How much time will the study take?

The focus group is expected to take approximately 60 minutes.

(5) Can I withdraw from the study?

Being in this study is completely voluntary and you are not under any obligation to consent to being part of the focus group. You can withdraw any time prior to or during the focus group without penalty. Once you have participated, your responses cannot be withdrawn.

(6) Will anyone else know the results?

All aspects of the study, including results, will be strictly confidential and only the researchers will have access to information on participants. Your doctor and pharmacist are not part of the research team. They will have access to the results, but not patient responses. A report of the study may be submitted for publication and presented at conferences, but individual participants will not be identifiable in such a report.
Strategies to Increase Home Medicines Reviews in Aboriginal and Torres Strait Islander Communities

(7) Will the study benefit me?

Quite possibly, you will learn about some of the services that pharmacists can provide. In addition, you will be paid $50 to cover travel expenses and attendance.

(8) Can I tell other people about the study?

Yes.

(9) What if I require further information?

If you would like to know more at any stage, please feel free to contact Lindy Swain at the Northern Rivers University Department of Rural Health on 02 6620 7389.

(10) What if I have a complaint or concerns?

Any person with concerns or complaints about the conduct of a research study can contact the Senior Ethics Officer, Ethics Administration, The University of Sydney on (02) 9351 4811 (Telephone); (02) 9351 6706 (Facsimile) or gbriody@usyd.edu.au

And

Ethics Officer, Aboriginal Health & Medical Research Council, on (02) 9212 4777 (Telephone); (02) 9212 7211 (Facsimile) or KHaywood@ahmrc.org.au (Email)
PATIENT CONSENT FORM B (Non-Users)

I, ____________________________________________, give consent to my participation in the research project: ____________________________ (please print)

Strategies to Increase Home Medicines Reviews in Aboriginal and Torres Strait Islander Communities

In giving my consent I acknowledge that:

1. The procedures required for the project have been explained to me, and my questions have been answered.
2. I have read the "Patient Information Sheet for Non-Users" and have been given the opportunity to discuss the information with the researcher.
3. I understand that I can withdraw from the study at any time without penalty, without affecting my relationship with the researcher/AMS now or in the future.
4. I understand that my involvement is strictly confidential and that my voice will be recorded on audio tape and stored privately and de-identified.
5. I understand that no information about me will be used in any way that reveals my identity.

Signed: ____________________________________________ Date: ____________________________

Name of Patient: ____________________________________________

If you would like to know more at any stage, please feel free to contact Lindy Swain at the Northern Rivers University Department of Rural Health on 02 6620 7389.

Any person with concerns or complaints about the conduct of a research study can contact the Senior Ethics Officer, Ethics Administration, The University of Sydney on (02) 9351 4811 (Telephone); (02) 9351 6706 (Facsimile) or gbriody@usyd.edu.au

And

Ethics Officer, Aboriginal Health & Medical Research Council, on (02) 9212 4777 (Telephone); (02) 9212 7211 (Facsimile) or KHaywood@ahmrc.org.au (Email)
Aboriginal Medical Service Staff  INFORMATION STATEMENT

Strategies to Increase Home Medicines Reviews in Aboriginal and Torres Strait Islander Communities

(1) What is the study about?

The purpose of this research project is to recommend strategies to increase the uptake of Home Medicines Reviews (HMRs) in the Australian Indigenous populations. The barriers and enablers to HMR service delivery will be analysed from the perspective of the patients, Aboriginal Health Workers, Aboriginal Medical Service (AMS) practice staff, GPs and pharmacists.

Home Medicines Reviews have been found to improve patient health. In a Home Medication Review an accredited pharmacist visits a patient and talks to them about their medicines. The pharmacist will send a medication report to the doctor and may/may not suggest medication changes.

(2) Who is carrying out the study?

The study is being conducted by Professor Lesley White, Faculty of Pharmacy, The University of Sydney and Lindy Swain, Pharmacist, Northern Rivers University Department of Rural Health. The research project will be the basis of Lindy Swain’s Masters study.

(3) What does the study involve?

We ask you to assist us by answering some questions in a semi-structured interview. The researcher will ask you questions about:
- how you think the HMR process works
- how the HMR process could work better
- why Aboriginal and Torres Strait Islander people may/may not like to have an HMR
- what you think are the benefits/disadvantages of having an HMR

If you would like to participate in this study and be interviewed by the researcher please sign the Aboriginal Medical Service Consent Form C and return to the researcher in the stamped enveloped provided.

The interview will be audiotaped if the participant agrees.

(4) How much time will the interview take?

The interview is expected to take approximately 30 minutes of your time.

(5) Can I withdraw from the study?

You can withdraw at any time without penalty.
Aboriginal Medical Service Staff CONSENT FORM C

I, ......................................................................................................................, give consent to my participation in the research project. Name (please print)

Strategies to Increase Home Medicines Reviews in Aboriginal and Torres Strait Islander Communities

In giving my consent I acknowledge that:

1. The procedures required for the project have been explained to me, and my questions have been answered.
2. I have read the ‘AMS Staff Information Statement’ and have been given the opportunity to discuss the information with the researcher.
3. I understand that I can withdraw from the study at any time without penalty, without affecting my relationship with the researcher/AMS now or in the future.
4. I understand that my involvement is strictly confidential and that my voice will be recorded on audio tape and stored privately and de-identified.
5. I understand that no information about me will be used in any way that reveals my identity.

Signed: ........................................................................................................... Date: ..........................

Name of AMS Staff member: ..................................................................................

AMS Location: .................................................................................................

If you would like to know more at any stage, please feel free to contact Lindy Swain at the Northern Rivers University Department of Rural Health on 02 6620 7389.
Appendix E

Publications

**Publication 1: Australian Journal of Rural Health**

“They’ve given me that many tablets, I’m bushed. I don’t know where I’m going.”

**Publication 2: Rural and Remote Health**

An exploration of Aboriginal and Torres Strait Islander Perspectives of Home Medicines Review.

**Publication 3: BMC Health Services Research**

“Medication reviews are useful, but the model needs to be changed”: Perspectives of Aboriginal health service professionals on Home Medicines Review.

**Publication 4: International Journal of Clinical Pharmacy**

Attitudes of pharmacists to the provision of Home Medicines Review for Indigenous Australians.
Original Research

They’ve given me that many tablets, I’m bushed. I don’t know where I’m going

Aboriginal and Torres Strait Islander peoples’ experiences with medicines

Lindy Swain, BPharm and Lesley Barclay, AO RN RM BA Med PhD

University Centre for Rural Health, Lismore, New South Wales, Australia

Abstract

Objective: To explore Aboriginal and Torres Strait Islander patients’ experiences with medicines and the barriers and facilitators to their effective use of medicines.

Design: A descriptive, qualitative study, using 18 semi-structured focus groups with 101 Aboriginal and Torres Strait participants. Groups were conducted at 11 Aboriginal health services. These were recorded, transcribed and a thematic analysis was performed.

Settings and participants: Participants were Aboriginal and Torres Strait Islander patients, taking multiple medicines, who attended Aboriginal health services (AHSs) and who spoke English. AHSs varied in governance, size and service delivery models as well as their locations which were across urban, regional, rural and remote settings.

Results: Major themes identified were consistent across all settings and patients. These were confusion over medicines, perceived lack of advice from health professionals to patients about medicines and challenges in having effective interactions with medical practitioners and pharmacists. Participants wanted more information about medicine, indications for medicine, how they should be used, potential side effects, drug interactions and duration of therapy. They also reported an absence of appropriate medication labelling and written information.

Conclusion: Many Aboriginal and Torres Strait Islander patients take multiple medicines and often find managing their medicines difficult and worrying. These patients require more comprehensive information, verbal and written, and more effective communication from doctors and pharmacists about medication indications, mechanisms, side effects, drug interactions and duration of treatment. Pharmacists have an opportunity to play a greater role in improving understanding of medicines and treatment choices.

KEY WORDS: aboriginal health, communication, pharmacist intervention, pharmacy, quality use of medicine.

Introduction

Despite a higher burden of acute infections and chronic diseases, underuse of medicines is evident in Australian Aboriginal populations. Poor control of chronic disease states and subsequent higher hospital admissions, morbidity and mortality might be directly attributable to poor medicine management in Indigenous communities.

Very little research has been conducted into Aboriginal and Torres Strait Islander patients’ perceptions, experience and understanding of medicines. Similarly, little is known about the role of pharmacists in Aboriginal health. Published research confirms this proposition and has been used to situate this research.

Poor adherence to prescribed medicines is well documented and associated with adverse health outcomes in all population groups. Social circumstances, deficiencies in health services and systems mean Indigenous Australians often suffer even greater challenges in medicine management than non-Indigenous Australians. Barriers to accessing medicines include financial and geographic constraints, failed patient–clinician interactions, poor health care delivery systems and complex therapeutic regimens. Social and emotional well-being issues deeply pervade the lives of many Aboriginal people and might diminish the value that individuals place upon medicines and the potential of these medicines to improve their quality of life.

Correspondence: Ms Lindy Swain, University Centre for Rural Health, North Coast, PO Box 3074, Lismore, New South Wales, 2480, Australia. Email: lindy.swain@ucrh.edu.au

Lindy Swain (95%) and Lesley Barclay (5%).

Accepted for publication 28 February 2013.
EXPERIENCE WITH MEDICINES

What is already known on this subject:
- While numerous studies report the social, economic, emotional and physical determinants of Aboriginal and Torres Strait Islander health, and some studies have evaluated medication access schemes, very little research has been conducted into Aboriginal and Torres Strait Islanders' perceptions, experience and understanding of medicines.

What this study adds:
- The study outlines Aboriginal and Torres Strait Islander peoples’ views on medication use.
- These findings should be used to inform health professionals as to how they can better assist these patients to manage their medications and treatment choices.

With the introduction by the Commonwealth Government of the Aboriginal Health Service Remote Access scheme (known as Section 100) in 1999, and Close the Gap in 2010, some of the financial barriers preventing access to medicines for a number of Aboriginal people have been removed. There have been some evaluation studies relating to medication access and supply. Cognitive pharmacy services and medication education, encouraging safe and efficacious use of medicines for Aboriginal and Torres Strait Islander people, now need to be addressed.7

Method
Aboriginal health services (AHSs) were selected to include urban, regional, rural and remote settings. They included Aboriginal Community Controlled Health Services and government funded AHSs. Each AHS was given verbal, then written information about the project. The AHSs' management and boards were asked to approve the research participation before approval was sought and granted from the University of Sydney Human Research Ethics Committee, the Aboriginal Health and Medical Research Council (NSW), the Menzies School of Health Research and the Aboriginal Health Research & Ethics Committee (SA).

Patients who were multiple medication users and had a reasonable understanding of the English language were recruited to the study by AHS staff, independently of the researcher. Patient consent was sought by staff and repeated by the researcher.

Focus group methodology was chosen as this allows a semi-structured "yarning" process across the group. This gathers information through conversation. Yarning is compatible with Indigenous cultural process and enables the telling of stories.89 The focus groups provided a forum for the sharing of information about medications as well as the opportunity to collect information about patient perceptions and experiences. Focus groups were conducted by the first author, a pharmacist. She established a reciprocal relationship93 with participants sharing information and assisting participants with their specific medication queries at the end of each session.

Focus groups questions were designed to be non-leading and to encourage open discussion. They were modified slightly as a result of early groups, to achieve increased engagement and to explore concepts more in depth. Field notes and summaries were recorded after each session and incorporated into the analysis. Areas of interest were explored in subsequent groups, until data saturation occurred. Internal validity and reliability was achieved by questions about the same issues being asked numerous times, in an appropriate, non-leading way, producing similar findings in different settings. Core questions are found in Table 1.

Focus groups were recorded, de-identified and transcribed verbatim. Transcripts were coded and analysed for themes.

The study incorporated standards of integrity, beneficence and respect. The need for community consultation, community benefit and cultural sensitivity were

---

TABLE 1: Core questions asked about medicines

<table>
<thead>
<tr>
<th>Number</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>How do you feel about taking medicines?</td>
</tr>
<tr>
<td>2.</td>
<td>Do you know what your medicines are for and how to take them?</td>
</tr>
<tr>
<td>3.</td>
<td>Would you like any further information about your medicines?</td>
</tr>
<tr>
<td>4.</td>
<td>If you need to know more about your medicines, who do you ask, and why?</td>
</tr>
<tr>
<td>5.</td>
<td>How do you manage your medicines?</td>
</tr>
<tr>
<td>6.</td>
<td>What challenges do you face around managing your medicines?</td>
</tr>
<tr>
<td>7.</td>
<td>Does the pharmacist or doctor give you any written information about your medicines?</td>
</tr>
<tr>
<td>8.</td>
<td>What role does the pharmacist play in helping you with your medicines?</td>
</tr>
<tr>
<td>9.</td>
<td>What would help you to manage your medicines?</td>
</tr>
<tr>
<td>10.</td>
<td>To participants that had had a Home Medicines Review only: How did you find the Home Medicines Review experience?</td>
</tr>
</tbody>
</table>

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Australian Journal of Rural Health © National Rural Health Alliance Inc.

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acknowledged with participating AHs receiving written and verbal reports about their own data. System information, not individual information, was shared to assist quality improvement.

Results

Eighteen semi-structured focus groups were conducted with 101 Aboriginal and Torres Strait patients at 11 AHs in Queensland, Northern Territory, South Australia, New South Wales and Victoria.

All participants wanted to know more about their specific medicines and about medicines generally. Most participants felt they received minimal or no information about their medicines. Many had very little understanding of why they took medicines and the purpose of these medicines. The statement ‘I don’t know why I take them’ was echoed by over 70% of participants. Some participants knew that they took medicines for their ‘heart’ or for their ‘diabetes’ and knew when they had to take these medicines, but no participants felt they had had potential side effects or drug interactions adequately explained.

Most of the focus group participants expressed a strong dislike for taking multiple medicines. Comments such as ‘I don’t like taking medicines’ and ‘I hate them, there are too many’ were common. One participant echoed the concerns of many in her statement ‘I get a bit concerned because I’m taking a lot of things. Is it necessary to take all these things?’

The taking of multiple medications simultaneously and the potential for drug interactions concerned participants. Many discussed spreading the doses of their tablets as they believed this might negate or minimise potential interactions.

‘I don’t know if my tablets all go together. Does one tablet knock out the benefit of another?’

Issues relating to duration of therapy, dosage and allergy were also discussed. There was some confusion over when and if medications could be ceased. ‘When I had my cholesterol checked it was good, so I was thinking if it was good, why should I be taking them?’

Many participants expressed interest in lifestyle measures that might reduce medication usage.

Most participants acknowledged that it was important to take their medications, and many endeavoured to take their medications regularly. Despite this, many said that on occasions they forgot. Many relied on Dose Administration Aids (Webster packs or Dosette boxes), or reminders from family members and carers, to assist them to manage complex medication regimens. ‘When I have to take them three times a day, that’s when I muck up because every other thing comes in the way.’

Managing multiple medicines when travelling away from home was problematic for most, especially when it meant negotiating across both Section 100 and Close the Gap medication schemes. ‘I get my tablets free at home but when I go to the city I have no prescription and then they want me to pay.’ There was also criticism of the rules and dispensing protocols at the pharmacy and the difficulty of seeing a doctor for a new prescription.

Many of the participants acknowledged that others in their communities also struggled to manage their medicines. Some community members elected not to take medicines, others tried to be adherent with their medications but found the barriers too great. Distrust and fear of Western medicine, family trauma, financial difficulties, lack of transport, distance to the pharmacy and lack of understanding about medicines were reasons given for lack of medication adherence.

‘Some people are not very interested in their medicines. They have too much worry.’

‘Some people are frightened of taking tablets, thinking if you take them, you die.’

The majority of the focus group participants said that they did not ask questions about their medicines because they either did not know what to ask, were too shy or found it ‘shameful to take so many tablets.’ Those that did ask questions usually did so of the doctor rather than the pharmacist, as most participants felt they had a better relationship with the doctor than with their pharmacist. Some remote participants had little or no access to a pharmacist. Some participants felt the pharmacist was too busy. A number of participants commented on the lack of privacy in many pharmacies, stating ‘it is embarrassing if everyone hears your business.’ The few participants who had had a Home Medicines Review found it an extremely useful and empowering experience ‘Time with a pharmacist empowers you to ask more questions.’

All the participants stated that they found generic brand substitution, the varied tablet appearances and different names very confusing. Some rural and urban participants were prepared to pay for the more expensive branded product but were rarely given the opportunity.

‘I’d rather pay for the one I know. Often I say I don’t want the cheaper brand but they give it to me anyway.’

All participants stated that they were rarely given written information about their medications. Often they tried to read package insert information but found the print too small, the information hard to understand and the lists of side effects worrying. Simplified, jargon free written resources were preferred. ‘It would be good to
have something to take home, that I can read and understand, without too many big, technical words, that I can show my family.’

All participants agreed that communications by doctors and pharmacists with Aboriginal and Torres Strait Islander people about medicines were often incomplete or ineffective. ‘He tells me the basics but I want to know more.’ Most felt that if they were given more information, improved medication adherence would result. ‘If I know more, I feel more confident and try harder to take my medicines.’

The majority of focus group participants in this study were proactive in the management of their medicines and were keen to have better understanding of their medicines.

Discussion

Aboriginal and Torres Strait Islander people are hugely diverse and they are not all represented in the study; therefore, it is difficult to extrapolate findings to all Aboriginal and Torres Strait Islander people. However, the sample size was larger and more representative than many studies with Aboriginal participants, and therefore this study has merit.

Consistent themes were identified across all settings. These themes were: the difficulty of managing multiple medicines; the need for more information, written and verbal, about medicines, to inform patient choices; disempowerment to ask doctors and pharmacists for information about medicines; lack of satisfaction of interactions with doctors and pharmacists about medicines; and the difficulty of negotiating the health system. The extent of the homogeneity of findings about medication issues was surprising across the varied settings and adds validity to findings.

Further studies should aim to capture a broader range of participants by using translators. Further investigation is needed to determine whether the findings from this study apply to non-represented groups.

Conclusion

Complex medicine regimens result in many Aboriginal and Torres Strait Islander patients finding medicines confusing and difficult to manage. More comprehensive information, verbal and written, about medicine indications, mechanisms of action, potential side effects, drug interactions and duration of therapy, is needed. Currently, communications by the doctor and the pharmacist with these patients about medicines is often incomplete or ineffective. More culturally appropriate, jargon free written resources about medicines are required. Greater understanding and empowerment about medicine choices seem to be likely to improve medication adherence.

Dispensing protocols, the lack of pharmacist interaction and the physical settings of community pharmacies have made it difficult for some Aboriginal and Torres Strait Islander patients to have productive relationships with pharmacists. Pharmacists through cognitive pharmacy services, such as Home Medicines Review, have an opportunity to build relationships, increase patients’ knowledge about their medicines and assist Aboriginal and Torres Strait Islander patients with medication understanding and treatment choices.

References


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ORIGINAl RESEARCH

Exploration of Aboriginal and Torres Strait Islander perspectives of Home Medicines Review

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A B S T R A C T

Introduction: In Australia, Home Medicines Review (HMR) has been found to be an important tool to raise awareness of medication safety, reduce adverse events and improve medication adherence. Aboriginal and Torres Strait Islander people are 'underserved' by the HMR program and are the most likely of all Australians to miss out on HMRs despite their high burden of chronic disease and high rates of hospitalisation due to medication misadventure. The goal of this study was to explore Aboriginal and Torres Strait Islander perspectives of Home Medicines Review program and their suggestions for an 'improved' or more readily accessible model of service.

Methods: Eighteen semi-structured focus groups were conducted with 102 Aboriginal and Torres Strait Islander patients at 11 Aboriginal Health Services (AHSs). Participants who were multiple medication users and understood English were recruited to the study by AHS staff. Seven focus groups were conducted for people who had already used the HMR program (User, n=23) and 11 focus groups were conducted for people who had not had an HMR (Non User, n=79). Focus groups were recorded, de-identified and transcribed. Transcripts were coded and analysed for themes. Focus groups continued and concepts were explored until no new findings were being generated and thus saturation of data occurred.

Results: Focus group participants who had and had not had an HMR had little or no awareness of the HMR program. All the participants felt that lack of awareness and promotion of the HMR program were contributing factors to the low uptake of the HMR program by Aboriginal and Torres Strait Islander people. Most participants felt that an HMR would assist them to better understand their medicines, would empower them to seek information about medicines, would improve relationships with health professionals and would increase the likelihood of medication adherence. Most of the User participants reported that the HMR interview had been very useful for learning more about their medicines. However, many reported that they found the process confusing and confronting. The majority of participants felt HMRs for Aboriginal and Torres Strait Islander patients should be organised by AHS

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staff, with patients being offered a choice of location for the HMR interview. Participants identified that Aboriginal Health Workers should play a key role in communication, knowledge translation, referral and follow-up.

Conclusions: Current HMR rules impede rather than facilitate HMIs for Aboriginal and Torres Strait Islander people. Tailoring and remodelling of the HMR program is needed to increase the awareness, accessibility, acceptability and effectiveness of the HMR program for Aboriginal and Torres Strait Islander people.

Key words: Aboriginal and Torres Strait Islander, culturally appropriate, medication adherence, medication review.

Introduction

The rate of potentially preventable hospitalisations for Aboriginal and Torres Strait Islander people in Australia is 4.9 times the rate for other Australians, with more than half (55%) of these hospitalisations being for chronic conditions. Under-use of medicines contributes to poorer control of chronic disease states and higher hospital admissions, morbidity and mortality for Aboriginal and Torres Strait Islander people.

The term 'Aboriginal' in this article is inclusive of all Australian Aboriginal and Torres Strait Islander peoples.

Factors that have an impact on Aboriginal people’s engagement with health services and medicines are various. They may include the cost of multiple medicines, the distance to services, poverty, racism, dispossession, lack of control, the stigma associated with a diagnosis of chronic disease, educational disadvantage, shared crowded households, increased patient mobility and inadequate health professional support. Compounding these may be language, health literacy and cultural issues, concurrent use of bush or traditional medicines, lack of continuity of care and the absence of strong relationships with health practitioners. Failed patient–doctor interactions, poor healthcare delivery systems, complex medicine regimens and struggles with social and emotional wellbeing decrease the likelihood of effective management of medicines.

The Aboriginal Health Service Remote Access (AHSRA) program was established in 1999, providing free Pharmaceutical Benefit Scheme (PBS) medicines, and so improving medication access, for remote Aboriginal people. Two other PBS co-payment schemes, the QUMAX or Quality Use of Medicines Maximised for Aboriginal People and the Close the Gap programs, commenced in 2008 and 2010 to provide non-remote Aboriginal people with financial assistance with their medicines. These programs, whilst reducing some financial barriers to medicine access, are not sufficient to address all barriers. Without improved understanding of medicines and increased medicine adherence, chronic disease will remain poorly controlled. Engagement of patients in their healthcare goals, communication of medicine information and simplification of complex therapeutic medicine regimens also need to be achieved.

Clinical pharmacists and the cognitive pharmacy services they deliver – such as patient medicine education, medicine reviews, drug interaction checking, dosage and adverse effect monitoring, medication reconciliation and clinical interventions – can make valuable contributions to improving health outcomes. Pharmacists need to increase their understanding of Aboriginal culture, Aboriginal Health Services (AHSs) and their Aboriginal Health Worker (AHW) staff, and better understand the needs of their local community, in order to deliver effective primary health care to Aboriginal people and so maximise the therapeutics effects of prescribed medications.
The Home Medicines Review (HMR) program\(^1\) is a cognitive pharmacy service, which was introduced in Australia in 2001 by the Australian Government. This home-based program is designed to assist patients to maximise the benefits of their medication regime and prevent the harmful consequences of medication misuse\(^2\). On a referral from a general practitioner (GP), an HMR trained and accredited pharmacist will visit the patient at home, and interview the patient about their medication. The pharmacist explains the medications, their usage and provides appropriate medication information to the patient. The pharmacist then prepares a report of their findings, using information provided by the patient, medical information provided by the GP and the patient’s dispensing history from the pharmacy. The accredited pharmacist reports the findings and their recommendations to the referring GP. This report forms the basis of the Medication Management Plan, which the GP may implement with the patient on their next visit. The GP and pharmacist claim payment from Medicare Australia.

Most patients would benefit greatly from an HMR consultation after discharge from hospital, when medication confusion and incidents of medication misadventure increase. There may also be occasions when patients are unable to access primary healthcare services and consult a GP. For these reasons there has been some debate around the need for various health professionals to be permitted to initiate and refer patients for an HMR. To date, program rules still allow only GPs to refer patients for an HMR.

Home Medicine Reviews have been found to raise awareness of medication safety and ultimately reduce adverse events and unnecessary hospital admissions\(^3\). Lack of medication information often leads to failure of the patient to take their medicine correctly, which can in turn lead to therapeutic failure or unwanted/dangerous effects from medications\(^4\). An HMR creates an opportunity for the patient to receive medication counselling from an accredited pharmacist. The HMR is the perfect platform to improve medication concordance and reduce medication misadventure in those who have complex medication needs\(^5\). Whilst most HMR studies have found very positive consumer acceptance of the HMR program, some others have reported consumer ambivalence\(^6\).

Evaluations of the HMR program provided by consultants employed by the government\(^7\) identified that Aboriginal and Torres Strait Islander peoples had been ‘underserviced’ by the HMR program and are the most likely of all Australians to miss out on HMRs, despite having the highest rates of hospitalisation due to medication misadventure\(^8\). There is no accurate, accessible data documenting the number of HMRs being undertaken with Aboriginal patients; however, anecdotal evidence suggests that the number is still small, despite marginal increases as a result of some pharmacists working with AHSs during the implementation of the QUMAX program from 2008 to 2012. The 2007 Campbell report\(^9\) commissioned by Australian Government called for the urgent introduction of a more culturally appropriate model of HMRs and for expanded HMR services to Aboriginal people. To date these recommendations have not been implemented.

The goal of the present study was to explore Aboriginal and Torres Strait Islander perspectives of the HMR program and their suggestions for an ‘improved’ or more readily accessible model of service. This article reports the analysis of the views of the Aboriginal and Torres Strait Islander people who participated and informs policy and medication initiatives for these Australians.

Very little research has been conducted in the area of medication management and cognitive pharmacy services for Aboriginal and Torres Strait Islander peoples or the role of pharmacists in Aboriginal health. Published research has been reviewed and has been used to situate this study.

**Methods**

This is an exploratory study of Aboriginal and Torres Strait Islander patients’ perceptions of the HMR model. An Aboriginal advisory group was established to guide the design and data collection phases of this study. The advisory group...
members consisted of community elders, an AHS chief executive officer and two health administrators. The group advised on engagement with AHSs, focus group management, language, culture and question design.

As research and researchers have had a poor reputation in many Indigenous settings, AHSs were chosen as the sites for recruitment of patients and data collection because AHSs provided a culturally safe environment. Shyness and distrust of the unknown, non-Aboriginal researcher was diminished by holding the focus groups in the familiar surroundings of the AHS.

Aboriginal shyness, poverty, effects of long-term discrimination and powerlessness have been identified as barriers to generating information with Aboriginal participants. Focus group methodology was chosen because it allows minimally structured 'yarning' that gathers information through conversation and storytelling. Storytelling is the preferred communication method for many Aboriginal people.

Each AHS was given verbal then written information about the project, and each management and board was asked to approve participation in the study. Aboriginal staff members were asked to assist with patient recruitment and focus group organisation and they acted as cultural brokers, managing the relationship between participants and the researcher. They were vital to establishing trust and cooperation.

Eighteen semi-structured focus groups were conducted with Aboriginal and Torres Strait Islander patients (n=102) at 11 AHSs in five Australian states and territories: Queensland, Northern Territory, South Australia, New South Wales and Victoria. The sites were selected for diversity and included urban (n=2), regional (n=3), rural (n=7) and remote (n=4) settings. They ranged across language groups and they varied in governance, size and service delivery models. The AHSs prescribed and dispensed medicines under different schemes, including AHSRA, QUIMAX and Close the Gap, and two sites had in-house pharmacists. Three northern Australian sites were chosen to include Torres Strait Islander people.

representation. Table 1 indicates the number of participants in each focus group.

The researcher specifically targeted some AHSs where HMRs were being conducted so that she could explore participants' HMR experiences at these sites and thus 20% of focus group participants in this research had received an HMR. The overall percentage of Aboriginal and Torres Strait Islander peoples having had an HMR in Australia is much less than this figure.

Participants of AHSs who were multiple medication users and understood English were recruited to the study by AHS staff. Although no formal demographic data was collected, the researcher recorded in field notes that 75% of participants were female, approximately 90% of participants appeared to be aged over 40 years, and about 70% appeared literate in written English.

Participants were given written material explaining the study by AHS staff, before consent was sought. The researcher confirmed understanding, willingness to participate and permission to record proceedings at the beginning of each focus group before formal consent was obtained.

Two types of focus groups were conducted. Seven focus groups were conducted for people who had already used the HMR program (User, n=23) and 11 focus groups were conducted for people who had not had an HMR (Non User, n=79). All focus groups were conducted by the first author. The challenge of conducting high-quality focus groups was not underestimated and analysis of participant interaction as well as content was recorded in field notes after each focus group.

In the User focus groups HMR Users were asked to reflect on their experience of having an HMR, and then on their satisfaction or lack of satisfaction with their experience, as well as what they believed might be barriers and facilitators for other Aboriginal and Torres Strait Islander people in accessing the HMR program. Non User focus groups received a description of the HMR program rules and processes. The
group then discussed their perceptions of the HMR program, the barriers and facilitators of the HMR model and strategies to increase accessibility of the HMR program for Aboriginal and Torres Strait Islander people.

Focus group questions (Table 2) were modified slightly as a result of early groups and concurrent analysis, to ensure all content raised in early groups was explored.

Focus group recordings were de-identified and transcribed verbatim. Transcripts were coded and analysed for themes. Analysis occurred concurrently. Themes were identified by repetition of words and phrases, and shared meanings, evident across data. Finding were discussed with other researchers to ensure the meanings generated were agreed and mutually shared.

Focus groups continued and concepts were explored until no new findings were being generated and thus saturation of data occurred\textsuperscript{13}. Field notes and summaries written at the end of each focus group were incorporated into the analysis.

Questions about the same issues produced similar findings in different settings despite urban–rural variability. The homogeneity of most findings was surprisingly strong across the varied settings and groups, adding strength to the findings. There was some small variability relating to more general issues of remoteness, such as lack of availability of health professionals and increased usage by patients of local Aboriginal language. There was no significant difference in understanding of medicines or perceptions of the HMR program across the varied geographical settings and thus it has not been necessary to discuss findings according to location.

Ethics approval

Ethics approval was sought and granted from the University of Sydney Human Research Ethics Committee (11504), the Aboriginal Health and Medical Research Council (New South Wales), the Menzies School of Health Research (Northern Territory, South Australia) and the Aboriginal Health Research & Ethics Committee (Victoria).

Results

Most participants reported difficulties in managing their multiple medicines, and many expressed a desire to better understand their medicines\textsuperscript{26}.

Most of the User participants reported that the HMR interview had been very useful for learning more about their medicines. However, many reported that they found the process confusing and confronting, as no one had explained what was to happen or for what purpose an HMR was being conducted. Most commented they would have liked some follow-up from the pharmacist after the HMR interview, such as a phone call, written report, written medicine information or another meeting.

The majority of the Non User participants believed that HMR could be a useful tool for Aboriginal people, if the process was managed in a culturally appropriate way. Six participants felt they had the need for an HMR implied 'you are not doing the right thing'.

User and Non User participants suggested ways the HMR program needed to be implemented to increase the uptake of this program by Aboriginal and Torres Strait Islander people as cultural issues and living circumstances are not currently addressed by the rules governing the process.

Findings from the Aboriginal patients about HMR are grouped into two main themes and their subthemes. The main themes are cultural considerations and adapting the HMR process to suit Aboriginal people's needs.

Cultural considerations for Home Medicines Reviews with Aboriginal patients

'It works to be organised by the health service': Most participants, both HMR Users and Non Users, were adamant that they would only agree to having an HMR if it was suggested and organised by their AHS, because 'then you can trust that the pharmacist is appropriate and that it [HMR] is for your benefit'. The AHS was described as a culturally safe service that understood the needs of its Aboriginal patients.
Table 1: Number of participants at focus groups

<table>
<thead>
<tr>
<th>Location</th>
<th>Governance</th>
<th>No. of participants in HMR Users Focus Group</th>
<th>No. of participants in HMR Non Users Focus Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural</td>
<td>ACCHS</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Remote</td>
<td>ACCHS</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Urban</td>
<td>ACCHS</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>Regional</td>
<td>ACCHS</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>Remote</td>
<td>State Health</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Regional</td>
<td>ACCHS</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Remote</td>
<td>ACCHS</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>Urban</td>
<td>ACCHS</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Rural</td>
<td>ACCHS</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>Remote</td>
<td>State Health</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Regional</td>
<td>ACCHS</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>23</td>
<td>79</td>
</tr>
</tbody>
</table>

ACCHS, Aboriginal Community Controlled Health Service. HMR, Home Medicines Review

Table 2: Core Home Medicines Review questions to Users and Non Users

<table>
<thead>
<tr>
<th>Questions to HMR Non Users</th>
</tr>
</thead>
<tbody>
<tr>
<td>How do you manage your medicines?</td>
</tr>
<tr>
<td>Have you ever heard of a Home Medicines Review?</td>
</tr>
<tr>
<td>Now that I have explained how a Home Medicines review works, what do you think might be the advantages or disadvantages of such a program?</td>
</tr>
<tr>
<td>Who do you think should organise the HMR interview?</td>
</tr>
<tr>
<td>How do you feel about the HMR pharmacist visiting you at home?</td>
</tr>
<tr>
<td>If available, would you or one of your family consider having an HMR? If yes, What do you hope some of the outcomes might be?</td>
</tr>
<tr>
<td>Why do you think Aboriginal and Torres Strait Islander people are low users of this program?</td>
</tr>
<tr>
<td>Can you suggest ways we could increase the number of Aboriginal and Torres Strait Islander people having HMRRs?</td>
</tr>
<tr>
<td>Questions to HMR Users</td>
</tr>
<tr>
<td>How do you manage your medicines?</td>
</tr>
<tr>
<td>Who organised your HMR?</td>
</tr>
<tr>
<td>Who do you think should organise the HMR interview?</td>
</tr>
<tr>
<td>How would you or one of your family consider having an HMR? If yes, What do you hope some of the outcomes might be?</td>
</tr>
<tr>
<td>Why do you think Aboriginal and Torres Strait Islander people are low users of this program?</td>
</tr>
<tr>
<td>Can you suggest ways we could increase the number of Aboriginal and Torres Strait Islander people having HMRRs?</td>
</tr>
</tbody>
</table>

HMR, Home Medicines Review

Aboriginal people’s shyness was seen as a barrier to some patients having a HMR. Some people are shy, some people feel threatened by people they don’t know. The patients often relied on the AHS to assist them organise appointments, navigate the health system and broker relationships with health professionals.

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The health service people are people you trust, people that look after you, people you know. If they organise it then it must be okay. Also they know about our family, where to find us and can organise transport and the right time.

'It can't just be anyone': As long as the HMR interview had been organised by the AHS the participants were happy to engage with the pharmacist, even when he/she was a 'stranger'.

Participants felt that it was important for the AHS to form a working relationship with a specific pharmacist, so that this pharmacist could learn to relate to AHS staff and patients: 'I would just like to be given one pharmacist.' It was important that the pharmacist had a good attitude and respected Aboriginal patients. Many felt it would be desirable, and some felt imperative, for this pharmacist to receive cultural awareness training from the AHS: 'It can't just be anyone. They have to be culturally appropriate or they could offend someone.'

'Sometimes you don't want someone in your home': Participants were evenly divided about whether they would be comfortable to have an HMR interview occur in their home or prefer to have it conducted at the health service or clinic. Some discussed the convenience of having it at home for the very elderly and disabled, and others said the benefits included 'you're comfortable in your own home' and that 'in my house I'll open up, I'm the boss kind of thing.' However, half of respondents were adamant that 'sometimes you don't want someone in your home' and stated that 'a lot would rather have it at the clinic' because 'a lot of people don't like strangers in their house' and Aboriginal people do get shamed if they haven't cleaned up' and that 'I have a large family coming and going and sometimes it would be noisy and not very private.'

All participants agreed that to give people having an HMR 'a choice (of location) would be a good idea'. Some participants discussed the possibility of having an HMR in the garden, in the park or down by the river. The majority felt that a private space at the AHS was probably a very suitable option for many Aboriginal patients. The majority of study participants agreed that the name 'Home Medicines Review' would put some people off having one because they think they have to have it in the home'.

'The health worker is the key': Most participants indicated that they would like to have an AHW present at the HMR interview with the pharmacist. It was felt that an AHW would break down barriers and aid understanding. They 'break the ice' and 'they know about you' and 'diffusing people's fear helps them to understand'. It was also felt that they would aid communication by prompting the right questions, translating and interpreting jargon and explaining concepts. 'The health worker breaks things down for us, so that we can understand'.

The AHW, as the most 'continuous' member of the healthcare team, was seen as a useful resource for follow-up questions and reminders. 'They can help us remember to take our medicines' and 'they can ask the doctor for us' and 'they can explain it later if we don't understand'.

Having an AHW present at a HMR interview was seen as even more imperative when the pharmacist was of differing gender to the patient. A male AHW should attend a male patient and a female AHW attend a female patient to ensure that sensitivities around 'men's business' and 'women's business' are respected. Most stated that the gender of the pharmacist didn't matter as long as they were accompanied by the appropriate AHW. However, a few male participants stated that they would not discuss private health matters with a female pharmacist, even if an appropriate AHW was present.

It was considered important to give patients the choice of a specific AHW to attend the HMR interview. Sometimes the AHW was a community member and the patient stipulated, 'I don't want her to know my business' and 'sometimes because it's not nice in front of that health worker if they're not comfortable with that health worker' or if there is 'family friction'. The choice of which health worker should be present was very important.
Group Home Medicines Reviews: Family members, carers and other community members were often seen as integral to the management of medication and assisting in reminding patients to take their medicines. A number of participants said when having an HMR they would prefer a family member or carer also to be present: 'Sometimes it would be good to have someone else there to help me remember.' It was suggested that family members and carers, as nominated by the patient, should be formally invited to attend the HMR so they feel 'welcome'. A small number of participants also stated they would like to have their HMR or a medication session in a group: 'Being with other people with similar problems helps us to learn. They might ask things we need to know about.' They commented that it would be 'great to get together with other diabetics to see if they have the same issues.'

Adapting Home Medicines Reviews to Aboriginal patients' needs

Explaining the process: Focus group participants who had not had an HMR had little or no awareness of the HMR program. All the participants felt the lack of awareness and promotion of the HMR program were contributing factors to the low uptake of the HMR program by Aboriginal people. 'What is an HMR?' and 'No one knows that it is available' were common sentiments. It was also suggested that the name 'Home Medicines Review' would deter some patients as they would not be comfortable with having a pharmacist visit them at home.

Participants who had had an HMR spoke of some 'nerves' and apprehension before the pharmacist visit and some stated that they were unclear about the purpose of the pharmacist's visit. More communication and fact sheets outlining the process would have been helpful.

A few participants expressed the view that more consultation and communication between government and community around health program design would have been 'helpful'. About half of the participants said they would like follow-up, and feedback from the HMR pharmacist after the interview, and a few even said they would like to see a copy of the report sent to the doctor.

Most participants who had had an HMR thought that an HMR was just a 'chat' with a pharmacist about their medicines. Only two participants realised that the pharmacist wrote a report for the doctor and that subsequent medication changes might relate to the pharmacist's recommendations. Mostly they felt that, 'Afterwards nothing happened. I don't think anything changed.'

Referrals: Participants felt that many patients were unlikely to take referral documents from a doctor to the pharmacy and then directly liaise with an accredited pharmacist to make an appointment, as is suggested in the HMR program rules. They felt that, 'If it's too much mucking around for us, it won't happen.'

Many participants, and all those from the more remote areas, suggested that an AHW or AHS nurse should be able to write an HMR referral, as it was the AHWs and nurses who knew them 'best' and were the health professionals with whom they interacted most often. It was the AHWs and nurses who offered continuity of care, whilst many doctors 'come and go'.

Participants felt that it was the AHW that best understood if they needed assistance with medication management, assistance with transport to attend the HMR interview, which family member to invite and when to make an appointment with the GP. Because the AHW was seen as the person who would be mostly likely to follow up after the HMR, it was viewed as important that the AHW was also involved in and aware of the HMR referral.

Medication specialists: AHWs were seen as the most accessible and most approachable of the health professionals at the AHS and a few participants commented, 'we need a health worker that specialises in medicines.'
We need health workers to be trained as experts, to be able to have this knowledge to link between the pharmacy, the doctor and the patient’s journey in the community so that all the questions can be answered.

Written resources: None of the participants who had had an HMR had received any written material. Most believed, ‘it would have been good if the pharmacist had left some written information, simple to understand, to show to my family and read later’. A number of participants throughout the focus groups commented on the need for simple, jargon-free, culturally appropriate medication resources to assist in the understanding of their medication and health management. Many participants expressed the desire for a comprehensive medicines list that could be kept in their wallet or bag.

Discussion

This study showed that many Aboriginal people were keen to have a pharmacist working within their health service. They felt that a pharmacist working with their AHS would be someone with whom they could develop rapport and trust, and who would be available to deliver medication reviews, medical education and other clinical services to Aboriginal patients.

The current HMR model and associated rules are restrictive and not conducive to utilisation of the program by Aboriginal and Torres Strait Islander people. Issues of referral, organisation, location, reimbursement and follow-up need to be addressed to increase the number of Aboriginal people who can use this program. As in studies with non-Aboriginal patients, barriers to HMR included pride and independence, confidence issues with an unknown pharmacist, concerns regarding the home visit, and lack of information about the program. There are facilitators identified in this study that may increase the uptake of HMRs with Aboriginal and Torres Strait Islander patients, improve health and have economic benefits.

Home Medicines Review rules dictate that referrals can only be written by a GP. Previous studies have identified that GPs’ lack of understanding of the HMR process and GPs’ time constraints have resulted in low HMR initiation rates. In remote areas of Australia, GPs are often scarce or on short-term contracts, resulting in lack of rapport and lack of continuity of patient care. Remote GPs need to prioritise acclimatisation, cultural orientation, medical emergencies and acutely ill patients, as well as manage chronic disease. Referrals for HMRs are very low in such areas. In urban and rural AHSs, the GPs are often overloaded with complex patients with high disease burden. Long and complex patient consultations may result in low prioritisation of HMRs and low numbers of HMR referrals. Participants in the study identified that they more often discussed their medicines with the nurses or AHWs, with whom they more frequently engaged, rather than with their GPs. Aboriginal Health Workers and nurses are best placed to identify patients at risk of medication mismanagement and therefore program rules need to allow AHWs and AHS nurses to write an HMR referral.

The present study confirmed the important role that AHSs play in the primary healthcare for Aboriginal and Torres Strait Islander people. Aboriginal Health Services were described as comfortable, safe environments that understood and addressed Aboriginal patients' needs, and acted as the broker of services to the community. Study participants identified that it was the AHS who should organise the HMR interview and organise follow-up after the interview. It was through the AHS that culturally appropriate information about the HMR process and written information about medicines should be distributed. It was the AHS, commonly described as the clinic, that was identified as the most culturally safe place for the HMR interview to occur. Studies show that having pharmacists integrated in a clinic or medical practices has strong patient support and results in improved patient outcomes.

The role of AHWs was seen as pivotal to the success of an HMR by the study participants, reinforcing previous literature describing the important role of AHWs in...
brokering communication between health professionals and Aboriginal patients. Aboriginal Health Workers were described by participants as the health professionals who could best identify the patient need for an HMR, the most trusted organisers, the most effective communicators and the most likely ongoing source of information about medicines. There is currently no reimbursement for AHW involvement in the HMR process. Often, AHWs work across numerous programs within the AHS, including early childhood, sexual health, mental health and healthy lifestyle promotions. They are often overburdened with work commitments, and often attend to community health needs out of work time. To ensure the AHWs' time is allocated to medication issues and involvement in HMRs, the HMR program needs to be able to reimburse the AHS for their involvement in medication management roles. A number of participants suggested the need for some AHWs to specialise in medicines, reinforcing previous studies suggesting more AHW medication training.

Group medical consultations are a new innovation being used to enhance patient engagement and to address issues of GP shortage and overload due to ageing populations and increasing burdens of chronic disease. Patients who have received care in groups reported improvement in health outcomes, improved sense of trust in the physician, and tended to report better coordination of care, better community orientation and more culturally competent care. A few participants of the present study identified that they would like to receive medication information as a group. They felt an HMR interview could be a more effective education session if conducted with a group of patients with similar medical conditions, and with the pharmacist, AHW and possibly the nurse and doctor also participating.

Study participants strongly supported the HMR program, stating that the HMR program or similar could greatly assist Aboriginal people manage their medicines and improve their health. More funding and significant time and resources need to be invested in medication management programs for Aboriginal patients. The current HMR program has been designed with little or no understanding of Aboriginal culture and little or no input from Aboriginal people. There is a need to design and implement cognitive pharmacy services that can effectively deliver medication assistance in urban, rural and remote settings and to Aboriginal and Torres Strait Islander communities. The funding for this program needs to be uncapped to ensure viability, sustainability and confidence is invested in this program.

The study was limited by English language requirement for participation. The participants were selected by the AHS staff, not randomly drawn or selected. It is suspected that AHS staff approached those with whom they had stronger relationships and those they felt would be effective focus group participants. This may have caused some bias. A wide range of sites were used to try to maximise variability. Despite diversity of settings, there was considerable consonance across responses. The views of Aboriginal people who do not attend AHSs have not been captured and therefore it is difficult to extrapolate findings to all Aboriginal and Torres Strait Islander people. However, the sample size was larger and more diverse than for many studies with Aboriginal participants and therefore has merit.

Conclusions

Increasing HMRs for Aboriginal and Torres Strait Islander people has the potential to increase medication knowledge, medication adherence and therefore improve chronic disease management.

The current HMR program rules impede rather than facilitate HMRs for Aboriginal people. Changes needed to increase the uptake of HMRs by Aboriginal and Torres Strait Islander people include promotion to increase awareness of HMRs; providing leaflets to patients outlining the HMR process; allowing an HMR referral to be written by a nurse or AHW; facilitating the HMR interview by allowing choice of location, AHW and family member; reimbursing AHSs for staff organisation and attendance of HMR interviews; and providing HMR follow-up to patients. It is suggested that the
HMR program be remodelled and renamed after consultation with Aboriginal and Torres Strait Islander people.

Solutions that would assist with health workforce shortages, managing the increasing burden of chronic disease and funding shortfalls, include employing pharmacists within AHSs, training AHWs to specialise in medicines and reimbursing pharmacists to conduct individual or group medication education sessions.

If the Australian Government is serious in addressing the health inequities that exist for Aboriginal and Torres Strait Islander peoples it needs to invest in medication education strategies that will assist Aboriginal people to manage their medicines. The HMR program could be a useful tool but tailoring of this program is needed to increase awareness, accessibility, acceptability and effectiveness for Aboriginal and Torres Strait Islander people. Until the government engages Aboriginal people to assist in health program design it will continue to exclude Aboriginal people from mainstream programs, such as HMR and continue to increase the inequity.

Acknowledgements

Sincere thanks to the members of the Aboriginal advisory panel, the AHS staff and focus group participants who gave their time so generously to assist this research.

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References


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Medication reviews are useful, but the model needs to be changed: Perspectives of Aboriginal Health Service health professionals on Home Medicines Reviews

Lindy Swain and Lesley Barclay

Abstract

Background: The Australian Home Medicines Review (HMR) program consists of a pharmacist reviewing a patient's medicines at his or her home and reporting findings to the patient's general practitioner (GP) to assist optimisation of medicine management. Previous research has shown that the complex HMR program rules impede access to the HMR program by Aboriginal and Torres Strait Islander clients.

This study explores the attitudes and perceptions of health professional employees working within Aboriginal Health Services (AHSs) towards the HMR program. The goal was to identify how the HMR program might better address the needs of Aboriginal and Torres Strait Islander people.

Methods: Thirty-one semi-structured interviews were conducted with health professionals at 11 diverse AHSs. Fourteen Aboriginal Health Workers (AHWs), five nurses, one manager and 11 GPs were interviewed. Interviews were recorded, de-identified and transcribed verbatim. Transcripts were coded and analysed for themes that recurred throughout the interviews.

Results: This study identified a number of barriers to provision of HMRs specific to Aboriginal and Torres Strait Islander clients. These included paternalistic attitudes of health professionals to clients, heightened protection of the GP-client relationship, lack of AHS-pharmacist relationships, need for more culturally responsive pharmacists and the lack of recognition of the AHS's role in implementation of culturally effective HMRs.

Changes to the HMR model, which make it more effective and culturally appropriate for Aboriginal and Torres Strait Islander people, were recommended. Improved relationships between GPs and pharmacists, between pharmacists and AHSs, and between pharmacists and Aboriginal and Torres Strait Islander clients were identified as key to increasing HMRs for Aboriginal and Torres Strait Islander people.

Conclusions: Aboriginal Health Services are well-placed to be the promoters, organisers, facilitators and implementers of health programs, such as HMR, for Aboriginal and Torres Strait Islander clients.

Embedding a pharmacist within an AHS addresses many of the barriers to HMRs. It ensures pharmacists are culturally mentored and that they build strong relationships with health professionals and clients.

The HMR program rules need to be changed significantly if medication review is to be an effective tool for improving medication safety and adherence for Aboriginal and Torres Strait Islander people.
Background
The Australian Home Medicines Review (HMR) has been found to be an effective tool for improving medication safety, and reducing adverse events and unnecessary hospital admissions [1–3]. It consists of a pharmacist reviewing a patient’s medicines and reporting findings to the patient’s general practitioner (GP) to assist optimisation of medicine management. It is a ‘free to patient’ Australian Government managed program. An HMR referral is initiated by the patient’s GP and then an HMR-accredited pharmacist is organised to visit and interview the patient in his or her home. The pharmacist sends a report of findings to the GP who then discusses recommendations and makes any appropriate medication changes in collaboration with the patient [4].

To claim funding from the Australian Government for an HMR the GP and pharmacist must adhere to program rules [4]. In the 2008 evaluation report [5] the complexity of business rules and the number of steps involved in the HMR process were identified as barriers to initiation of HMRs. The program rules stipulate the HMR referral can only be written by a GP. The GP must obtain the patient’s consent, a GP can only claim funding through the Medicare Benefits Scheme after a second visit from the patient to discuss the pharmacist’s HMR report and formulate the medication management plan, and the GP can only bill one out of the two consultations relating to the HMR. The suggested HMR referral form requires the GP to specify detailed patient information, and medical and medication history. The program rules often confuse the suggested indications on referral forms, such as taking five or more regular medications, with the specific rules for HMR program eligibility [5]. Rules state that a patient may only receive an HMR every 24 months or if a GP deems an HMR is specifically necessary due to significant changes to the patient’s condition or medication regimen. The latter part of this rule is rarely applied, for most GPs and pharmacists are concerned they will not receive payment if they step outside the specified 24 months. Thus, some eligible patients are not being referred for HMRs. The 24-month rule appears to have been applied due to budgetary restrictions of the program rather than as a result of any data that determine that this is an appropriate timeline for maximising medication management [6].

The HMR program rules and claim lodgement processes are also restrictive for pharmacists, as described below and as lamented by pharmacists in concurrent research [7]. The program’s rules have actually increased rather than decreased under the recent Fifth Government-Community pharmacy agreement [4]. The HMR payments can only be claimed by pharmacists if the HMR is conducted by an HMR-accredited pharmacist, if the patient is living in a community setting, if the claim is submitted within 30 days of conducting the patient interview, and if the HMR-accredited pharmacist has conducted fewer than 20 HMRs within the month. Rules state that an HMR interview must occur in the patient’s home unless prior approval has been obtained from the Pharmacy Guild of Australia, which manages the HMR program. This prior approval has to be sought by the pharmacist on a case-to-case basis, giving full patient details to the Pharmacy Guild of Australia, at least 10 days prior to the proposed interview date [4].

The evaluation of the HMR program in 2008 [5] included perspectives of GPs and pharmacists on the HMR program. Those interviewed described how while HMRs were a “good idea”, the program was not working well. Dominant themes in the evaluation report included the complexity of business rules, time delays between HMR initiation and completion, and communication difficulties between GP and pharmacist. It reported that whilst the GPs who had experienced HMRs were very positive, the others were mostly ambivalent. Many valued HMRs as a lower priority than health assessments [5].

The 2008 HMR evaluation report, commissioned by the Department of Health [5], also identified that Aboriginal and Torres Strait Islander people, despite their high burden of chronic disease, were the most likely of all Australians to miss out on HMRs and that the current HMR model was not appropriate for Aboriginal and Torres Strait Islander people [5]. A recent study [8] has explored the views of Aboriginal and Torres Strait Islander patients about the HMR program. The Aboriginal and Torres Strait Islander patients in that study felt an HMR would assist them to better understand their medicines and empower them to seek information about medicines, would improve relationships with health professionals and would increase the likelihood of medication adherence. These Aboriginal and Torres Strait Islander patients concluded, however, that current HMR rules impeded rather than facilitated HMRs for Aboriginal and Torres Strait islander people [8]. Barriers to HMR delivery were the program guidelines that stated an HMR should be delivered in the patient’s home, the referral process that required patients to organise the HMR interviews with the pharmacists and the lack of reimbursement for Aboriginal Health Worker (AHW) involvement in HMR processes [8].

This study explores the attitudes and perceptions of health professional employees working within Aboriginal Health Services (AHSs) towards the HMR program. The goal was to identify how the HMR program might better address the needs of Aboriginal and Torres Strait Islander patients. No previous HMR studies have analysed the views of health professionals
working with Aboriginal and Torres Strait Islander patients.

Method
This qualitative descriptive study explored AHS employees' perceptions of the HMR model. The design was appropriate for this study because it facilitated the gathering of rich, contextual data related to service delivery in AHSs. Participants included GPs, nurses, AHWs and an AHS manager.

Eleven AHSs in Queensland, Northern Territory (NT), South Australia (SA), New South Wales (NSW) and Victoria participated. The sites were selected for diversity and included urban (n = 2), regional (n = 3), rural (n = 2) and remote (n = 4) settings. They varied in governance and size. Some AHSs were initiating HMRs for their patients whilst others were not. The AHSs (n = 5) which were known to be proactively conducting HMRs were approached so that the views of health professionals who had had experience with HMRs could be explored. The other sites were chosen to given geographical diversity. All sites approached agreed to participate.

Each AHS was given verbal, and then written information about the project, and the management and boards were asked to approve participation in the study. Each board gave written consent. Written consents were submitted to state Aboriginal ethics committees. A feedback report was sent to each AHS after research was conducted. All individual participants were given written and verbal information about the study, and written consent was obtained from each participant.

An interview guide was designed with key open-ended questions to encourage a natural exploratory conversation with the interviewee. The interviewer used the questions to prompt the sharing of the participant's experiences and ideas. All interviews were face to face and conducted by the same researcher. Questions were modified to ensure all content raised in early interviews was explored subsequently.

Thirty-one semi-structured interviews were conducted at 11 AHSs. The numbers of each profession participating were influenced by staff availability and willingness to participate at each AHS. Fourteen AHWs, five nurses, one manager and 11 GPs were interviewed. See Table 1 for interview guide.

Of the 11 participating AHSs in this study, three were conducting HMRs regularly, four occasionally and four not at all. Only at the three AHSs, where there were contracted pharmacists, were patients being referred regularly for HMRs. One of these AHSs had a salaried pharmacist employed by the AHS for a range of clinical pharmacy roles, including HMRs. The other two had each contracted an HMR-accredited pharmacist to conduct HMRs, with one using a chronic care nurse and the other an AHW to co-ordinate the program. Although only three GPs were referring patients for regular HMRs, all interviewed GPs were aware of the HMR program although some lacked understanding of the HMR referral processes. The majority of nurses and AHWs interviewed were unaware of the HMR program.

Interviews were recorded, de-identified and transcribed verbatim. Transcripts were coded and analysed

<table>
<thead>
<tr>
<th>Table 1 Semi-structured Interview Guide</th>
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<tbody>
<tr>
<td>1. Explore attitudes to HMR program</td>
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<tr>
<td>How do you feel about the HMR program?</td>
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<tr>
<td>How likely are you to order a HMR for a patient?</td>
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<td>How often do you order HMRs? What determines this?</td>
</tr>
<tr>
<td>2. Explore understanding of HMR processes</td>
</tr>
<tr>
<td>Who do you order HMRs for? Why?</td>
</tr>
<tr>
<td>How do you find the HMR process?</td>
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<tr>
<td>Do you have assistance from other staff members in organizing HMRs? If so, how?</td>
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<tr>
<td>3. Identify reasons for ordering HMRs (benefits)</td>
</tr>
<tr>
<td>How useful have you found HMRs? Or how useful do you think an HMR could be?</td>
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<tr>
<td>What is the most useful aspect of an HMR?</td>
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<tr>
<td>What feedback have you had from your patients about the HMR?</td>
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<tr>
<td>How do you find the pharmacists' reports?</td>
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<tr>
<td>4. Identify barriers to initiating HMRs</td>
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<tr>
<td>Is there a reason why you don't order more HMRs? Please explain</td>
</tr>
<tr>
<td>Would you like to order more HMRs? Please explain</td>
</tr>
<tr>
<td>What are the limiting factors in referring patients for an HMR?</td>
</tr>
<tr>
<td>Why do you think there are not many HMRs being conducted for Aboriginal and Torres Strait Islander patients?</td>
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<tr>
<td>5. Encourage recommendations</td>
</tr>
<tr>
<td>Do you believe the current HMR model is effective/not effective? Please explain</td>
</tr>
<tr>
<td>How appropriate is the HMR model for your patients?</td>
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<tr>
<td>Are there any ways the model could be improved? If so, how?</td>
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</table>
for themes that recurred throughout the interviews. Analysis occurred concurrently.

Ethics approval was sought and granted from the University of Sydney Human Research Ethics Committee (11504), the Aboriginal Health and Medical Research Council (NSW), the Menzies School of Health Research (NT, SA) and the Aboriginal Health Research & Ethics Committee (Victoria).

Results
The study participants who had experienced an HMR were extremely supportive of the program. The four GPs who had never referred patients for HMRs expressed reservations about the value of HMRs and concerns over the need to burden patients with further referrals. Two of the nurses interviewed were not supportive of HMRs. These nurses believed that although HMRs were “good in theory” Aboriginal patients were “not interested” and there’s no point filling them up with a huge amount of education if they are not going to take the medicines anyway”. The AHIAs who had not previously been involved in HMRs were very keen to understand the details of the HMR program as they felt it would greatly assist their clients who they believed often “don’t understand how the medicines work, when they work, and they don’t take them at the right times or the right way”. Most of the interviewees expressed positive views regarding the potential benefits of HMRs for their patients’ health.

The emergent themes, and the perceived benefits of and barriers to the HMR program, are discussed below and summarised in Table 2.

“Home Medicines Reviews are useful”
Three of the five nurses and all AJ HW interviewees described increased medicine knowledge and empowerment of patients to make medicine choices as the potential benefits of the program, stating, “HMRs were good for understanding what they’re taking and why they are taking medicines and the importance of medicines”. They also felt HMRs would assist patients to learn about potential dangers in storing medicines and sharing medicines. Most of the interviewees strongly agreed that an HMR could be useful in reducing medication “fear and worries about the unknown”.

All the AHW interviewees expressed concern about patient confusion regarding their medicines, stating “generics confuse the hell out of people” and “in hospital they start swapping and changing medications. It gets very confusing”.

The majority of the GP interviewees also felt patients would benefit from increased medicine knowledge and that patients would benefit from having “someone else reinforcing information that the doctor has given”. The majority of GPs believed that HMRs could assist their patients to feel more confident about taking their medicines and felt HMRs would “elevate the medications up the priority list”. The majority of participants believed that most patients would be “really keen” to have HMRs, although there may be a few patients who “see it as a failure to have someone come and talk to them”.

The GP interviewees who had referred patients for HMRs praised how HMRs had identified potential drug interactions and had identified “an astounding number of discrepancies between what we had on our system and what clients were taking”. Also, these GPs valued how HMRs assisted their therapeutic decision-making, assisted them to sometimes cease medications and increased their own understanding of medicines. The GPs liked the HMR reports as the “pharmacists fed back lots of information about whether there are lots of other medications from other places and whether there is confusion and that sort of thing”.

Other benefits of HMRs stated by the GP interviewees included improved understanding of whether their patients had high falls risk, were medication adherent, and were sharing or hoarding medicines. A few GP participants also commented that they felt HMRs would assist with building relationships between patients and pharmacists.

“I just don’t get around to ordering HMRs”
Despite most of the participating AHS GPs agreeing that HMRs would be very useful for their complex patients and for supporting their therapeutic decisions, only three of the 11 GPs interviewed were actually referring their patients for HMRs regularly.

The most common reasons for the GPs not “getting around” to ordering HMRs for their patients included lack of time, protection of their client-clinician relationships, lack of relationships with pharmacists and cultural inappropriateness of the HMR program. Some other reasons included complex HMR processes, not prioritising medicines in their patient discussions, GP ownership of their role in advising on medicines, and perceived lack of evidence for the value of HMRs. Two of the GPs reflected paternalistic attitudes, commenting, “they [their Aboriginal patients] are not particularly interested in having an intervention like a HMR” and “In terms of education, which I know is one of the really important parts, I’m not sure. I’m not convinced that those people think it is a high priority and that we have any way of educating these people about their medications”. Two GPs commented that reviewing patients’ medicines was part of their practice, stating, “if a patient had concerns about their medicines they would come and talk to us about it. The clinic has primary responsibility for those things” and “I do a lot of it [medication review] myself actually”. 

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Table 2: Most common perceived benefits and barriers of the HMR program

<table>
<thead>
<tr>
<th>Benefits of HMRs</th>
<th>AHS staff comments</th>
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<tr>
<td>Increased patient understanding and confidence</td>
<td>The HMR interview is a good opportunity to iron out some confusion about medicines. (AHM)</td>
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<tr>
<td></td>
<td>The clients need to know the importance of taking medicines and why they are taking them. (AHM)</td>
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<tr>
<td></td>
<td>It helps my patients understand their medicines a bit more. (GP)</td>
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<td></td>
<td>Just having another person go over it, having a bit more time and in different words can be very useful. (GP)</td>
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<td></td>
<td>There's the empowerment they/the patient get from a more clear understanding. (nurse)</td>
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<tr>
<td>Improve medication adherence</td>
<td>Because the people don't feel they're working, they tend not to take them. (AHM)</td>
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<tr>
<td></td>
<td>If you explain to them (the patients) what it is, how it works and what to watch out for, then there's some informed decision making and they're more likely to take their medicines. (AHM)</td>
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<td></td>
<td>It gave my patient more confidence to take his medicines, just having someone reassure him that the medicines he was taking were appropriate. (GP)</td>
</tr>
<tr>
<td>Supporting GP practice</td>
<td>You get to learn stuff that you wouldn't normally know about your patient. You learn about the gap, about what you think is going on and what is really going on, and you also learn stuff about medicines that you didn't know. (GP)</td>
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<tr>
<td></td>
<td>The reports can be revolutionary. You find out people are taking all sorts of things, some that you ceased months ago. (GP)</td>
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<tr>
<td></td>
<td>When a locum comes, and we have lots, they just prescribe the drugs because the patient asks for them. They don't review them or work out if they really need them. (AHM)</td>
</tr>
<tr>
<td>Barriers to HMRs</td>
<td>AHS staff comments</td>
</tr>
<tr>
<td>Lack of awareness</td>
<td>None of us here know about home medicines review. (AHM)</td>
</tr>
<tr>
<td></td>
<td>People are not aware they can ask for, or should ask for their medicines to be reviewed. (AHM)</td>
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<tr>
<td></td>
<td>They [the patients] don't know that pharmacists can do things like reviews. (AHM)</td>
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<td>Workload</td>
<td>Time is the main thing that has put me off (GP)</td>
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<td></td>
<td>We are already inundated with administrative tasks (GP)</td>
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<td></td>
<td>Aboriginal Medical Service workloads are pretty demanding. A lot of these people that qualify for an HMR also qualify for LPC, care plans, health assessments and that kind of stuff, so that might be where they're going first. (nurse)</td>
</tr>
<tr>
<td></td>
<td>One of the difficulties is having enough health workers on board to do it (participate in an HMR). Having a health worker who is trained enough to go with the pharmacist, who is trained in quality use of medicines and who understands what the pharmacist is talking about and take a lead in the whole process would be the ideal (AHS manager)</td>
</tr>
<tr>
<td>Protection of the Clinician-client relationship</td>
<td>They're pretty much already getting referred to lots of different people for lots of different things. So another referral might just feel too much (GP)</td>
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<td></td>
<td>Gaining someone's confidence and trust and having a meaningful clinical interaction requires proper cross cultural training and working with the community over some time (GP)</td>
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<td></td>
<td>Doctors are concerned about overloading the patient. (nurse)</td>
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<tr>
<td>Lack of Clinician/AHS pharmacist relationship</td>
<td>The GP's aren't driving it (HMR referrals) as they don't have a relationship with a pharmacist who can do it for them (GP)</td>
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<td></td>
<td>The relationship between the doctor and the pharmacist might not be established. If they had a rapport and a referral pathway going already that would really help. (nurse)</td>
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<td></td>
<td>The community pharmacists around here are very busy. I don't think they have time to get it done (GP)</td>
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<td></td>
<td>It would be important for the pharmacist to have some cross cultural training (AHM)</td>
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<td></td>
<td>The chronic health nurse or AHM needs to have a direct link with the accredited pharmacist, not the pharmacy. (nurse)</td>
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<td></td>
<td>Generally our clients do not have a relationship with a pharmacist (nurse)</td>
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<tr>
<td>Lack of an HMR facilitator/driver/program manager</td>
<td>We need someone at the health service allocated to encouraging the home medicines review, coordinating it, blocking out time for GPs to do referrals, taking on the role of doing the consent. (GP)</td>
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<td></td>
<td>It needs something set in place so that it can be done regularly (GP)</td>
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<td></td>
<td>We rely on a co-ordinator to organize all the logistics (GP)</td>
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<td></td>
<td>There needs to be a single point of contact, health worker to patient (AHM)</td>
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<td></td>
<td>Somebody who is well known to the patient needs to ring and explain the process. (AHM)</td>
</tr>
<tr>
<td>Complex HMR model and rules</td>
<td>It took a while to make sense of the steps (GP)</td>
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<td></td>
<td>I think the criteria are a bit restrictive. (GP)</td>
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<tr>
<td></td>
<td>It was not clear that all pharmacists were accredited. I was sending off referral letters and nothing happened (GP)</td>
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</tbody>
</table>
Attitudes of pharmacists to provision of Home Medicines Review for Indigenous Australians

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Abstract Background Home Medicines Reviews could improve the quality use of medicines and medicines adherence among Aboriginal people. Despite high level of chronic disease very few Home Medicines Review are currently being conducted for Aboriginal and Torres Strait Islander people. Objective The aim of this research was to explore the barriers and facilitators from the pharmacists' perspective for the provision of Home Medicines Review to Aboriginal people attending Aboriginal Health Services. Setting A cross sectional survey was used to gather demographic, qualitative and quantitative data from 945 Australian pharmacists accredited to undertake Home Medicines Review. Method The survey consisted of 39 items which included both closed, open ended and Likert scale questions. Data was extracted from the online survey tool and analysed. Descriptive statistics were used to explore the quantitative data while qualitative data was thematically analysed and coded for emergent themes. Main outcome measure Number of Home Medicines Review conducted for Aboriginal and Torres Strait Islander patients. Results A total of 187 accredited pharmacists responded to the survey. They reported that barriers to Home Medicines Review to Aboriginal patients may include lack of understanding of cultural issues by pharmacists; lack of awareness of Home Medicines Review program by Aboriginal Health Service staff; difficulties in implementation of Home Medicine Review processes; burdensome program rules; the lack of patient–pharmacist relationship, and the lack of pharmacist–Aboriginal Health Service relationship. Conclusion Changes to the medication review processes and rules are needed to improve the accessibility of the Home Medicine Review program for Aboriginal and Torres Strait Islander people. Improved relationships between pharmacists and Aboriginal health service staff, would increase the likelihood of more Home Medicines Reviews being conducted with Aboriginal and Torres Strait Islander patients.

Keywords Aboriginal · Aboriginal and Torres Strait Islander · Aboriginal Health Service · Australian · Barriers · Home Medicines Review · Indigenous · Interprofessional · Medication adherence · Medicines · Medication review · Pharmacist · Relationships

Impacts of findings on practice

- The access of Aboriginal Australians to home medication review needs to be improved.
- Pharmacists and their staff need assistance and training on dealing with the Aboriginal health service and workers.
- Government policies should support and encourage pharmacists to conduct medication reviews for Aboriginal and Torres Strait Islander patients.
Introduction

The Australian Home Medicine Review (HMR) is a professional pharmacy service that aims to achieve safe, effective and appropriate use of medicines and to improve the health outcomes and knowledge of medicines in participating patients [1]. Studies show that HMRs can improve medication suitability, reduce adverse drug events, increase patient medication knowledge and improve adherence rates [2, 3].

The HMR program [1] was introduced in Australia in 2001 by the Commonwealth Government. On a referral from the GP, an HMR trained and accredited pharmacist will visit the patient at home, and interview the patient about their medication and lifestyle. The pharmacist explains the medications and provides appropriate medication information to the patient. The pharmacist then prepares a report of their findings, using information provided by the patient, medical information provided by the GP and the patient’s dispensing history from the pharmacy. The accredited pharmacist reports the findings and their recommendations to the referring GP. This report forms the basis of the Medication Management Plan which the GP may implement with the patient on their next visit. The GP and pharmacist claim payment from Medicare Australia.

Indigenous Australians have poorer health, higher rates of chronic disease and lower average life expectancy than non-Indigenous Australians [4]. Despite a higher burden of acute infections and chronic diseases, under-use of medicines is evident in Australian Aboriginal populations [5]. Poor control of chronic disease states and subsequent higher hospital admissions, morbidity and mortality may be directly attributable to poor medicine management in Indigenous communities [5].

Qualitative, interview based studies have explored perspectives of Aboriginal patients and Aboriginal Health Workers (AHW) as to why medications are underutilised by Aboriginal and Torres Strait Islander people. They have identified lack of knowledge and understanding about medicines and ineffective engagement with health professionals as the two biggest barriers to appropriate medication use [7–11].

Complex medicine regimens result in some Aboriginal and Torres Strait Islander patients finding medicines confusing and difficult to manage. Greater understanding and empowerment about medicine choices seem to be likely to improve medicine adherence [10]. Pharmacists through cognitive pharmacy services, such as Home Medicines Review, have an opportunity to build relationships, increase patients’ knowledge about their medicines, and assist Aboriginal and Torres Strait Islander patients with medication understanding and treatment choices [10].

Aboriginal and Torres Strait Islander patients have identified some of the reasons why the HMR program is underutilised by Aboriginal people. These include the need for a GP to write HMR referrals, lack of relationship with pharmacist, the inappropriateness of a pharmacist visiting an Aboriginal patient’s home and lack of understanding of benefits of the HMR program [12, 13].

This study explored pharmacists’ attitudes to the delivery of HMRs to Aboriginal and Torres Strait Islander people and contributed to knowledge of the processes and supports needed to enable increased HMR delivery to Aboriginal and Torres Strait Islander people.

Aim

The aim of this research was to explore the barriers and facilitators, from pharmacists’ perspectives, for the provision of HMRs and other pharmacy services to Aboriginal people, attending the Aboriginal Health Service (AHS).

Ethical approval

Ethical approval was granted from The University of Sydney, Human Research Ethics Committee (approval number: 11504).

Methods

Data collection

A cross sectional survey was used to gather demographic, qualitative and quantitative data on the barriers and facilitators to the provision of professional pharmacy services and HMRs to Indigenous Australians. A literature review and results from preliminary qualitative studies [10, 13] were used to guide the survey design.

The survey was sent to pharmacists accredited to undertake HMRs in September 2012. At that time email contact details were listed for 983 HMR accredited pharmacists across Australia on the online database of the accredited pharmacists’ credentialling body, the Australian Association of Consultant Pharmacists [14]. The researcher successfully contacted 945 of those listed online, with the other 38 having incorrect email addresses. Thus, the majority of accredited pharmacists listed were invited to participate in the study. They were each emailed an invitation to participate in the study, containing a hyperlink to an online survey.

The survey consisted of 39 items which included both closed, open ended and Likert scale questions. Survey questions explored types of services provided by respondents to Aboriginal Health Services (AHSs), pharmacist attitudes to working with AHSs, and the barriers and
facilitators impacting on the provision of HMRs to Aboriginal and Torres Strait Islander people. The respondents were also asked a range of general demographic questions. The survey was piloted on eight accredited pharmacists, working in community pharmacy, hospital pharmacy and academia. As a result of the pilot the question order was changed slightly to make question progression more relevant and the wording of one question was altered to clarify meaning. The results of the pilot were included in the analysis.

Interactions and relationships between pharmacists and AHSs were explored in this study as AHSs have been identified as playing a key facilitating role in the successful organisation and implementation of HMRs for Aboriginal people [13].

Data analysis

Data was extracted from the online survey tool (Survey Monkey) and analysed using Excel 2007. Descriptive statistics were used to explore the quantitative data while qualitative data was thematically analysed and coded for emergent themes.

Results

This study explored the pharmacist perspective of the provision of HMRs to Aboriginal Australians to inform better understanding of the underutilisation of HMRs and to gain insight into strategies for increasing HMR provision.

Participants

Of the eligible participants, 187 pharmacists responded to the survey, representing a response rate of 19.7%. Not all respondents answered all questions. Only 88 respondents (n = 88/945, 9.3%) answered the specific questions around working with AHS staff and conducting HMRs for Aboriginal patients. This appears to reflect the small sample of pharmacists who are engaged with delivering services to AHSs.

Approximately 23% of Australia’s pharmacists reside and work in non-urban areas, mainly in rural areas and their regional towns. The number of pharmacists decreases with increasing rurality and only 1% of Australia’s pharmacists work in areas classified as remote [15]. Over 50% of the survey participants were from rural areas and regional towns, 4% identifying their workplace as remote, and approximately 40% from urban areas. The higher level of rural than urban responses may reflect the higher percentage of Aboriginal and Torres Strait patients in rural and remote areas, and thus a greater interest in completion of this survey by pharmacists in those areas.

Over 40% of respondents were community pharmacists and 46.7% identified themselves as consultant pharmacists, thus implying that their primary occupation was to conduct medication reviews.

Most of the respondents regularly conducted HMRs, with over half conducting over five HMRs per month and about a third conducting more than ten HMRs per month. However only a quarter of respondents had conducted more than five HMRs for Aboriginal patients in the last 3 years and about half of respondents had not conducted any HMRs for Aboriginal people in the last 3 years. Demographics and HMR activity of respondents is summarised in Table 1.

<table>
<thead>
<tr>
<th>Table 1 Demographic and HMR profile of respondents</th>
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<tbody>
<tr>
<td>Demographic Options</td>
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<tr>
<td>Location</td>
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<tr>
<td>Remote</td>
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<tr>
<td>Rural</td>
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<td>Regional</td>
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<td>Urban</td>
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<td>Primary role</td>
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<td>Pharmacist in charge</td>
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<td>Community Pharmacist</td>
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<td>Hospital Pharmacist</td>
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<td>Consultant Pharmacist</td>
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<tr>
<td>Other</td>
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<tr>
<td>HMRs per month</td>
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<tr>
<td>0</td>
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<td>HMRs over last 3 years</td>
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<td>11–20</td>
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Pharmacist engagement with Aboriginal Health Services

More than half of the respondents (59.1%, n = 97/164) indicated they worked within 30 km of an Aboriginal Health Service. However, close to one-third of respondents (28.7%, n = 47/164) did not know how far they were from their local AHS. This may be indicative of limited interaction with their local AHS.

Despite the close geographical proximity to AHSs, most respondents and their staff (72.6%, n = 119/164) had not
visited an AHS in the previous 12 months and 55.5% (n = 91/164) had had no contact with the AHS. For the 45% of the respondents who had had contact with the AHS, the contact was most commonly by phone (47.7%, n = 42/88). The main purpose for contact was medication supply and dispensing queries. Their most common contact was with the prescribing GP. Only 17% (n = 15/88) of respondents indicated that their engagement with the AHS related to patient medication counselling and 63% (n = 55/88) of respondents identified that they had not provided any Quality Use of Medicine Services to AHSs. Thirty-two percent of respondents (n = 28/88) provided Dose Administration Aids (DAAAs, often called Webster packs) to their local AHS.

The vast majority of respondents (89.6%, n = 147/164) indicated that they would like to have provided more services to their local AHS. They indicated that they would like to provide services such as HMRs (72.5%, n = 119/164), AMS staff education (49.4%, n = 81/164) and health promotion assistance (54.0%, n = 88/164).

The two largest barriers to working with an AHS were identified as lack of relationship with the AHS (57.9%, n = 95/164) and lack of financial viability for delivering clinical services to the AHS (61.6%, n = 101/164).

Home Medicine Reviews for Aboriginal and Torres Strait Islander people

Perceived Benefits

Respondents expressed high to very high agreement that an HMR would result in an increased understanding of their illness (72.7%, n = 64/88) and an increased understanding of how to take medicines (84.1%, n = 74/88). Similarly, respondents agreed that an HMR would increase the understanding of potential medication side effects (71.2%, n = 62/88), improve medication adherence (69.3%, n = 61/88), improve pharmacist-patient relationships (77.7%, n = 66/88) and would encourage patients to ask more questions about their medicines (68.2%, 60/88).

Perceived Barriers

Lack of GP referrals (74.7%, n = 121/164), lack of pharmacist time (40.5%, n = 66/164) and low financial viability (16.6%, n = 27/164) were seen as barriers to delivery of HMRs to all population groups.

Barriers to delivery of HMRs to Aboriginal patients also included difficulties in organising HMR interviews (57.4%, n = 51/88) and lack of understanding of cultural issues (49.4%, n = 43/88). Over half the respondents (52.8%, n = 47/88) also had a perception that Aboriginal patients may not want “a stranger in their home” and

<table>
<thead>
<tr>
<th>Respondent perceptions (n = 164)</th>
<th>Percentage of respondents</th>
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<tr>
<td>Not at all</td>
<td>Small to moderate degree</td>
</tr>
<tr>
<td>Lack of awareness of HMRs by GPs/AHS</td>
<td>6.8</td>
</tr>
<tr>
<td>Organising an HMR referral</td>
<td>15.9</td>
</tr>
<tr>
<td>Lack of patient interest</td>
<td>14.8</td>
</tr>
<tr>
<td>Patient not wanting a stranger in their home</td>
<td>20.5</td>
</tr>
<tr>
<td>Difficulties in organising appointments</td>
<td>13.6</td>
</tr>
<tr>
<td>Liasing with AHW/AHS</td>
<td>31.0</td>
</tr>
<tr>
<td>Understanding cultural issues</td>
<td>19.5</td>
</tr>
<tr>
<td>Liasing with patient’s doctor</td>
<td>30.7</td>
</tr>
<tr>
<td>Effectively communicating with patient</td>
<td>28.7</td>
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<tr>
<td>Providing feedback to patient</td>
<td>28.7</td>
</tr>
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</table>

HMR Home Medicine Review, AMS Aboriginal Medical Service

53.4% (n = 47/88) expressed some concern that the lack of an existing patient-pharmacist relationship could cause a barrier to the delivery of HMR services to Aboriginal patients. By far the biggest perceived barrier (79.5%, n = 70/88) was lack of awareness of the HMR program by GPs and AHS staff. Barriers to the provision of HMRs for Aboriginal patients are summarised in Table 2.

Respondents who had conducted an HMR with an Aboriginal patient identified that the GP was responsible for organising the majority of the referrals (77.5%, n = 69/88) while the pharmacist was responsible for organising the majority of the interviews (74.2%, n = 66/88). Difficulty organising an HMR referral was rated, by the majority of respondents to have a high or very high impact on the provision of HMRs. A few respondents comments indicated that they felt some GPs did not highly rate HMRs. “Prescribers do not see the benefit in a HMR and may not feel a pharmacist can add any more insight than themselves”.

Just over half of the respondents (56.1%, n = 92/164) identified lack of professional relationships with their local AHS as the greatest barrier to providing professional pharmacy services to Indigenous communities. The pharmacy-AHS relationship was identified by 39.0% (n = 64/164) of the respondents to highly or very highly impact on their ability to provide services to the AHS.

Other barriers to HMR delivery to Aboriginal patients were also suggested by respondents in their answers to the open-ended qualitative questions. These included, difficulty
allocating time for HMRs due to current work commitments, difficulty coordinating pharmacy opening times and visits to the AHS, excessive amounts of paper work, restrictive program rules and inconsistent HMR demand.

While some respondents indicated that they felt visiting Aboriginal patients’ homes was not always culturally appropriate, most of the HMRs (83 %, n = 73/88) that had been conducted by respondents had been performed in the home of the patient, and were by appointment (88.6 %, n = 78/88), as per the HMR program regulations. However a few respondents indicated that as regulations make it very difficult to conduct HMRs in a venue other than the home that many patients were opting not to use the service.

By far the main barrier to doing HMRs in this area is the unwillingness of Aboriginal people to have visitors in their homes. The only viable method of doing HMRs for Aboriginal people in this community is on an opportunistic basis in the pharmacy. But this is not allowed.

The majority of respondents (69.5 %, n = 114/164) indicated that they had never received any form of cultural awareness training or training relating to Aboriginal health or engagement with Aboriginal patients. Approximately half (49.4 %, n = 43/88) of respondents felt that their lack of understanding of cultural issues impacted to a moderate to high degree on their ability to conduct HMRs for Aboriginal patients.

Facilitators to HMR

Greater involvement of AHS staff in the HMR process was seen as a facilitator for HMR delivery to Aboriginal patients. Although AHWs played no role in close to half of the HMRs (46.6 %, n = 41/88) which had been conducted with Aboriginal patients study participants expressed their desire for greater AHW or AHS nurse involvement, stating:

“It would be great to have the nurse and a health worker present during interview and involved in follow-up discussions, especially regarding disease management and continuity of care.”

When AHWs were involved in HMRs it was to liaise with pharmacists and patients (38.6 %, n = 34/88), to help organise HMR (22.7 %, n = 20/88), to help in the follow up process (17 %, n = 15/88) or to act as an interpreter (10.2 %, n = 9/88).

The majority of respondents (90.8 %, n = 79/88) believed that allowing an AHW or AHS nurse to write HMR referrals would facilitate more HMRs being performed for Aboriginal patients, especially when GPs were time poor and where there was high reliance on locum GPs. Participants commented that.

The GPs want more HMRs done but don’t want to have to do all the paperwork. It would be great if AHWs and nurses could write the referrals as they know which patients would benefit and usually have more time than the GPs.

Most respondents felt that it was appropriate for AHS nurses and AHWs to be involved in the referral process as “the nurses and AHWs are closer to the patient and are more likely to identify medicine issues.”

A small number of respondents reflected the opinion “working at the AHS would be a great job. I could make a real difference. It is a pity that there is no funding to support this.”

Discussion

Although the respondents in this study were HMR accredited pharmacists who conducted regular HMRs, over 70 % of respondents had conducted fewer than five HMRs for Aboriginal people in the last 3 years. These findings endorsed those in earlier government reports which identified that very few HMRs have been performed for Aboriginal and Torres Strait Islander people [16, 17]. In 2013 approximately 107,000 HMRs were conducted across Australia [18]. However, there are no available statistics on how many of these were conducted for Aboriginal and Torres Strait Islander people.

More than half of the respondents had no contact with their AHS and very few had been involved in Aboriginal patient interaction, yet many of the pharmacists who participated in this study wanted to interact with their local AHS and staff. This reflects similar studies which indicate that pharmacists are keen to work more closely with mainstream GP practices and deliver inter-professional healthcare, yet are unsure as to how to facilitate the process [19, 20]. Studies have found that pharmacists are not confident in clinical decision making, largely due to personality type and professional training [21–23]. More investigation is needed to explore whether these factors influence pharmacists’ ability to engage with other health professionals and build relationships with other primary health care organisations.

The respondents expressed an interest in delivering clinical services to the AHS if they could make the services financially viable. Respondents expressed the need for a suite of services for which they could be remunerated or the need for salaried position within an AHS or GP practice to enable viability, sustainability and relationship building. Currently the HMR program is the only clinical service in Australia for which a pharmacist can claim financial reimbursement from the Government.
Pharmacists received $194.07 (AU) remuneration for an HMR service (in 2014) [1] but have suggested in this study and in other evaluations that HMRs are not financially viable due to the large amount of time required for HMR administrative costs [16, 17]. This lack of financial viability is exacerbated when the pharmacist has to travel large distances to patients’ homes, especially in rural areas; when a pharmacist has to apply for a prior approval so that they can conduct an HMR outside a patient’s home; when a patient has multiple co-morbidities, multiple health care providers and complex medication regimens [24].

Discussions between the Pharmacy Guild of Australia and the Australian Department of Health have commenced in preparation for negotiation of the Sixth Community Pharmacy Agreement (6CPA) by July 2015. These 5 year Community Pharmacy Agreements provide remuneration and guidelines to around 5,000 community pharmacies for the dispensing of Pharmaceutical Benefit Scheme subsidised medicines and the provision of pharmacy programs and services. Revised remuneration levels and program rules for HMR will be stipulated in 6CPA and it is hoped that this study may influence policy makers that current remuneration levels for clinical services are inadequate and unsustainable. Pharmacy educators, organisations and policy makers also need to be working with the Australian Government to develop service delivery models where pharmacists are remunerated for working in inter-professional primary health care settings, such as AHSs.

The majority of respondents found the main barrier to delivery of clinical services, such as HMR to Aboriginal patients, was their lack of relationship with the AHS, despite dispensing and supplying DAAs, to the AHS and its patients. This lack of relationship with the AHS may reflect the lack of training of pharmacists in Aboriginal health and cultural awareness. The National Australian Pharmacy Student Association conducted a survey of students in 2012 which showed that students felt it was important to be taught about Aboriginal and Torres Strait Islander health issues yet many pharmacy school curricula include very little or no content on Aboriginal health or cultural awareness [25]. Respondents in this study indicated that they would like more education in issues of Aboriginal health and cultural awareness.

This study will be used to inform pharmacy schools of the need for increased cultural awareness training and Aboriginal Health education for pharmacy students. As a result of this study the main author is commencing work with the Pharmaceutical Society of Australia to develop a guide and a series of workshops for Australian pharmacists which will assist them to be culturally responsive practitioners and assist them to engage with Aboriginal Health Services.

The respondents in this study, similar to other HMR studies with non-Indigenous Australians [26, 27] indicated that two significant barriers to HMR program uptake were lack of awareness of the program by health professionals and lack of GP referrals. Studies have also found that some GPs often do not value the role of pharmacists in performing medication management review [16, 17]. Research has also suggested that due to time constraints GPs often find it difficult to fulfil the administrative requirements of HMR referrals, as the current process is complex [16]. An Ursib’s Keys Young evaluation (2005) of the HMR program found that incomplete or unclear referral forms from the GPs hindered the HMR process. This evaluation also found that the majority of accredited pharmacists believed GPs were unaware of HMRs and were reluctant to collaborate professionally with pharmacists [17].

In February 2014 a lack of funding for the HMR program, under the Government-Pharmacy Guild agreement, resulted in the number of HMRs a pharmacist being capped at 20 HMRs per pharmacist per month [1]. This capping of HMR program funding has negated the ability to promote HMRs to a wider audience despite the evidence that indicates the improved health outcomes and reduced preventable hospitalisations that result from medication reviews [2, 3, 28]. Respondents in this study strongly indicated that they believed that HMRs could greatly assist Aboriginal patients to better understand their medicines and health, and could improve medication adherence.

The views of the pharmacists in this study reflected the views of Aboriginal patients in a recent study [13] which indicated that barriers to HMR for Aboriginal patients included the “home setting”, and the complex referral and interview arrangements. The pharmacist respondents noted the need for a closer relationship with the AHS and the AHS staff, to ensure successful implementation of the HMR process. This confirms previous studies which emphasise the important role the AHS plays in delivering primary care to Aboriginal people [29–31].

Respondents acknowledged that GPs in AHSs are often overloaded or are transitory, and thus nurses and AHWs are often the primary contact with patients. Respondents strongly endorsed greater involvement of AHS nurses and AHW in the HMR process, from initial referral to follow up post pharmacist intervention. The vast majority of pharmacists surveyed suggested allowing AHWs or AHS nurses to write HMR referrals and play a more key role in the HMR process to help facilitate good communication during the HMR interview and to aid in the administration procedures of the interviews and follow ups [13].

The expanded role for AHS staff and the ability to conduct an HMR in a setting other than the home, were also identified as facilitators to increasing the number of HMRs for Aboriginal by Aboriginal patient participants in a previous study [13].

This study will be used to advise 6CPA negotiations of the needs for changes to HMR program rules and suggest
new and more appropriate medication review models for Aboriginal and Torres Strait Islander people. The new models will suggest that medication reviews for Aboriginal and Torres Strait Islander people be uncapped in number, allow referrals from nurses, AHWand doctors, and allow flexibility of location.

The issues of financial viability, lack of GP referrals and lack of program awareness were consistent with barriers identified by pharmacists in HMR studies with other population groups. The lack of ability to build relationships with Aboriginal health Services is a unique finding of this study and needs further investigation.

Limitations

Some of accredited pharmacists who were not regularly working with Indigenous patients were reluctant to participate in the survey. Several pharmacists contacted the authors to support the work but believed they could not contribute to the survey as they did not work with Aboriginal patients. Consequently there was a limited sample and the results of this study may underestimate the barriers to performing HMRs for Aboriginal Australians.

This study does not analyse the views of pharmacists working with AHSs who are not accredited to perform HMRs. Non-accredited pharmacists may be providing pharmacy services to AHSs however their views on the barriers and the facilitators to providing pharmacy services for Aboriginal Australians have not been captured in this study.

Conclusion

This study showed that HMR accredited pharmacists are currently providing very limited clinical pharmacy services to Aboriginal Australians. Accredited pharmacists were very keen to provide more services to AHSs. However, need assistance and training to overcome the barriers which are inhibiting them working more closely with AHSs and AHS staff are needed. Pathways and mechanisms to facilitate increased relationship building between pharmacists and other health professionals, and with primary care organisations, such as AHSs, need to be further investigated.

Increased promotion of the HMR program, GP education, increased and consistent financial remuneration to pharmacists, changes to the HMR referral process, improved relationships between pharmacists and AHS staff, and increased involvement of AHS staff in the HMR processes are needed, to increase HMR delivery to Aboriginal and Torres Strait Islander peoples.

Future government policies need to support and encourage pharmacists to conduct medication reviews for Aboriginal and Torres Strait Islander patients.

Acknowledgments
We would like to thank accredited pharmacists who participated in this survey.

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Conflicts of interest
No conflict of interest exists for any of the authors.

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13. Swain L, Barclay L. Exploration of Aboriginal and Torres Strait Islander Perspectives of Home Medicines Review. Submitted to Rural Remote Health February 2012.


Table 2 Most common perceived benefits and barriers of the HMR program (Continued)

<table>
<thead>
<tr>
<th>Benefit/Barrier</th>
<th>GP Perception</th>
<th>Nurse Perception</th>
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<tbody>
<tr>
<td>Lack of financial reimbursement</td>
<td>It should be the AMS who is doing all the organizing who gets a cut, not the pharmacy.</td>
<td>It is very important to the process. They need to be reimbursed for their time, just like the pharmacists and GPs.</td>
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</table>

All the GP interviewees commented that the biggest barrier to writing HMR referrals was "being pushed for time," and half of the GPs felt that writing an HMR referral was a barrier as it was "just another bureaucratic, red tape thing to do when you're seeing patients". Patients at the AHSS often had complex co-morbidities, and although most interviewees agreed that HMRs were desirable, the GPs felt they had "to sort out the multiple things a patient presents with, do a GP plan and a team arrangement and a health check first. An HMR is just another thing on a list of things that you know you need to do". At times some felt they were "snowed under with the acute stuff before you even get to the chronic stuff". In the three AHSSs where GPs were writing regular HMR referrals they had found other staff members to assist the process, and one commented, "It takes time to offer and explain it [HMR] and do the referral. That is just too onerous to fit into an appointment. So get the health worker to do it."

The eight GPs who were not regularly referring patients for HMRs made comments which reflected their wish to protect their clinician-client relationships. "There are lots of practitioners with lots of clinicians involved already" and "We need to make sure we are not overburdening them [the patients] with our efforts." These GPs particularly showed some uncertainty about referring their patients to a pharmacist, indicating a lack of GP-pharmacist relationships. Five GPs perceived that their local pharmacists were too busy to do HMRs commenting, "we think that some pharmacists are too busy. I guess we worry that the pharmacist might not be very receptive." Two GPs had had their HMR referrals ignored or returned by pharmacies. "I was sending off referral letters and nothing happened." Seven of the GPs commented that pharmacists needed to be culturally sensitive, have some cultural training and/or show an interest in working with Aboriginal people before they would feel comfortable referring their Aboriginal patients to them. Comments included, "I am not sure how culturally aware the pharmacists are" and "If we [the AHSS] had a relationship with a particular pharmacist who we knew our people were comfortable with that would really help." The nurses also felt that the lack of a pharmacist-client relationship was problematic, stating, "It's not very often that you will have a relationship between the client and the pharmacist." Conversely, in the AHSSs where pharmacists had been contracted, the pharmacists were highly valued and regarded. "They [the GPs] really like having the pharmacist here. The doctors specially allocate time when she is here for the day. Now that they have built up a rapport the doctors will actually ring her up and ask her questions about medications." The AHWS also commented, "It would be important for the pharmacist to have some cross-cultural training. For them to be good at it, for it to be worthwhile, they need proper cultural training. That would be key." A few of the interviewees bemoaned the lack of Aboriginal or Torres Strait Islander pharmacists. The majority of AHWS commented on their clients' lack of understanding of the pharmacist's role and on their lack of established relationships with the local community pharmacists.

The GPs, nurses and AHWS all showed some misgivings about a pharmacist visiting an Aboriginal or Torres Strait Islander person's home. "I think sending a pharmacist cold to a patient's house is inappropriate," and "many Aboriginal people are not comfortable with non-Aboriginal people going to their home." Half the GPs did, however, state a preference for the HMR interview being conducted at the patient's home whenever possible as they cited the advantage of being "able to see what is really happening" and that "one of the great benefits is seeing the context at home. So it would be a shame to lose that". However, most felt that although "It is better if it happens at the home. I wouldn't want them to not get an HMR just because the home is not appropriate or suitable", and some believed that it was...
preferable to “have something in the clinic where they’re used to coming”. A couple of interviewees also commented that having a pharmacist at the clinic would assist in establishing relationships among GPs, pharmacists and AHWs and would allow valuable case conferencing and discussion about patients.

Despite most of the GPs at first stating that HMRs could be beneficial in assisting their patients to manage their medicines, later in their interviews, half the GPs from the AHSs where HMRs were not occurring, showed some scepticism about the value of HMRs. Two of the 11 GPs perceived that “if patients had concerns about their medicines they would come and talk to us (GPs) about it”. These GPs appeared to doubt the need for HMRs as they felt they adequately dealt with medication issues themselves, saying, “I do a lot of it [medication education] myself actually” and “I believe it is my role to talk to patients about their medicines.” Three GPs also expressed concern that their patients “might not see the value in it” and stated, “the doctors spend a lot of time dealing with medicines. So it might be seen as doubling up.” The majority of GPs who were not ordering HMRs felt that currently “the process isn’t in place for it to happen”.

The AHWs perceived that their lack of awareness and their clients’ lack of awareness of the HMR program contributed to the low uptake of HMRs by their communities. Some also commented on the lack of continuity of GPs and the number of health checks already being conducted as barriers to implementing another program, such as HMR, in their health services.

“Need someone to be the main organiser”
All the AHS health professionals interviewed agreed that for HMRs to become a regular occurrence at their AHSs it required “having someone at the health service allocated to encouraging the HMR, co-ordinating it, blocking out time for GPs to do the referral, taking on the role of doing the consent”. They all agreed that this role should be done by a senior health worker or a nurse who really understands the process. Each of the three AHSs where HMRs were being done had a “co-ordinator to organise all the logistics”. One AHS used the chronic care co-ordinator nurse, another an AHW dedicated to Quality Use of Medicines and the third a salaried pharmacist to organise their HMRs.

Explaining the process to the patient and brokering trust in the process was seen as an important in the success of the program with Aboriginal and Torres Strait Islander patients. The GPs explained, “Someone who is well known to the patient, such as a health worker, needs to ring and explain the process,” and “I think if the health worker is the first port of call and clearly explains everything, then I think people will take it up.”

Across the health professional groups there was discussion regarding how best to manage the extra work load that HMRs would create. Most agreed that there should be health workers specifically employed as chronic disease health workers or even specifically as medication specialists, and part of their role should be facilitating the HMR process. All agreed, “the AHS should be able to claim something for their [the organiser’s] time” and that “it should be the AHS who is doing all the organising who gets a cut, not the pharmacy”.

Most GPs agreed an AHW should accompany a pharmacist to a client interview to broker cultural trust because “it provides an opportunity to up-skill the health worker”. Most commented that the health worker or the AHS should receive financial reimbursement for the health worker’s time, in alignment with the fees received from the Government by the GP and the pharmacist. Many interviewees felt the organising health workers should also be the ones attending the interviews.

“Would be better if someone else could refer”
A few of the GPs showed a lack of confidence and knowledge about who was eligible for an HMR, about how to write a referral, and about the HMR process itself, as indicated by their comments, “so you don’t have to wait until they are on 5th medication to order an HMR” and “It takes a while to make sense of the steps”. All the GPs, nurses and AHWs agreed that “it is not practical for the patient to have to take the referral to the pharmacy”. Most of the GPs indicated that as they were time-poor, they would be happy for a health worker or nurse to organise the HMR and even write the referral, or alternatively “we could do the referral retrospectively”. The AHWs iterated their willingness to initiate referrals: “we know the patients best. So it would make more sense if we organised the referral.”

The nurses and AHWs believed that it was crucial that the AHS select and refer to a specific pharmacist known to the AHS, with whom they had a relationship and who had been assessed by the health service for their cultural sensitivity. The GPs also expressed the need to establish rapport with a trusted and culturally appropriate pharmacist before they would refer their patients.

“The model needs to be changed”
In addition to changing referral pathways, having the AHS organise the HMR, and having an AHW attend the HMR interview, GPs also suggested other changes to the HMR model. These included the pharmacists providing patients with a brief follow-up report that also prompted the patient to make an appointment with the GP to discuss the report, as “it is a very important step when the
patient sits down with the GP and makes the changes that are needed". Many lamented that often HMR patients did not revisit the clinic to discuss a revised medication plan with the GPs.

Half the study participants mentioned that HMRs should be incorporated into the Aboriginal health assessment process, or be part of the existing GP management plan. A number of health workers also stated that the HMR program would work best if it was a "flexible model where you can work in with existing programmes rather than trying to develop a whole other system of doing things". The AHWs suggested pharmacists should join in existing groups, run by the AHS, such as cardiac rehabilitation, cooking or diabetes groups or "run alongside a chronic disease clinic that's happening on the day". Most of the AHWs mentioned that group meetings would be favoured by many clients, and so group HMRs should be an option.

All interviewers agreed that for the HMR program to work within their AHSs it needed to be simplified. At present there are "way too many steps". It also needed a systematised approach to ensure HMR referrals were written, interviews organised, and patients followed up. "It needs something set in place so that it can be done regularly." The HMR system required a "driver" who was not too overburdened with other duties, preferably an AHW dedicated to chronic disease and medicines. All the AHWs interviewed stated that advising patients about medicines was a key part of their role and that they would like more training in this area.

The AHWs suggested that AHSs need to promote the HMR program and inform their clients of the steps involved, through pamphlets and posters in the AHSs.

The GPs and AHWs suggested changing the name of the HMR program. "The title is not good as some patients don't like that home bit. Some don't like strangers coming to their home. It needs an Aboriginal title or at least a bit more of a friendly title."

Figure 1 summarises the recommendations for a revised, more culturally appropriate HMR model. It is hoped that the findings and recommendations from this study will inform the Sixth Community Pharmacy agreement on HMR program rules for Aboriginal and Torres Strait Islander people.

**Discussion**

Previous research has shown that consumers identified improved medicine information, feeling cared for, and increased confidence to discuss medicines with their GPs, as potential benefits of an HMR [8, 9]. In this study, the perspectives of the nurses and GPs who had experienced HMRs, and the perspectives of all the AHWs, strongly supported the findings from research with consumers, as they, too, identified that increased medicine knowledge and empowering consumers to make medicine choices were the major HMR benefits. Although the majority of GP participants, especially those who had experienced HMRs, agreed that HMRs could assist their understanding of their patients' medicine practices and provide clinical support, very few HMRs were being ordered. The GPs were only referring their patients for HMRs in three out of the 11 AHSs in this study.

The 2008 Campbell report identified that GPs need assistance with the structure related to HMRs and that an HMR is very dependent on the relationship between GP and pharmacist [5]. This study reinforced this need for structure and relationship, with HMRs only occurring in AHSs where structure had already been established, with an AHS staff member "driving" the process and where a pharmacist-AHS relationship had been established. This study also reinforced the Campbell report findings that an HMR was not seen as being high on the list of priorities for GPs, due to competing demand for GP time; as a result the HMR program existed in isolation rather than in parallel with other Medicare items [6]. The participants in this study reiterated that the HMR program workload needed to be shared and a team approach adopted, especially in areas where there were medical workforce shortages.

This study confirmed a number of the barriers to provision of HMR services identified in previous studies by both consumers and stakeholders. These included complexity of program rules, concerns regarding home visits, lack of information about the program, GP workload and GP fears of pharmacists encroaching on their professional space [5, 7–9]. It also identified a number of barriers specific to Aboriginal and Torres Strait Islander clients. These included paternalistic attitudes of health professionals to clients, heightened protection of the GP-client relationship, lack of AHS-pharmacist relationships, need for more culturally responsive pharmacists and the lack of recognition of the AHS's role in implementation of culturally effective HMRs.

One quarter \((n = 4)\) of the non-Indigenous health professionals \((n = 16)\) interviewed, demonstrated paternalistic or racist attitudes to their clients, claiming that their clients were uninterested or incapable of learning more about their medicines and thus not suitable for HMRs. This directly contradicts research conducted with the Aboriginal and Torres Strait Islander patients and the AHWs at the same AHSs. The majority of patients at these AHSs were extremely interested in learning more about their medicines and very supportive of having HMRs [8, 10]. The AHWs strongly believed their clients would benefit from HMRs as long as the
Fig. 1 Suggested model for medication review for Aboriginal and Torres Strait Islander people.
HMRs were conducted in a culturally appropriate manner. The small sample of non-Indigenous health professionals interviewed does not allow for extrapolation across the AHS workforce but does support previous work which suggests that GPs and non-Aboriginal staff at AHSs would benefit from cultural mentoring [11]. These attitudes require further investigation to assess whether some health professionals at AHSs may require screening or further cultural training.

The majority of the GPs interviewed in this study were very protective of their client-physician relationships, with much of the GP concern related to not overloading the patient with information and too many appointments. Further research is needed to ascertain whether this concern about "overloading" the patient is culturally influenced. There was also considerable concern from the AHS GP and nurse interviewees that pharmacists may be culturally insensitive and thus, by association, may damage patient trust. Only at the AHSs (n = 3) where a pharmacist was contracted or embedded was there a real understanding of the clinical role of the pharmacist. The lack of relationships in the AHS staff, including the GPs, with any pharmacists, including their local community pharmacists, appeared to be a major barrier to the initiation of HMRs. The lack of relationships with AHSs was also noted by pharmacists themselves in recent research [7]. This supported previous research which suggested that lack of face-to-face interactions and established relationships between GPs and community pharmacists may be significant barriers to collaboration [12]. It appears that significant work is needed to build bridges between pharmacists and GPs, and between pharmacists and AHSs, and to provide cultural training for pharmacists. Pharmacy organisations are currently lobbying the Commonwealth Government to fund salaried pharmacists within AHSs to enable culturally trained pharmacists to develop relationships with AHSs and their clients [13].

All the interviewees agreed that for many of their Aboriginal and Torres Strait Islander clients to feel confident in engaging with HMRs, the HMRs needed to be organised and facilitated by AHS employees. This was also the finding of recent research which examined the views of Aboriginal and Torres Strait islander patients who also identified the need for the option of having an AHW attend the HMR interview [8]. Despite the acknowledgment by the Australian Government that pharmacies organising HMRs are entitled to a fee [4], there has been no acknowledgment of reimbursement for AHSs, which fulfill an even larger role in HMR facilitation for Aboriginal and Torres Strait Islander people.

The AHWs in this study identified the need for AHSs to have AHWs who specialise in assisting patients with medication management and who could facilitate the HMR process. Most AHWs were keen to undertake further training about medications as they saw assisting patients with their medications as an important part of their role. In the AHSs (n = 3) which were initiating HMRs, a number of the AHWs were identifying patients and organising HMR referrals. All interviewees, including the GPs, were keen for nurses and AHWs to be allowed to write HMR referrals, seeing it as unnecessary for GPs to be involved in this process. Another study has requested that community nurses be allowed to refer patients for HMR [14]. A one-off HMR every 12–24 months was not seen as ideal. For complex patients with multiple medications, regular interactions with pharmacists to reinforce medication messages is needed.

Despite the Australian Government's commitment to improving the health and wellbeing of Aboriginal and Torres Strait Islander Australians and to closing the health inequality gap [15], Aboriginal and Torres Strait Islander health status remains poor, and burdens of chronic diseases, such as respiratory disease, diabetes and cardiovascular disease, remain very high [16]. A number of studies have identified that medication management is an important issue which urgently needs to be addressed if the progression of chronic disease and all the associated complications are to be slowed [10, 17–19]. Although the Australian Government has implemented a number of programs to assist Aboriginal patients with financial barriers to accessing medicines, recent changes to the HMR program rules have increased the barriers to accessing HMRs, and thus exacerbated issues of medication management, efficacy, safety and adherence. Changes to the HMR program have purposely been implemented to curtail the number of HMRs being conducted to reduce expenditure in a program with a capped budget [4]. These program changes have disproportionately affected those most in need, i.e. Australia's sickest people, the elderly, rural people and Aboriginal people [6].

The VALMER study was an economic evaluation of the HMR program by the University of Tasmania, which analysed 180 HMRs across Australia. It concluded that HMRs could significantly decrease healthcare utilisation costs as well as improve patients' quality of life [20]. Overall healthcare savings and benefits should be taken into consideration when funding for the HMR program is assessed and guidelines rewritten in the Sixth Pharmacy Community Agreement 2015. New health models, such as shared medical appointments, which use group consultations to improve patient health, should be used to inform new HMR modelling and maximise outcomes from expenditure [21, 22]. Recommendations from this study and from the 2008 Campbell evaluation report should be considered in developing an HMR model which is effective and culturally appropriate for Aboriginal and Torres Strait Islander people.
Study limitations
The sample of AHS health professionals who were interviewed was small, and the representation of each profession even smaller, and therefore findings cannot be extrapolated to all AHS employees or across professions. The views of health professionals who work with Aboriginal and Torres Strait Islander people in settings other than AHSs were not sought. However, internal validity and reliability was achieved by asking questions about the same issues numerous times, in appropriate, non-leading ways, with this method yielding similar findings in a range of different settings. Many of the findings in this study endorsed results from research undertaken with Aboriginal and Torres Strait Islander patients [8] and pharmacists working with AHSs [7].

Conclusion
Increasing HMRs for Aboriginal and Torres Strait Islander people has the potential to increase patients’ medication knowledge and medication adherence and thus improve chronic disease management [8]. The HMRs teach health service staff about their patients and about medications, and provide GPs with invaluable information which assists them to more optimally manage their patients’ medications and health.

Currently, very few HMRs are being conducted with Aboriginal and Torres Strait Islander people, largely due to lack of awareness, the paternalistic attitudes of some health professionals and the logistics of navigating the HMR program rules. The GPs at most AHSs are writing very few HMR referrals due to the complexities of patients’ needs, shortage of time, and lack of trust in pharmacists’ ability to appropriately manage their patients.

The AHSs, as the trusted brokers of Aboriginal social, emotional and physical wellbeing and with their understanding of community history and relationships, are well-placed to be the promoters, organisers, facilitators and implementers of health programs, such as HMRs, for Aboriginal and Torres Strait Islander clients. Within AHSs, staff juggle numerous programs and funding streams, and so the HMR program needs to be simplified and integrated within existing programs, and have “champions” in each health service to promote and drive the program.

The name of the HMR program and the myriad of HMR rules need to be changed and simplified. Referral, feedback and follow-up processes in particular need to be revised. Much work is needed to improve GP-pharmacist professional relationships and pharmacist-AHS relationships. The GPs, nurses and AHSs who have no previous experience with HMRs have little or no understanding of the role of the pharmacist. A big-picture approach is needed in the restructuring of the HMR program, using evidence-based decision-making and Aboriginal community consultation.

Embedding pharmacists within AHSs, even in a part-time capacity, is a solution which addresses many of the barriers to HMRs which have been identified in this study. It enables the HMR program to be integrated with other services and assists GPs to offer optimal medication therapy. It ensures pharmacists are culturally mentored and that they build strong relationships with health professionals and patients. It encourages regular “coaching” of patients to assist medication adherence. If the Australian Government is to honour its commitment to improve Aboriginal and Torres Strait Islander health it needs to fund an uncapped medication review program and embed salaried pharmacists within AHSs.

Abbreviations
AHS: Aboriginal Health Service; AHW: Aboriginal Health Worker; GP: General practitioner; HMR: Home Medicine Review; MR: Medication review.

Competing interests
The authors declare that they have no competing interests, either financial or non-financial.

Authors’ contributions
LS conceived of the study, collected and analysed all the data and wrote the manuscript. LB supervised the study, contributed intellect and experience to data collection and analysis, revised the manuscript and contributed important intellectual content. Both authors approved the final manuscript.

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