

Indigenous Asthma Innovative Management Project

'Putting Asthma In The Picture'

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**Pika Wiya Health Service
Incorporated**



**Port Augusta Hospital and
Regional Health Services
Incorporated**



**Department of General Practice
Adelaide University**



Asthma SA



**South Australian Centre
for Rural and Remote
HealthX**



**Northern Regional
Paediatric Unit**



University of South Australia

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Funded by
Commonwealth Department of Health and Ageing

ISBN 0 86803 989 6

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This report is funded by Asthma Innovative Management Projects' grant monies under the Health Industry and Investment Division of the Department of Health and Ageing.

The views expressed in this report do not necessarily reflect the views of the Department of Health and Ageing.

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Acknowledgements

The collaborative AIM Project team would like to acknowledge and thank the following organisations that have contributed to the successes of this endeavour:

- ✧ The Department of Health and Ageing for funding this project under the Asthma Innovative Management Project scheme.
- ✧ Asthma NT, Flinders University School of Nursing and Danila Dilba Aboriginal Medical Service who developed and produced the *Short Wind* Indigenous asthma education resource utilised in this project.
- ✧ Asthma SA for the high quality Asthma Education and Training Workshops conducted by Mr Nigel Cooper during this project
- ✧ Northern Regional Paediatric Unit for allowing the project team to utilise its resources as a basis for developing resources at Pika Wiya Health Service.
- ✧ Pika Wiya Health Service Incorporated for choosing to undertake the project whilst also coordinating many other programs and projects as South Australia's largest rural Aboriginal Medical Service.

Acronyms

- ✧ AHW – Aboriginal Health Worker
- ✧ AMS – Aboriginal Medical Service
- ✧ CPHC – comprehensive primary health care
- ✧ GP – General Practitioner
- ✧ NAAP – National Asthma Action Plan
- ✧ NAC – National Asthma Council
- ✧ OATSIH – Office for Aboriginal and Torres Strait Islander Health
- ✧ PIP – Practice Incentive Program
- ✧ PWHS – Pika Wiya Health Service
- ✧ RN – Registered Nurse
- ✧ SA – South Australia
- ✧ SACRRH - South Australian Centre for Rural and Remote Health

Executive Summary

The Asthma Project "Putting Asthma In The Picture" was one of twenty-five Asthma Innovative Management (AIM) Projects sponsored by the Commonwealth Department of Health and Ageing in 2002 - 2003. Furthermore, it was one of four such AIM projects undertaken with Indigenous communities as the target population.

This Asthma Project aimed to address the barriers to effective asthma management in a rural Indigenous community, develop and test a method of implementing National Asthma Council (NAC) guidelines using Indigenous-specific resources and strategies, and develop a best practice model for asthma management in the Indigenous health service context.

It was a multi-disciplinary project centred around Pika Wiya Health Service Incorporated (PWHS), an Aboriginal Medical Service (AMS) in Port Augusta, South Australia. The project was conducted in collaboration with various partner organisations including Port Augusta Hospital and Regional Health Services Incorporated (including Accident and Emergency, general wards and the Northern Regional Paediatric Unit), Asthma SA, Adelaide University's Department of General Practice, University of South Australia, and the Spencer Gulf Rural Health School (an incorporated organisation including the South Australian Centre for Rural and Remote Health).

The project attempted to utilise mainstream strategies such as the National Asthma Council's (NAC) 3+ Visit Plan, as well as *Short Wind*, an Indigenous-specific asthma education and health promotion resource produced by Asthma NT in collaboration with Flinders University School of Nursing and Danila Dilba Aboriginal Medical Service in the Northern Territory. Thus, an important aspect of the project was building on Indigenous resources and mainstream resources currently available, whilst identifying gaps in existing resources and strategies that are appropriate and meaningful for the Indigenous population.

Prior to this project, PWHS managed clients with asthma through a general practitioner (GP) directed model with a registered nurse (RN) employed three hours per week to provide asthma education to clients. In the previous 6 months a total of 28 clients had been registered with the RN in the Asthma Clinic. None of these clients had had an individualised Asthma Action Plan developed due to lack of client attendance at multiple education sessions and lack of available resources.

The Asthma Project developed a model of care that was focussed around the role of the Aboriginal Health Worker (AHW) as the primary caregiver. The 3+Visit Plan strategy was followed, with the client first assessed by the GP for diagnosis and medication review, prior to undertaking the remainder of visits with an AHW and/or RN, with check-ups by the GP at every visit if the client consented to this.

Following the collaborative planning day at the beginning of the project, an AHW was recruited to the position of Asthma Clinic AHW. Also, Asthma SA undertook comprehensive education and training of PWHS AHW's and Port Augusta Hospital and Health Service nurses in current asthma management

protocols. During these education days the first draft of the Pika Wiya Every Day Asthma Action Plan was compiled with the help of the Asthma SA educator.

In order that the clinic processes being developed at PWHS could become self-funding (and thus sustainable), the project attempted to use the Department of Health and Ageing's Practice Incentive Program (PIP). This PIP encourages GP's to manage patients using the 3+Visit Plan strategy by providing financial incentives. However, it soon became apparent that the strategies developed for 'mainstream' Australia were not always appropriate for the rural Indigenous AMS setting. Firstly, the PIP payments are dependant on clients attending appointments with a GP for each of the three visits, which clients of PWHS simply refused to do (preferring to access services provided by AHW's, and in some cases preferring home visits).

The Asthma Action Plan (NAC, 2002) outlined in the 2002 National Asthma Handbook was also considered inappropriate for the Indigenous clientele of PWHS, due to its complex written English language. Thus, a Pika Wiya Every Day Action Plan was designed, tested and re-designed throughout the project lifecycle, being professionally produced at the conclusion of the project.

The operations model of the Asthma Clinic was regularly reviewed and modified throughout the project to meet the needs of the community. Initially the clinic was focussed around PWHS town clinic. Due to poor client attendance, an Asthma Clinic day at Davenport clinic (a community setting 6 km out of Port Augusta) was experimented with, which proved to be a success. Clients seemed to prefer the more relaxed environment at Davenport Clinic that has a more informal structure and a 'drop-in' approach. Home visits were utilised throughout the period for clients who were recognised as poor attendees. Transport was also arranged for clients who could not access their own methods of travel, to encourage attendance at scheduled follow up visits.

The clinic formally began at the beginning of September 2002, following extensive planning, development of documentation and referral systems. At the end of this AIM project period at the beginning of April 2003, a total of 33 clients had been registered in the clinic, with 20 of these completing three visits and having had a Pika Wiya Every Day Action Plan developed. Some clients had accessed the clinic up to five times during this period due to voluntarily presenting to the clinic outside of scheduled visits. Considering that the 28 clients registered in the first 6 months of 2002 had been seen only once, if at all, the completion of twenty 3+Visits is a noteworthy accomplishment by the Asthma Clinic staff.

Poor client attendance at appointments was an ongoing issue throughout the project. Clients appeared to place less importance on long-term management goals, and more importance on short term 'fixes' such as obtaining reliever medication. At times clients became agitated when they were informed that they could not obtain medication without registering in the Asthma Program for a formal review. Thus a long-term health promotion approach needs to be instituted in order to bring about an attitude change in the local community, to reach an understanding of the importance of long-term management strategies and asthma symptom control.

Numerous barriers, both local and national, were identified during the course of the project and were addressed where possible. Local barriers included the poor rates of client attendance at scheduled appointments; changes in management staff and a general lack of management infrastructure at PWHS resulting in a lack of guidance and support to the Asthma Clinic AHW; lack of experience of the AHW coordinating the Asthma Clinic (he was newly qualified); and the lack of referral systems and coordination between programs at PWHS.

National barriers to management of asthma in rural Indigenous communities also impacted on this Asthma Project. They included the inappropriateness of mainstream strategies and resources (E.g. 3+Visit Plan, NAC Action Plan); lack of accessibility to funding opportunities through the Practice Incentive Program due to clientele refusal to see GP's; lack of access to MBS items for services provided by registered nurses (RN's) and Aboriginal health workers (AHW's); the lack of previous research undertaken on interventions for Indigenous people with asthma; and the short-term nature of AIM project funding that inhibited the development of sustainable systems (E.g. ongoing employment of Asthma Clinic staff).

Due to these barriers, a significant proportion of time during the project period was invested in developing and producing appropriate resources (E.g. Pika Wiya Every Day Asthma Action Plan), establishing a clinic process that both health professionals and clients accepted, and building relationships between organisations. Thus, much time was spent on establishing processes, pathways, relationships and resources, which limited the amount of time that could be invested on promoting the clinic and recruiting new clients. However, the team attempted to advertise the clinic through a range of mediums such as poster advertising at the hospital, producing Asthma Clinic pamphlets to distribute at a health promotion day at Davenport community, through letters from the Division of General Practice (to other general practices in town) and through local radio advertising.

The short-term nature of this project is counter-effective to comprehensive primary health care strategies that focus on long term change at the community level (Rifkin and Walt, 1986). The importance of comprehensive primary health care strategies in Indigenous health care services is recognised in the document *Better Health Care – studies in the successful delivery of primary health care services for Aboriginal and Torres Strait Islander Australians* (DoHA, 2001). Recognising the project's many successful outcomes, it is also important to highlight that the timeframes of the project were simply too short to cement referral systems, processes and create sustainability in staff and financial sources. For example, the AHW employed to coordinate the clinic could not be offered a further contract and has since left the health service, taking with him valuable knowledge. The team understands that the health service itself needs to take responsibility for the development of the program, but wishes to highlight that ongoing support following the conclusion of the project period would have been beneficial.

One strength of this project is the relationships that have developed between the collaborating organisations. A pattern of referral to the Asthma Clinic has been developed from the Port Augusta Hospital and Regional Health Service as well as from other general practices in the city. Also, PWHS has developed a relationship with Asthma SA, who will return to the health service this year for an update of AHW asthma education. PWHS is currently attempting to incorporate

the Asthma Program into core business functioning utilising general clinic staff. This is in the absence of the AHW most trained in processes and procedures.

This AIM Project report, with its myriad of lessons outlined, will be made available for access by AMS's across the country in order that other Indigenous communities can learn from this endeavour. Whilst it presents more questions than it answers, it is at the very least one step towards achieving improved outcomes for Indigenous Australians with asthma.

The project team would like to thank the Department of Health and Ageing's investment in this AIM project, which enabled the identification of barriers to effective management of asthma in a rural Aboriginal Medical Service, and the production of indigenous-specific resources. The team hopes that the Department will learn from difficulties faced by this project and use lessons learnt to improve services and resources for Indigenous Australians with asthma.

1.0 Introduction

This is the final report for the Asthma Innovative Management Project "Putting Asthma In the Picture", known to the collaborative team simply as the "Asthma Project". This project is funded by the Commonwealth Department of Health and Ageing. The project, initiated in June 2002, concluded in April, 2003. This report outlines the aims and objectives of the project, the extent to which these were met, and the extensive work of the collaborative team during the lifecycle of the project.

Asthma was identified as a national health priority area in Australia in 1999 following the 1996 introduction of the National Health Priority Areas Initiative (NHPAI). The initiative was developed in Australia in response to the World Health Organization's global strategy on health reform outlined in the report 'Health for All in the 21st Century' (DoHA, 2002). The NHPAI currently encompasses six priority areas including cardiovascular health and stroke, cancer control, diabetes mellitus, mental health, injury prevention and control and asthma (NHPAC, 2002).

The Australian government has formed various committees and associations (including the National Asthma Council [NAC], Asthma Australia and its state subgroups, and the National Asthma Reference Group [NARG]) in order to advise, implement and monitor a multitude of initiatives that aim to improve the health status of Australians with asthma. The government also made available in the 1999-2000 budget \$8 million over three years for new national initiatives in asthma. The National Asthma Action Plan 1999-2000 (NAAP) was developed in order to provide guidance for how this allocated money should be spent in order to produce maximum impact (DoHA, 2002).

The NAAP identified priority population groups for asthma, with Aboriginal and Torres Strait Islander (ATSI) peoples highlighted as one of these. The plan recognised 'the need for an approach to asthma that takes into account the historical, social, environmental, economic and cultural issues that affect Aboriginal and Torres Strait Islander communities' (DHAC, 2001, p. 19). The plan went on to outline that such an approach would include:

- ✧ Provision of access to meaningful, accurate information delivered in a culturally effective way including the development of appropriate consumer education programs;
- ✧ Strengthening of primary health care strategies across all health services to ensure provision of the best clinical care and health opportunities commensurate with health care standards;
- ✧ Acknowledgement of the crucial role of Aboriginal Health Workers;
- ✧ Acknowledgement of the importance of community-controlled and community based health care services;

- ✧ Reduction of economic, physical, administrative and cultural barriers to accessing mainstream services and programs such as Medicare and the Pharmaceutical Benefits Scheme;
- ✧ Adoption of an holistic view of health (i.e. one that does not simply focus on the physical well-being on an individual, rather on the social, emotional and cultural well-being of the whole community);
- ✧ Promotion of inter-sectoral collaboration between Indigenous and non-Indigenous organisations; and
- ✧ Support for the development of local community strategies to address the problems of identified environmental pollutants (DHAC, 2001, p. 19-20).

One product of the NAAP, developed by the NAC, is the 'Asthma 3+ Visit Plan'. This is a management plan that involves clients attending a general practitioner over a minimum of three appointments to have their asthma evaluated, receive education and have a personal Asthma Action Plan developed (DoHA, 2002). This strategy has been utilised in this AIM project.

The key objectives of the project were specifically to:

- ✧ Measure the effect of implementing the National Asthma Council asthma management guidelines in a culturally appropriate manner in an Aboriginal Medical Service (assessing patient clinical indicators, self management skills, processes of care and service utilisation)
- ✧ Utilise current Indigenous-specific asthma education resources (*Short Wind*), identifying what other resources appropriate for Indigenous groups need to be developed
- ✧ Establish a best practice model for effective asthma management in Aboriginal Medical Services (with specific attention on the role of the Aboriginal Health Worker)
- ✧ Develop a resource that outlines effective implementation strategies for asthma management specific to the rural Aboriginal Medical Service context (for distribution across rural Australia)

The overall aim of the project was to develop, implement and test strategies that support Indigenous individuals to better manage and control their asthma in order to minimise their asthma symptoms and improve their quality of life.

National survey data has described that asthma is the most commonly reported condition for Indigenous children and young adults. Whilst it is not the most common condition in older age groups it was reported by 16-17% of Indigenous adults aged 25 years or more (ABS & AIHW, 1999). Thus, there is an obvious need to support and collaborate with the Indigenous community in developing culturally appropriate asthma management interventions.

The National Asthma Council's asthma management strategies, including the Six Step Asthma Management Plan and 3+Visit Plan, were developed for all Australians to improve the health status of asthmatic people. There have been no Indigenous-specific asthma management programs developed.

Since the NAC's Six Step Asthma Management Plan has been shown to be effective (Coughlan et al, 2000) this project aims to address how mainstream strategies can be most effectively implemented into the Indigenous community health service setting. This involves a multi-disciplinary collaborative approach between a number of key organisations working together to determine best practice guidelines for applying NAC asthma management strategies using comprehensive education and training, Indigenous-specific resources and an integrated community service model.

The methods of the project, its findings, narrative summaries by key personnel and discussion are presented here. A systematic literature review of asthma and the Australian Aboriginal and Torres Strait Islander population has also been undertaken and is presented in Section 4.0. The project has been critiqued using multiple methods in order to provide a rich patchwork of evaluation.

2.0 The Collaborative Team

The project was administered and managed by the Division of Health Sciences at the University of South Australia. The key personnel who contributed to the project, and the Aboriginal Medical Service 'Pika Wiya Health Service Incorporated' (PWHS), are outlined in order to describe the collaborative team environment and the context within which the project was undertaken.

2.1 Organisations and Key Personnel

The organisations (listed alphabetically) and key personnel who have contributed to this project include:

Asthma SA

- ✧ Nigel Cooper, Asthma Educator
- ✧ Kay Gallery, CEO

Department of General Practice, Adelaide University

- ✧ Professor Justin Beilby, Head, Department of General Practice
- ✧ Angela Gialamas, Project Officer

Flinders and Far North Division of General Practice

- ✧ Dr Julia Vnuk, GP Program Coordinator
- ✧ Bianca Broadwood, Program Support Officer

Pika Wiya Health Service:

- ✧ Cephas Stanley, CEO
- ✧ Anna Caponi, Services Coordinator
- ✧ Maurice Shipp, Program Director
- ✧ William Warren, Asthma Clinic Aboriginal Health Worker
- ✧ Various other Aboriginal Health Workers
- ✧ Chris Tuddenham, Health Educator
- ✧ Dr Jonathan Hunt, General Practitioner
- ✧ Belinda Johnson, Practice Manager
- ✧ Sarah Anthony, Pharmacy

Port Augusta Hospital and Health Service

- Management

- ✧ Dr Nes Lian-Lloyd, Director of Medical Services
- ✧ Lyn Olsen, Director of Nursing

- Northern Regional Paediatric Unit
 - ✧ Jenny Bury, Registered Nurse and Asthma Educator
- A&E Department
 - ✧ Carol Brown, Unit Manager Emergency Department
 - ✧ Julie Noll, Clinical Nurse Emergency Department
- Aboriginal Health Unit:
 - ✧ Garnett Brady, Senior Project Officer

Spencer Gulf Rural Health School (incorporating the South Australian Centre for Rural and Remote Health)

- ✧ Angela Russell, Student Support and Special Projects, Spencer Gulf Rural Health School (based at PWHS)
- ✧ Associate Professor Gary Misan, Head of SACRRH

University of South Australia

- ✧ Anna Dawson, AIM Project Manager, Division of Health Sciences
- ✧ Professor David Wilkinson, Pro Vice Chancellor, Division of Health Sciences, and former Head of SACRRH

2.2 Pika Wiya Health Service Incorporated

Early in the 1970's a group of Aboriginal women in Port Augusta advocated for the development of an Aboriginal Medical Service after learning about and witnessing a number of traumatic incidences in the local community. Funding had to be obtained outside of Australia and came from the World Council of Churches in Geneva, Switzerland. From this traumatic and humble beginning, the Aboriginal Medical Service (AMS) evolved into the Pika Wiya Health Service Incorporated in 1984.

"The winds of change had begun" and since then PWHS has gone through many transformations. The service has grown and evolved with the needs of the community into the largest and leading AMS in South Australia, with over 73% of the staff representative of the diverse language groups in the area. The PWHS Board is nominated and appointed by the Minister for Health.

The mission statement of PWHS:

" Pika Wiya Health Service Inc. will provide culturally appropriate services to Aboriginal and Torres Strait Islander people, addressing preventative, promotive and curative aspects of health, which encourages our community to achieve greater dignity and quality of life equal with all Australians."

Figure 1 presents the PWHS Logo, which illustrates the ideology, context and mission statement of the health service.

Historically Port Augusta has always been a meeting or trading place. PWHS has a large number of clients who come from all areas of SA as well as other states and territories of Australia. When ATSI people arrive in Port Augusta, PWHS automatically becomes their health service. Clients who need to come to Port Augusta for renal dialysis usually move here with their family. This has caused the local Aboriginal and Torres Strait Islander population to increase.

Davenport community, approximately 6 km's from Port Augusta, has a fluctuating population normally ranging between 180 – 200 people, which is prone to increases at times of special events or funerals. Residents at Davenport have an affiliation with at least 135 different language groups. Homes range from standard housing to fringe dweller camps. PWHS operates a health clinic in the community, which has a very strong cultural influence and operates on a no-appointment-necessary basis. Establishing an Asthma clinic at Davenport was seen as a priority as staff had identified a number of clients who could benefit from culturally sensitive Asthma education and management.

Like other AMS's, PWHS provides a truly complex range of services in order to meet the expectations and needs of its local communities. PWHS delivers:

- ✧ Culturally sensitive services, accommodating all local language groups, which recognise and advocate for the diversity that exists within the Aboriginal community
- ✧ Programs that adapt to the needs of the community
- ✧ Services which aim to empower clients to self-manage their health
- ✧ Services that aim to improve client equity and access
- ✧ A holistic approach that addresses the important social, emotional and environmental elements of each client, as well as the medical elements

Specifically, the services and programs coordinated by PWHS include:

Health Clinics providing the expertise of AHW's as the first point of contact; programs covering the areas of Ante-Natal/ Women's Health, Sexual Health, Diabetes, Ear Health, Special Needs, Shared Care /Chronic Disease Management, Immunisation, Transport, Social and Emotional Well Being, Home and Community Care, Youth, Nutrition for Life, and Emergency Relief/ Financial Planning. A basic Asthma Program conducted by PWHS was developed into a comprehensive Asthma Clinic and Program during the course of this project. Support groups conducted by PWHS include the Young Mums Support Group and the Weekly Alcohol Support Group. PWHS also provides a Hospital Liaison Service.

3.0 Methodology

The project was conducted over an eleven-month period from June 2002 through to April 2003. The project was executed through five phases, collecting both qualitative and quantitative data to evaluate the usefulness of the project's asthma management interventions.

✧ Phase 1 – Planning

An initial planning period whereby key team members from participating organisations came together to determine all aspects of the project methodology, determine key tasks, assign responsibilities, develop communication strategies (including reporting processes) and establish project milestones and deliverables. At this time ethics proposals were developed and approvals sought through the University of South Australia and the Aboriginal Health Research Ethics Committee of South Australia.

✧ Phase 2 – Determining the Baseline

This assessment phase was undertaken to formulate an understanding of the baseline from which the project's interventions would be developed. Data was collected on knowledge of Aboriginal Health Workers (AHW's) in asthma management strategies (prior to and following asthma education training), service utilisation (both at the hospital and the previously established Asthma Clinic) and system diagrams were developed depicting the current management of asthma patients. Systems were also put in place for the data collection requirements of the project (both at Port Augusta Hospital and at PWHS).

A comprehensive literature review was undertaken to compile all current knowledge about the nature of asthma in Indigenous populations and asthma management practices currently utilised. The literature review question was:

"What is the current level of knowledge in the literature around asthma in the Aboriginal and Torres Strait Islander population?"

The methods and findings of the literature review are outlined in Section 4.0

✧ Phase 3 – Education and Training

Asthma SA undertook Education and Training workshops in August and September of 2002. Asthma SA developed an asthma management curriculum appropriate for the effective training of AHW's at PWHS and nurses at the Port Augusta Hospital and Regional Health Service. In September 2002 the local Division of General Practice conducted an asthma education evening, thus education of GP's did not have to be undertaken as

part of this project. Asthma SA undertook a total of three days of training for AHW's, and one day of training for nurses. This curriculum included education and training in asthma principles and medication, and the use of the NAC's Six Step Asthma Management Plan and 3+Visit Plan. Discussion of the Short Wind Indigenous-specific asthma resource was also undertaken.

The Asthma Program RN also promoted the Asthma Clinic at the hospital, briefing ward and A&E staff in how to initiate asthma management education and facilitate patient referral to PWHS (following informed consent).

✧ Phase 4 – Implementation

The implementation phase was conducted between September 2002 and April 2003, with breaks for staff leave and the Christmas holiday period. It involved a period of establishing management pathways and integrating the NAC's asthma management strategies (3+Visit Plan) for clients of PWHS. Referral of clients from the hospital and other general practices was undertaken following written informed consent. After gaining consumer consent to be part of the Asthma Project evaluation, specific clinical data was collected for each patient by the treating AHW or RN. This was collected at the beginning and at the end of the intervention period, following client agreement, and included the following:

- ✧ FEV1, PFR and FVC (as % predicted)
- ✧ Nocturnal asthma
- ✧ Asthma on waking
- ✧ Number of days off school or work
- ✧ Number of A&E visits
- ✧ Number of hospital admissions
- ✧ Number of GP visits

Note: The number of emergency department visits could not be obtained due to difficulties in data extraction from statistical packages at the Port Augusta Hospital and Health Service.

A quality of life survey was initially undertaken with clients, but was omitted due to its cultural inappropriateness (it had been validated with 'normal' Americans and had inappropriate questions).

Self-management skills of asthma patients were assessed, using voluntary questionnaires that determined the following:

- ✧ Knowledge of asthma
- ✧ Self-confidence regarding management

The processes of care were assessed using the following indicators:

- ✧ Number of clients registered in the Asthma Clinic
- ✧ Number of completed asthma action plans
- ✧ Number of completed 3+Visits

✧ **Phase 5 – Data Analysis and Recommendations**

Data analysis and report writing was undertaken in April and May of 2003. The client data were coded at the Department of General Practice, University of Adelaide. All data was entered into an MS Excel™ worksheet. Quantitative data for this report was analysed in the Statistical Program for Social Sciences (SPSS) version 10.0.5 1999. Descriptive statistics (frequencies) were calculated for all variables. Summary statistics, (median and standard deviation) were produced for the continuous variables. Due to small sample (client) numbers, further statistical analysis could not be performed.

An important part of the project evaluation was the presentation of narrative summaries written by staff involved in the clinic, and the anonymous client case study. The identification of barriers to asthma management occurred throughout the various phases of the project.

The final report presents the processes established during the project, which are the methods the team believe were most appropriate for PWHS at the time. The original intention of developing a 'best practice' model was too ambitious. The processes established during the project were simply the most effective methods for PWHS, considering the constraints and barriers it was working within.

✧ **Reporting**

Throughout the life cycle of the project weekly progress reports were distributed to all of the organisations involved in the collaborative team. Two formal reports were developed during and following the project – an interim report in November 2002 and this final report in May 2003. All members of the collaborative team had an opportunity to contribute to the content of each report.

4.0 Systematic Literature Review

A systematic review of the literature around asthma in the Australian Indigenous population was undertaken in order to inform the AIM project being conducted in Port Augusta. Outlined here is the methodology and findings of this review.

4.1 Methodology

Aim

The task for this aspect of the project was to identify published papers related to asthma in the Australian Indigenous population. We thus systematically identified, collated and reviewed the relevant literature from a variety of sources.

Search Question

"What is the current level of knowledge in the literature around asthma in the Aboriginal and Torres Strait Islander population?"

In order to determine:

- ✧ How many studies have been done?
- ✧ What have they shown?
- ✧ What gaps are there in the current literature?
- ✧ What appears to have been successful in previous interventions?

Search strategy

This review used the approach outlined by the National Health and Medical Research Council (NHMRC, 2000), whereby a transparent search strategy is outlined, and is systematically applied to available databases of published literature and to other available literature sources that would identify published scientific papers and unpublished reports (using the Internet). The database searches were undertaken in January 2003, and the Internet searches were undertaken in March 2003.

Key words

The key words/ phrases used in the search of databases and Internet sites include the following:

- ✧ Asthma AND Aboriginal (Aborigin*)
 - ✧ Asthma AND Torres Strait Islander
 - ✧ Asthma AND Indigenous
- OR

- ✧ Asthma AND (Aboriginal/ Aborigin* OR Torres Strait Islander OR Indigenous)

Criteria for considering studies for this review

- ✧ Types of participants: screening criteria & selection criteria
 - ✧ Australian Aboriginal and Torres Strait Islander people of any age
- ✧ Types of intervention: screening criteria & selection criteria
 - ✧ All intervention types that investigate asthma in relation to Aboriginal and Torres Strait Islander people.
- ✧ Types of outcome measures: screening criteria & selection criteria
 - ✧ All outcome measures were included.
- ✧ Types of studies: preferred and additional
 - ✧ Studies of all designs (both qualitative and quantitative research) were included as reviews, abstracts, media releases and unpublished reports.

Exclusion criteria

- ✧ Studies of Indigenous peoples from other countries such as Canada, New Zealand and America
- ✧ Non-English language
- ✧ Publications produced greater than 10 years ago (for Australian Bureau of Statistics publications)

Search strategy for identification of studies

Databases

Computerised bibliographical databases that were accessible through the University of South Australia's library were searched without any year restriction.

Those databases searched include:

- ✧ Cochrane Library
- ✧ Medline
- ✧ CINAHL
- ✧ AUSTRUM – ATSIROM; APAIS-Health; Aust_Med_Index (AMI); RURAL; Health in Society; DRUG; AusportMED
- ✧ PubMed
- ✧ Science Direct
- ✧ Academic Search Elite; Health Source (Consumer Education, Nursing/ Academic Education); Newspaper Source; PsycINFO; Sociological Abstracts; World Magazine Bank; International Pharmaceutical Abstracts; SPORTdiscus
- ✧ ATSI-CDROM; ATSIC Library Catalogue; ATSI Health Bibliography
- ✧ Factiva

- ✧ Sportsdiscus; Current Contents; AMED; Uncover Plus; Ageline; Ideal (International Digital Electronic Access Library); ProQuest Digital Dissertations; Health and Society Database

Websites

To reduce publication bias (i.e. that only published journal articles are included in the review), searching was also undertaken on Internet websites to collect unpublished reports.

- ✧ National Asthma Council
- ✧ Asthma Australia
- ✧ Asthma SA
- ✧ Asthma NT
- ✧ Office for Aboriginal and Torres Strait Islander Health (OATSIH), Department of Health and Ageing
- ✧ Australian Bureau of Statistics

Study selection

The 'hits' from each database were hand-searched to eliminate articles that were not relevant to the topic. Articles were included in the review regardless of study design. Studies that were not directly related to Aboriginals/ Indigenous/ Torres Strait Islanders AND asthma were not included in the review per se, though they were often read in the process of review in order to provide additional information about the subject matter in question.

Unavailable Publications

Some studies found in the database searches could not be obtained through the University of South Australia or University of Adelaide libraries, and were therefore excluded from the review. The list of these references is included in the reference list. Those studies that were discarded after review are also listed.

Limitations of the literature review

- ✧ Only those databases available through the University of South Australia library were searched
- ✧ Only those journals which could be found within the libraries and websites of the University of South Australia and Adelaide University were obtained and included
- ✧ Only English-language studies were included
- ✧ Use of READER critical appraisal tool (originally designed for use by general practitioners) in the absence of a tool designed for AMS's.
- ✧ Only the latest publications printed by the ABS (since 1993) were reviewed

Description of the READER instrument

The instrument used in this study to assess the quality of articles was the READER critical appraisal tool (See Appendix 1). The acronym READER relates to the elements of the critical appraisal, including an assessment of Relevance, Education, Applicability, Discrimination, overall Evaluation score and Reaction (where the assessor can decide what to do with the article) (MacAuley, 1994). This tool was chosen because it was appropriate to evaluate both experimental and descriptive studies. The tool has been tested in both a workshop-based controlled trial (MacAuley and McCrum, 1999) and a randomised controlled trial (MacAuley et al, 1998), both of which found the tool to be effective in applying an appropriate appraisal to the methodology of studies that was both accurate and repeatable. The tool was designed for and tested by general practitioners. This tool was determined to be useful for evaluating publications in this review, as it enabled each article to be appraised in terms of scientific rigour as well as applicability and usefulness for the Aboriginal Medical Service setting in which our project took place. Therefore, this tool was used with an AMS focus, and within an AMS context, rather than a general practice focus. For example, when rating Applicability, one of the scores is described as "impossible in my practice" – this, of course, was considered in terms of "impossible in the AMS's practice".

Excluded papers

- ✕ Those papers that were not relevant to the area of research
- ✕ Those papers which could not be accessed through the University of South Australia or Adelaide University libraries
- ✕ Reports from the ABS prior to 1993

Hierarchy of Evidence

Literature was ranked according to the hierarchy of evidence as described by Sackett et al (2000) (Table 1).

Table 1: Hierarchy of Evidence (Sackett et al, 2000)

Hierarchy of evidence	
Level 1 a.	Systematic review of randomised, controlled clinical trials
Level 1b	Individual randomised controlled clinical trial
Level 1c	All or none
Level 2a	Systematic Review of cohort studies
Level 2b	Individual cohort study (including low-quality RCT)
Level 2c	"Outcomes" research
Level 3a	Systematic review of case-control studies
Level 3b	Individual case-control study
Level 4	Case series (and poor quality cohort and case-control studies)
Level 5	Expert opinion without explicit critical appraisal

4.2 Search Results

The following is an outline of the available literature around asthma in Australian Aboriginal and Torres Strait Islander peoples. Also outlined is the quality of evidence of studies, and a summary of their findings.

Search Strategy Findings

The outcomes of the website and database searches are outlined below in Table 2.

Table 2: Database and Website Search Results

Database / Website	Number of 'hits'	Number of useful articles
Cochrane Library	3	1
Medline	62	28
CINAHL	36	12
AUSTROM – ATSIROM; APAIS-Health; Aust_Med_Index AMI; RURAL; Health in Society; DRUG; AusportMED	10	10
PubMed	45	21
Science Direct	0	0
Academic Search Elite; Health Source (Consumer Education, Nursing/ Academic Education); Newspaper Source; PsycINFO; Sociological Abstracts; World Magazine Bank; International Pharmaceutical Abstracts; SPORTdiscus	11	4
ATSI-CDROM; ATSIC Library Catalogue; ATSI Health Bibliography	47	38
Factiva	28	16
Sportdiscus	0	0
Current Contents	36	21
AMED	0	0
Uncover Plus	9	9
Ageline	0	0
Ideal (International Digital Electronic Access Library)	0	0
ProQuest Digital Dissertains	0	0
Health and Society Databasde	58	20
ABS Website	100	19 generally useful and 7 specific to asthma
National Asthma Council Wesite	0	Upon contacting NAC, 3 relevant articles forwarded
Asthma Australia Website	0	0
Asthma SA Website	0	0
Asthma NT Website	1	1
OATSIH, Department of Health and Ageing Website	0	0

Level of Evidence

Table 3 describes the quality of published papers from peer-reviewed publications. It is clear that the available literature is largely poor quality evidence.

Table 3: Quality of Evidence (using Sackett et al, 2000)

Level of evidence	Description	Number of studies
Level 1a	Systematic review of randomised, controlled clinical trials	0
Level 1b	Individual randomised controlled clinical trial	0
Level 1c	All or none	0
Level 2a	Systematic Review of cohort studies	0
Level 2b	Individual cohort study (including low-quality RCT)	0
Level 2c	Outcomes research	0
Level 3a	Systematic review of case-control studies	0
Level 3b	Individual case-control study	0
Level 4	Case series, poor quality cohort and case-control studies and reviews	12
Level 5	Expert opinion without explicit critical appraisal	0
Other	Letter to the editor (5) , Abstracts (2)	7

In addition to this there have been three cross-sectional surveys (Level 4 evidence) undertaken by the Australian Bureau of Statistics in the past 10 years (ABS, 1994; ABS, 1999; ABS, 2002).

4.3 Critical Appraisal

Critical Appraisal with READER instrument

As outlined in Table 4, most of the studies reviewed with the READER instrument scored quite poorly. In most instances this was due to a poor score in the Discrimination category, which rated the studies scientific quality. This is understandable considering that all studies in this review were Level 4 or less according to Sackett et al's (2000) Hierarchy of Evidence scale. As previously iterated, this appraisal was done from the perspective of applicability and relevance to Aboriginal Medical Services.

Table 4: READER Critical Appraisal results

Article	Type of Study	READER Critical Appraisal Methods (MacAuley et al 1998)				
		R	E	A	D	Evaluation
		Total = 5	Total = 5	Total = 5	Total = 10	Total = 25
Chang et al (2000)	Descriptive	3	4	4	4	15
Valery et al (2001)	Cross-sectional	3	4	4	4	15
Downs et al (2001)	Cross-sectional	3	3	3	2	11
Peat and Veale (2001)	Review	4	3	4	2	13
Whybourne et al (1999)	Retrospective review	2	2	2	2	8
Bremner et al (1998)	Cross-sectional	3	2	3	4	12
Ruben and Fisher (1998)	Retrospective review	3	3	3	4	13
Williams et al (1997)	Cross-sectional (6 yr period)	4	3	4	4	15
Veale et al (1996)	Cross-sectional	3	3	3	4	13
Verheijden et al (2002)	Cross-sectional	3	2	3	4	12
Hamdorf et al (1996)	Cross-sectional	3	3	3	1	10

4.4 Findings

There were a number of documents available on the Australian Bureau of Statistics website that were relevant to this literature search. They mostly presented information gathered in key national surveys. These include the National Health Surveys of 1995 (ABS, 1999) and 2001 (ABS, 2002) and the 1994 National Aboriginal and Torres Strait Islander Survey (ABS, 1994). Also, the 1996 Australian census data, along with the aforementioned survey data, informed the publication entitled 'The Health and Welfare of Australia's Aboriginal and Torres Strait Islander Peoples' (ABS, 2001). There were a number of other relevant publications found on the ABS website that discuss the findings of these national surveys. However, not all of these were directly related to this literature review and have therefore had to be omitted from this discussion. A total of 7 publications have been included.

As one would expect from the ABS, the data they present is largely epidemiological and cross-sectional findings regarding prevalence of asthma, incidence of smoking, health service utilisation and other health-related phenomenon. The findings of the national surveys are presented with the findings from journal publications in Tables 5a and 5b.

Results from the *1995 National Health Survey* (ABS, 1999) showed that diabetes and asthma were more commonly reported by Indigenous people than by other Australians. Among specific conditions, asthma was the most commonly reported condition for Indigenous children aged less than five years (17%) and 5-14 years (23%), and among young adults aged 15-24 years (20%). Although not the most common condition in older age groups, it was reported by 16-17% of Indigenous adults. Asthma was more commonly reported for Indigenous people than for non-Indigenous people in every age group. Overall, asthma was reported in 19% of Indigenous people compared to 11.2% of the total population.

Asthma medication was the second most commonly used medication (10%) in Indigenous people, following pain relievers (16%). Among adults aged 18 years and over, just over half (51%) of Indigenous people reported they were current smokers, compared with 23% of non-Indigenous adults. Indigenous people were more than twice as likely as non-Indigenous people to report having contact with a hospital in the past two weeks because of their health.

The *2001 National Health Survey* (ABS, 2002) included a supplementary survey of Aboriginal and Torres Strait Islander people (also referred to as the 'Indigenous Health Survey'). Asthma was the second most commonly reported condition among Indigenous peoples (16%), after eye problems (29%). Indigenous Australians were more likely to report asthma as a long-term health condition than the non-Indigenous population (17% and 12% respectively).

Asthma was more often reported in non-remote areas than in remote areas, though due to the survey design it could not be stated with any confidence that these estimates represented any real difference between the two sub-populations.

The Health and Welfare of Australia's Aboriginal and Torres Strait Islander Peoples (ABS, 2001) document described 1996 Census data that showed that Indigenous people comprised approximately 2% of the total population of Australia. This represented a 33% increase in the Indigenous population from the 1991 Census and was reportedly due to 'natural' increases (births, deaths and migration levels) and increasing numbers of Indigenous people recording their Indigenous status on census forms. Nearly 20% of the Indigenous population lived in areas classified as 'very remote', compared with only 1% of the non-Indigenous population.

The document reports that in 1998-99, an estimated \$1,245 million was spent on health services for Aboriginal and Torres Strait Islander people. This figure represented 2.6% of health expenditure for all Australians and was largely spent on community and public health, patient transport, public hospital services, mental health institutions, and government administration and research rather than on Medicare, private hospitals, the Pharmaceutical Benefits Scheme and residential aged care where money is invested for other Australians. It was estimated that overall, for each \$1.00 spent on health services for non-Indigenous people, \$1.22 was spent on health services for Indigenous people.

It was reported that Indigenous people experienced lower levels of access to health services than the general population, in some part due to residing further away from health facilities. Other factors described that were considered likely to influence the extent at which Indigenous people used health services included the socio-economic status of patients, the availability of transport, the ability to speak English, and the availability of same-sex AHW's.

The *National Aboriginal and Torres Strait Islander Survey (NATSIS) 1994 (ABS, 1994)* found that almost 35% of people had a health condition that they had experienced for six months or more (long term sufferers). Asthma was reported as a current health condition in 13.8% of males and 16.8% of females (15.3% overall).

An estimated 56% of Indigenous males and 48% of Indigenous females aged 15 years and over were current smokers at the time of the 1994 NATSIS survey, in sharp contrast to the estimated prevalence in the Australian population as a whole (27% of males and 20% of females).

The *Australian Social Trends 2000 (ABS, 2000)* document discussed barriers to Indigenous health outcomes. Such barriers included access problems such as distance, availability of transport, access to doctors and pharmaceuticals, and access to culturally appropriate services. Language and cultural differences were also identified as barriers to health service utilisation. Barriers that impeded full access to Medicare and the Pharmaceutical Benefits Scheme (PBS) included lack of awareness of entitlements, and the lack of cultural appropriateness of the enrolment requirements for Medicare and the PBS. These factors when combined with financial disadvantage were stated to compound the health difficulties faced by Indigenous people.

The *Year Book Australia 2002* document entitled *Health: Centenary Article - Child health since Federation (ABS, 2002)* discussed that many more Indigenous families live in relative poverty than non-Indigenous families. It reported that some Indigenous families, particularly in remote areas, live in real deprivation

reminiscent of 19th century poverty. The overall poverty rate among Indigenous families is almost three times that among non-Indigenous families, with half of all Indigenous children living in poverty in 1986. The document describes that this is a uniquely Australian problem, which other countries (New Zealand, USA and Canada) have handled better, with increased life expectancies in their Indigenous groups.

According to the *1996 Australian Census* data (ABS, 1996, 2034.4), in South Australia 58.2% of the Indigenous population were aged 0-24 years compared with 43.0% of the state population. 2.7% were 65+ years in comparison to a state proportion of 13.9%. This evidences the higher fertility and death rates experienced by the Indigenous population. In terms of education level, 42.9% of all Indigenous persons had left school at age 15 or less, compared with the state percentage of 37.6%. Unemployment was also higher in the Indigenous population, with only 36.6% of the population aged 15+ years employed, compared with the state percentage of 52.5%. This is useful information to take into consideration when planning for the asthma clinic in Port Augusta.

The research undertaken outside of national governmental surveys on asthma in the Indigenous population is, as previously outlined, largely focused on studying the prevalence of asthma in varying locations around Australia. This has been described by individual assessment of communities, and by retrospectively reviewing hospital separation data. Table's 5a and 5b outline each of the studies, their aims, methods, definitions of asthma and findings.

Veale et al (1996) described the prevalence of asthma in rural communities in Queensland and central Australian in 1990-1991. They found that the prevalence of current asthma, measured via interviewer-administered questionnaire, was 0.5% among 8-12 yr old children and 3.3% among adults; the prevalence of airway hyper-responsiveness (AHR) ranged from 2.2%-7.5%, significantly increasing with age; and the overall prevalence of atopy ranged from 21% to 34%, increasing with age. The authors concluded that the prevalence of recent wheeze, AHR, current asthma and atopy in the rural Aboriginal communities they studied was low in comparison to the prevalence among non-Aboriginal Australians, and asthma in Aboriginal children was 'almost non-existent'. These findings were markedly different to 15.3% who reported asthma as a current health condition in the *NATSI* (ABS, 1994). The authors suggested that the low prevalence of asthma was possibly due to environmental factors that influence the acquisition of atopy and AHR.

Hamdorf et al (1996) undertook a cross-sectional survey of Aboriginal health in the Peel region of WA, in 1994-1995, which collected data via interview on a range of health related themes. A total of 57 families including 271 adults and children were interviewed, with a participation rate of 70% of the population. In adults, 21% suffered from persistent cough or wheeze, 23% had had at least one respiratory tract infection and 14% had experienced asthma in the past year. Among children, 46% had had an RTI and 15% had had an asthma attack. Note that data was gathered by interviewing the primary carer in the household; therefore findings are subject to the perceptions of the individuals interviewed.

Bremner et al's (1998) study was undertaken in 1993 in a remote tropical community in WA. The study included 96 male and 111 female Australians of Aboriginal Descent (AAD), and compared levels of lung function with Australian's of European descent (AED). The results of the study showed that lung function were similar to other AAD groups previously studied and lower than in the AED group. A history of asthma, smoking, dyspnea, cough or sputum production, atopic status, and increased BHR were all associated with lower lung function. Differences in lung function between the two groups appeared to be determined by genetic characteristics as well as by adverse external influences (such as effects on lung growth and degradation). A history of being diagnosed with asthma was more frequent in adults than children, and more common in females than males in both groups (children: M (5.4%), F (8.9%) and adults: M (8.5%) and F (15.2%). Atopy was also more common in adults than in children, was slightly more common in women (36.4%) than in men (28.8%) and was predominantly due to positive responses to house dust mite. The authors recognised a limitation of the study was the use of a questionnaire validated with non-ATSI groups.

Valery et al (2001) described a study of asthma prevalence in children in five remote Indigenous communities from the Torres Strait and northern peninsula area of Australia. A total of 1650 children were included in the study with a response rate of 98%. There were significant variations between communities, with an overall the prevalence of self-reported ever wheezing of 20.6%, 12.4% reported wheezing in the previous year, and 15.8% reported ever having asthma. The study found that the prevalence of asthma in these communities was as high as in the Australian non-Indigenous population.

Downs et al (2001) undertook a study comparing the prevalence and risk factors for wheeze, asthma diagnosis and hayfever in Aboriginal and non-Aboriginal children aged 7-12 years living in two rural towns in NSW, Australia. The prevalence of wheeze in the last 12 months in Aboriginal children in this study (31%) was over 10 times higher than that measured by Veale et al (1996) in rural communities in Queensland and central Australia. The rate of diagnosed asthma was 39.4% in the Aboriginal children and 39.3% in the non-Aboriginal and there was a similar level of asthma medication usage between the two groups. Aboriginal children were less likely to be atopic and to have hayfever than non-Aboriginal children. In Aboriginal children, having had bronchitis before age two was a strong risk factor for wheeze and asthma. Results showed that there are similar rates of wheezing illness in Indigenous and non-Indigenous children, but that their aetiology is possibly different (i.e. less allergic in the Aboriginal population).

Verheijden et al (2002) described the prevalence of respiratory symptoms, asthma and levels of lung function in two matched remote Aboriginal communities (one northern tropical and one desert) in Western Australia. 84 subjects from the desert community and 209 subjects from the tropical community participated. For both adults and children, SOB and chest tightness were reported more frequently in the desert community (DC) than in the tropical community (TC). There were no significant differences in cough, sputum, wheeze, or diagnosed asthma between the two groups. The prevalence of asthma in children was 12-17% (TC) and 0-7% (DC) and in adults was 7-20% (TC) and 16-26% (DC). Wheeze in children was 17-20% (TC) and 7-20% (DC) and in adults was 31-32% (TC) and 38-44% (DC). Overall, the DC group had greater respiratory

symptoms and poorer lung function, and showed more positive responses to atopic testing. The presence of asthma was not related to and therefore could not explain these findings. The authors believed the study confirmed the high rate of respiratory symptoms, low rates of asthma, and low levels of lung function in these remote Aboriginal communities. The results suggest that other environmental factors such as infection may be responsible for the differences observed between the communities, as there were higher total white cell counts and neutrophil counts in the DC group. The authors felt that this study confirmed some of the observations previously made in that asthma seems uncommon in remote Aboriginal communities, especially in children (Torzillo et al, 1983; and Veale et al, 1996). Note that this study is different to some others in terms of the definition of asthma as it uses a self-reported diagnosis of asthma cross-checked with clinic files.

Thus the cross-sectional studies undertaken to date have differed in their findings in relation to prevalence of asthma.

Chang et al (2000) undertook a descriptive study of the management of children in a remote Indigenous community and the delivery of a sub-specialist service through the Indigenous health care model. Children referred by AHW's to paediatric respiratory physicians were evaluated prospectively at a primary health care setting at Thursday Island, Qld. Results showed that of 54 children who had a pre-evaluation diagnosis of asthma, 14 did not have clinical asthma and instead had other respiratory disorders. Those children who did have asthma were classified as persistent (30%), frequent episodic (13%) and infrequent episodic asthma (57%). This prevalence of persistent asthma (30%) was greater than the mainland Australia proportion of 5-13% at that time. Chang et al found that in this region there was considerable room for improvement in the management of asthma. Most of the asthma medications were wrongly prescribed with respect to age-appropriate delivery systems and dosage. They felt it demonstrated a need for educational interventions to be undertaken with treating health professionals around optimisation of drug delivery techniques and basic knowledge of asthma medications. They also felt that it showed that specialist medical services could be successfully provided through the community controlled health service with good attendance rates (98%), rather than through other services (50%) offered on the Island.

Other studies undertaken have looked at hospitalisation of Indigenous people with respiratory conditions. Williams et al (1997) undertook a cross-sectional study to document the epidemiological patterns of respiratory conditions as causes of hospitalisation in WA from 1988 through to 1993. Overall, age-standardised rates of hospitalisation were 5.6 times higher among Aboriginals compared with non-Aboriginals for diseases of the respiratory system. Admission rates for asthma were consistently higher in Aboriginals compared with non-Aboriginals and in non-metropolitan compared to metropolitan areas. In fact, age-standardized rates of admissions for asthma were 3.1 times higher for Aboriginal people than non-Aboriginal people. Asthma was the main or second cause of hospitalisation for all Indigenous age groups other than infants (<12 months). A noted limitation of the study was the population distributions in WA and the limited access of patients in very remote and isolated areas to clinical

care and follow-up that could impact on admissions practices in non-metropolitan versus metropolitan areas.

Ruben and Fisher (1998) described a retrospective review of hospitalisation data from the Royal Darwin Hospital for children under 10 years discharged between 1991 and 1996. This was undertaken to determine if a new casemix system of hospital funding would impair health service delivery to children of ATSI descent. There were significant differences in the proportion of children with multiple co-morbidities between ATSI and non-ATSI children and between ATSI children of rural and urban residence. A higher proportion of ATSI children had prolonged hospital stays with the variables influencing length of stay including age <2 years, living in a remote area and presence of two or more co-morbidities. The highest number of discharges was seen in diagnoses of gastroenteritis for rural ATSI children and bronchitis and asthma for non-ATSI and urban ATSI cases. The authors felt that results confirm clinical impressions about disease patterns and length of hospital stay in ATSI children, that ATSI children require longer periods of hospitalisation as a result of factors such as co-morbidities and remote residence.

Whybourne et al (1999) undertook a retrospective review to determine the hospitalisation rates from 1991-1997 for ATSI and non-ATSI children in the top end of the Northern Territory and to determine the proportion of hospitalisations due to asthma. Results showed that the overall average annual hospitalisation rate per 1000 population with a principal diagnosis of asthma for ATSI children from rural areas was 2.6, 4.7 for ATSI children from urban areas and 5.5 for non-ATSI children (rural and urban combined). The rates were significantly different only between ATSI rural and non-ATSI children. Asthma was diagnosed in 6.5% of ATSI admissions (4% for rural and 13.8% for urban ATSI children) and 12.7% of non-ATSI admissions. The authors felt that these results were evidence that asthma plays a far less significant role in the spectrum of disease affecting hospitalised ATSI children compared to non-ATSI children.

The authors acknowledged that a possible bias in the results lay in the remoteness of many Aboriginal communities with 53% of Aboriginal children included in this study living in rural or remote areas (from which they require air evacuation in order to get admitted to the Royal Darwin Hospital). The authors also noted that it is more common for top end urban Aboriginals to have mixed European ancestry than those from more isolated rural communities, possibly influencing the prevalence of asthma in the rural versus the urban Indigenous populations.

A review by Peate and Veale (2001) described the burden of respiratory illness in Australian Indigenous communities and examined the evidence around its aetiology. They cited various authors when presenting their findings. They found that mortality data in WA and NT has shown that respiratory diseases are one of the most common causes of mortality in Indigenous people, and that in the last 25 years respiratory mortality in Aborigines has been five times higher than in non-Indigenous communities. This is in contrast to New Zealand where in the last 30 years they have achieved significant reductions in Indigenous mortality, largely by preventing deaths from asthma attacks. Looking at asthma from a historical perspective, the authors described that there is no evidence of prevalent respiratory illnesses recorded in Aborigines during white settlement, or in communities living a traditional lifestyle in Arnhem land in the 1950's. The earliest epidemiological studies on the health of Indigenous people in the 1960's

showed extremely high rates of respiratory infections but no asthma or allergic symptoms, as did a survey of respiratory health conducted in Bourke, NSW. They then go on to discuss studies included in this review.

The authors outlined anecdotal evidence to suggest that asthma in Indigenous people may be less allergy-driven and more related to infection than non-Indigenous people. The authors concluded that rates of asthma are low in Indigenous children living in remote communities, though rates of asthma-like symptoms and asthma medication use seem particularly high. They state that the accumulating evidence suggests that many of these symptoms may have an infectious rather than an allergic origin or be a result of inherently small airways that are further compromised by repeated or prolonged bacterial infections or cigarette smoking. They believed the misinterpretation of asthma-like symptoms in Indigenous communities as being of an allergic origin may be leading to high and possibly inappropriate rates of use of asthma therapies. The authors highlighted that there is an urgent need to identify the aetiology and the most effective treatments for asthma-like respiratory symptoms in Indigenous children.

An editorial by Torzillo and Chang (2001) explored the relationship between infection illness, atopy, and asthma. They outlined the proposed hypotheses around the effects of early childhood infection on atopic responses and asthma. Some studies show early respiratory infection to protect against developing asthma, while others show a positive correlation with asthma. They go on to describe that wheezing illness in childhood has different presentations, with some children experiencing wheezing with atopic features, persisting at least into teenage years, and others experiencing wheezing without atopy that disappears in primary school years. The authors cited Downs et al's (2001) study that found that the prevalence of atopy was higher in non-Aboriginal children (45.6% compared with 36.2% in Aboriginal children), while the prevalence of wheeze and asthma was not significantly different. The study provides evidence that there may be a different interplay of factors involved in wheezing illness experienced by Aboriginal and non-Aboriginal children in rural Australia.

Table 5a and 5b summarise what the most significant research studies have found and compares these findings with ABS survey data. Note that studies have used different data collection methods, which can influence study findings.

Table 5a: Summary of Findings from Published Research and National Surveys										
Authors / Year	Title	Type of study	Data collect dates	Subjects	Location of study population	Aim of study	Method	Definitions of asthma	Prevalence of asthma	Other Findings
Veale et al Aug 1996	Asthma and atopy in four rural Australian Aboriginal communities	cross-sectional study	Aug 1990 and Aug-Sept 1991	1252 participants aged 5-84 years	Rural communities of Cape York, QLD (2) and Central Australia (2)	To determine the prevalence and nature of asthma in children and to explore associations with atopy and with house dust mite exposure	Respiratory symptoms measured by interviewer (health worker or community member)-administered questionnaire, AHR (histamine challenge), and allergy measured by skin prick tests.	Current asthma: the co-existence of recent wheeze (in the last 12 months) and AHR, or recent wheeze and >15% increase in FEV1 after bronchodilator.	The prevalence of current asthma was 0.5% among 8-12 year old children, and 3.3% among adults.	Prevalence of atopy was 21% - 34%, mostly to house dust mite or cockroaches. AHR ranged from 2.2% to 7.5%. Concluded that asthma prevalence in the communities studied was low compared to non-ATSI groups and therefore considered "almost non-existent", though reasons unknown. Cause of regional variation in current asthma also unexplainable. Authors postulated that slow atopy response in ATSI could be due to purulent nasal discharge preventing the presentation of allergens to the mucosa.
Hamdorf et al Sept 1996	Aboriginal health in the Peel region of Western Australia	cross-sectional study	Dec 1994-Feb 1995	271 individuals, various ages, from 57 families	SW district of WA including Mandurah, Pinjarra and Waroona	To gain an understanding of the primary health care needs of the Nvngar people living in the Peel region and to discover their attitudes towards the existing health care services.	Structure interview administered by indigenous researcher to primary carer in the household regarding health symptoms in the previous 12 months.	Self-reported during interview.	Adults: 21% suffered from persistent cough or wheeze, 23% had had an RTI, 14% had asthma. Children: 46% had had an RTI and 15% had had an asthma attack.	NA
Williams et al Aug, 1997	Hospitalisation of Aboriginal and non-Aboriginal patients for respiratory tract diseases in Western Australia, 1988-1993.	retrospective review	1988-1993	ATSI and non-ATSI patients admitted to acute stay hospitals throughout WA	WA	To compare Aboriginal and non-Aboriginal age-specific hospitalisation patterns for respiratory tract diseases from 1988-1993 in WA	Information was gathered from the Health Dept of WA's Hospital Morbidity Data System for all hospital discharges for which diseases of the respiratory system were the primary cause of hospitalisation	NA	NA	Age-standardised rates of hospitalisation were 5.6 times higher among ATSI compared with non-ATSI for diseases of the respiratory system. For example, increased rates of 9.5 in infants, 5 in 1-4 yr olds, 16 times in 40-54, and 6 times for 55-yr olds. Asthma was the main cause for 1-4 yrs, and 5-14 yrs and the second cause for >15 yrs groups. Among metro ATSI, asthma was leading cause of admission for all ages except infants. In non-metro ATSI, asthma was the leading cause only in the 5-14 yr group. Overall admissions for asthma 3.1 times higher for ATSI than non-ATSI people.
Ruben and Fisher Oct, 1988	The casemix system of hospital funding can further disadvantage Aboriginal children	retrospective review	Jul 1991-Jun 1996	Children <10 yrs discharged from the RDH in the study period	Royal Darwin Hospital catchment area (urban and rural residents)	To determine separation data for ATSI and non-ATSI children admitted to RDH under four diagnostic groups, to determine differences in hospital stay between these two groups.	Separation data were obtained for all children <10 yrs discharged from the RDH including age, sex, ethnicity, LOS, location of residence, and number of the seven most common comorbidities.	NA	NA	The highest number of separations was seen in DRG gastroenteritis for ATSI rural children (29%) and in DRG bronchitis and asthma for ATSI urban (37.3%) and non-ATSI (53.4%). 1.5% of non-ATSI of 22.8% of ATSI children had prolonged hospital stays. ATSI children were significantly more likely to have co-morbidities. The variables influencing length of stay include age<2yrs, living in a remote area and the presence of two or more comorbidities.
Bremner et al dec, 1998	Respiratory symptoms and lung function in Aboriginals from Tropical Western Australia	cross-sectional study	1993	ATSI people aged 5 yrs and over, with 96 male and 111 female	Isolated, remote tropical WA (northern tip) community	To estimate the prevalence of respiratory symptoms, BHR, smoking and atopy in ATSI (AAD), to determine their association with lung function, and to compare levels of lung function with non-ATSI (AED)	Completed questionnaire in interview of adults and parents of young children, FEV1 and FVC via spirometer, skin prick tests, bronchial responsiveness (metacholine test), demographic data.	Self-reported asthma. Defined by a +ve response to the question: "Has the doctor/sister ever told you that you had asthma?"	A history of ever being diagnosed was reported as 5.4% in male and 8.9% in female children and 8.5% and 15.2% in adult males and females, respectively.	The prevalence of cough (16-30%) or sputum (11-22%) in this population was higher than that reported in other AAD groups and higher than the AED group (due to ? high cigarette consumption or lower RTI). Lung function was found to be similar to other AAD groups and lower than in the AED group. Differences in lung function possibly due to inherited characteristics and adverse external influences (poor lung growth in childhood, etc). Atopy was less common in AAD where it was more common in adults than children with responses primarily to house dust mite.
Whybourne et al Oct, 1999	Low rates of hospitalisation for asthma among Aboriginal children compared with non-Aboriginal children of the Top End of the Northern Territory	retrospective review	Jul 1991-Jun 1997	all children aged 1-9 years	Darwin urban and rural district	To determine the hospitalisation rates from asthma for ATSI and non-ATSI children in the top end of the NT and to determine the proportion of hospitalisations due to asthma	A retrospective review of separation data from the RDH for the period July 1991-Jun1997.	NA	NA	Ave. annual hospitalisation rate/ 1000 population with a principal diagnosis of asthma for ATSI (rural) children was 2.6, 4.7 for ATSI (urban) and 5.5 for non-ATSI (urban and rural). Rates significantly different between ATSI rural and non-ATSI group only. Possible source of bias in that 53% of Aboriginal children in this study lived in rural or remote areas which require air lift/significant travel to get to the Darwin hospital. Asthma was diagnosed in 6.5% of ATSI admissions (4.0% for rural and 13.8% for urban) and 12.7% of non-ATSI children.
Chang et al Jun, 2000	Asthma Management in indigenous children of a remote community using an indigenous health model	observational study	unspecified	54 children	Thursday Island	To determine asthma severity, evaluate medication delivery systems and technique, appropriateness of medications prescribed and basic knowledge of medications.	Evaluation by respiratory physicians using standard protocol	Asthma defined as repeated episodes of wheeze with dyspnoea that respond to bronchodilators. Severity also described.	30% of participants had persistent asthma.	All children had a pre-evaluation diagnosis of asthma. Of these 40 had asthma, with 30% diagnosed with persistent asthma (compared with 5-13% for mainland Australia).

Table 5b: Summary of Findings from Published Research and National Surveys

Authors/Year	Title	Type of study	Data collection dates	Subjects	Location of study population	Aim of study	Method	Definitions of asthma	Prevalence of asthma	Other findings
Valery et al Jun, 2001	High prevalence of asthma in five remote indigenous communities in Australia	cross-sectional	Aug-Oct 1999	1650 children (89.4% indigenous)	5 communities from Torres Strait and northern QLD.	To determine the prevalence of asthma in children	Face-to-face interview with care-giver or children (>14 years) by trained interviewers who were health workers using the ISAAC validated questionnaire.	A total of 8 questions in the questionnaire regarding wheeze, short wind (asthma) and cough at night.	Overall prevalence of self-reported ever wheezing was 20.6%, 12.4% reported wheezing in the previous year, and 15.8% reported ever having asthma.	Children with 1-3 asthma attacks in the past year had the highest proportion of carers with the lowest education attainment. Conversely, Those living in households with more people employed or more carers educated were more likely to have ever wheezed or have wheezed in the past 12 months. Significant intercommunity differences found. Prevalence rate of 20.6% is much higher than previously reported, higher than black American children and similar to American Hispanic and non-indigenous Australian children.
Downs et al Jul, 2001	Asthma and hayfever in Aboriginal and non-Aboriginal children living in non-remote rural towns	cross-sectional	Jul-Sept 1997	Primary school children aged 7-12 years (188 ATSI and 1282 non-ATSI)	Two rural towns in NSW	To compare the prevalence and risk factors for wheeze, asthma diagnosis and hayfever in Aboriginal and non-Aboriginal children living in rural towns in Australia	Parent-completed questionnaire (Children's Respiratory Questionnaire) and skin prick tests (sensitisation to 8 allergens tested).	Self-reported asthma: using four questions to cover wheeze, previous diagnosis of asthma, and sleep disturbance.	Diagnosis of asthma in Aboriginal children 39.4%, non-Aboriginal children 39.3% and wheeze in the past 12 months was (31% v 27.3%) - ie no significant differences between groups	Aboriginal children were less likely to be atopic (36.2% v 45.6%) and to have hayfever (23.3% v 35.2%). A greater proportion of Aboriginal children had visited casualty or a specialist for asthma in the past 12 months. Note that the prevalence of wheezing in this study is 10 times higher than the study by Veale (B20) and higher than the 20% measure by Bremner in 1998 (B13).
Verheijden et al Sept, 2002	Respiratory morbidity and lung function in two Aboriginal communities in Western Australia	cross-sectional	May 1999 and Sept 2000	Subjects aged 5 yrs and over, with 84 from the desert community and 209 from the tropical coastal community	Remote central desert community and a remote tropical northern coastal community	To compare respiratory symptoms, rates of asthma and levels of lung function in two remote communities with climatically different environments.	BMPC questionnaire (modified) administered by interview with responses cross-checked with clinical records: atopy (skin prick tests); lung function (FEV1 and FVC); airway hyperresponsiveness (methacholine challenge); IgE and white cell count measures.	Self-reported asthma. Wheezing was determined as wheezing in the last 12 months (current wheeze).	The prevalence of current asthma was 17%(M) and 12%(F) in < 18 yrs and 7%(M) and 20%(F) in adults in the tropics (TC), and 7%(M) and 0%(F) in < 18 yrs and 16%(M) and 26%(F) in adults in the desert (DC).	SOB and chest tightness was reported more frequently in the DC. No significant differences in cough, sputum, wheeze or diagnosed asthma. There were increased symptoms and reduced lung function found in the DC, but the presence of asthma was not related to the frequency of reported symptoms or lung function. Lung function tests showed higher scores in the TC. Differences in symptoms and lung function not explained by diagnosed asthma, atopy, white cells, IgE or increased smoking - other environmental factors such as infection may be responsible for the differences. Presence of a cough productive of purulent sputum was high in both groups (20-40%).
ABS 1994	4190.0 National Aboriginal and Torres Strait Islander Survey 1994	cross-sectional national survey	Apr - July, 1994	Over 15,700 Indigenous people from 6,700 dwellings selected in the sample.	urban and rural Census collection districts in every state and territory	The first nation-wide survey of A&TSI people - aim was to provide Indigenous people and Commonwealth and State governments with the most needed statistics covering a range of areas (social, health, economic, etc)	135,500 dwellings in selected districts approached to find 6,700 dwellings with ATSI peoples, random sample of these surveyed by indigenous interviewers. ABS consulted ATSI groups to ensure methods appropriate.	self-reported asthma	Asthma was reported as a current health condition in 15.3% of indigenous people surveyed (13.8% of males and 16.8% of females).	An estimated 56% of Indigenous males and 48% of Indigenous females aged 15 years and over were current smokers. This is in sharp contrast to the estimated prevalence in the total Australian population (27% of males and 20% of females).
ABS 1999	4806.0 National Health Survey: Aboriginal and Torres Strait Islander Results, Australia	cross-sectional national survey	1995	exact details unavailable, however notably 3681 Australians living in remote regions were not included	all states and territories in Australia	To present selected data about the health status of indigenous and non-indigenous Australians, their use of health services and health facilities, and health-related aspects of their lifestyle in 1995	Private dwellings were selected in every state and territory. ABS trained interviewers interviewed a selected adult from each household on one occasion who was asked to also respond to questions regarding minors less than 18 years of age who lived in the home.	self-reported asthma	Asthma most common condition for children < 5 yrs (17%), 5-14 years (23%) and 15-24 years (20%). Whilst not most common condition, reported by 16-17% of other indigenous adults. Overall, asthma was reported in 19% of ATSI population compared with 11.2% of total population.	Asthma medication was the second most commonly used medication (10%) after pain relievers (16%). Indigenous people were more than twice as likely as non-indigenous people to report having contact with a hospital in the past two weeks because of their health. Among adults > 18 yrs 51% of Indigenous people reported they were current smokers, compared with 23% of non-Indigenous adults. Overall, non-Indigenous adults aged 18 years or more were nearly four times as likely to report having private health insurance as Indigenous adults (43% compared with 11%).
ABS 2002	4715.0 National Health Survey: Aboriginal and Torres Strait Islander Results, Australia	cross-sectional national survey	Feb - Nov, 2001	26,863 persons were surveyed, including 3681 indigenous persons. Remote regions were included for the first time.	all states and territories in Australia	To present selected data about the health status of indigenous and non-indigenous Australians, their use of health services and health facilities, and health-related aspects of their lifestyle in 2001	Private dwellings were selected in every state and territory. ABS trained interviewers interviewed a selected adult from each household on one occasion who was asked to also respond to questions regarding minors less than 18 years of age who lived in the home.	self-reported asthma	Asthma was the 2nd most reported current health condition in ATSI (16%). 17% of ATSI people reported asthma as a long term health condition compared to 12% of non-ATSI. Asthma was more common in non-remote than remote areas, but results inconclusive due to study design.	NA

Media publications

There were a significant number of publications found in the print media. They largely describe the results of studies by Valery et al (2001), Veale et al (1996) and the ABS (1999). Table 6a and 6b outline the content of these media releases.

Table 6a: Summary of Media Reports found on Factiva database.

Summary of Media Reports			
Media	Date	Title	Summary of information in report
Australian Associated Press	1 June 2001, 372 words	Fed - Aboriginal children being hit with asthma - new study	Outline of the Valery et al (2001) study of asthma prevalence, comparing it to the study of Veale et al (1996)
Sydney Morning Herald	23 Feb 1988, 442 words	Asthma overdose	A short report on an incident at an Aboriginal College near Melbourne where seven students had to be rushed to hospital after overdosing on asthma tablets (Nuelin).
Australian Associated Press	24 June 2000, 364 words.	Fed - study debunks ATSI asthma myth - researcher	Discussion of Valery et al (2001) study, as presented at the Tropical Millenium Bugs conference in Noosa, Qld, 2000.
The Australian	24 August 1996, 303 words	Aborgines resistant to asthma	Report on the findings of the study by Veale et al (1996)
Townsville Bulletin	14 Sept 2001, 74 words	Day of fun for asthma awareness	A report about the Townsville Aboriginal and Islander Health Program which conducted an asthma awareness fun day including interactive activities.
Sydney Morning Herald	27 May 1996, 409 words.	Outback living may lower risk	A report on the study by Veale et al (1996). Also mentioned that other studies had found urban-dwelling Indigenous had higher rates of asthma, concluding that a range of possible explanations for this required further investigation.
The Australian	28 Jan 1999, 379 words.	Indigenous outstrip rest in ill health	A discussion about an ABS report (ABS, 1999) which showed that Indigenous Australian's have significantly poorer health than non-indigenous Australians, including a higher incidence of asthma.
Sydney Morning Herald	16 May 1989 372 words.	No Doctor for asthma attack	An article about the Royal Commission into Aboriginal Deaths in Custody in the case of Ms Nita Blankett, who died in custody from an asthma attack whilst serving a sentence for vehicle offences.

Table 6b: Summary of Media Reports found on Factiva database.

Summary of Media Reports			
Media	Date	Title	Summary of information in report
Reuters News	19 Nov 2002, 297 words	Australian Aborigines suffer more diabetes, asthma	Report on the Feb-Nov 2001 ABS survey of 3700 ATSI people which showed that Indigenous Australian's suffer a higher rate of diabetes, asthma, hearing problems, obesity and smoking.
Agence France-Presse	30 May 2001, 316 words.	Australian study shows high asthma levels in Indigenous people	A French report outlining the study by Valery et al (2001) which undermines previous findings that suggests Indigenous populations away from major cities are less prone to the disease.
Australian	9 Jun 2001, 102 words	Outback asthma rate is high	A report identical to the French report above.
Gold Coast Bulletin	1 June 2001, 102 words	Asthma theory rejected	A brief outline of the Valery et al (2001) study.
M2 PRESSWIRE	25 Feb 1999, 470 words	ABS: ABS report profiles Australia's children	A report on an ABS publication on Australian children, which mentions the overall prevalence of asthma at 16% for all Australian children. Not specifically a report on asthma in Indigenous populations.
Sydney Morning Herald	26 Jun 1998, 571 words	We're fat but in fine fettle, says study	An article on an AIHW report which showed that Australia is one of the healthiest countries in the world despite asthma in children and continued health problems in Indigenous and remote communities.
Courier Mail	1 Jun 2001, 530 words	City and country asthma rates equal	Report on the study by Valery et al (2001)
Courier Mail	14 Jan 1999, 479 words.	Injuries, asthma take their toll on Australia's children	An article about an AIHW report on children (possibly "Australia's Young People: Their Health and Wellbeing 1999"), that mentioned disadvantaged groups, such as Indigenous children, that had poorer health outcomes. Not specific to asthma and indigenous.

4.5 Discussion

This literature review was undertaken to answer the search question:

"What is the current level of knowledge in the literature around asthma in the Aboriginal and Torres Strait Islander population?"

In particular, we wanted to determine how many studies have been done in regard to asthma in the Indigenous Australian population, what findings have shown, what gaps exist in the current literature, and what interventions have been successfully proven.

The search strategy identified 12 descriptive studies along with a number of letters and abstracts. The quality of evidence, as defined by Sackett et al 2001), is Level 4 or below, with no randomised clinical trials yet undertaken. Prevalence studies have been undertaken in many of the states and territories of Australia, and in some cases have yielded conflicting results. This highlights that prevalence of asthma, and/or the aetiology of asthma, may be different across and within demographics (i.e. metropolitan/ rural/ remote) and different states and territories.

Asthma prevalence in children has been described in rural communities to be as low as 0.5% (Veale et al, 1996) and as high as 39.4%, similar to that of the local non-Indigenous children (Downs et al, 2001). In remote communities, 15.8% of children reported ever having asthma, with 12.4% reported wheezing in the previous year (Valery et al, 2001). In adults, prevalence has been described in remote communities as 7-20% and 16-26% (Verheijden et al, 2002), 8.5-15.2% (Bremner et al, 1998) and in rural communities as 3.3% (Veale et al, 1996). ABS surveys have described that in the overall Indigenous population asthma is reported as a current health condition by 15.3% (ABS, 1994) and 16% (ABS, 2002) of those surveyed.

Hospitalisation data for asthma as principal diagnosis in the NT showed that rural Indigenous children were admitted significantly less than urban non-Indigenous children (Whybourne et al, 1999). A WA study found that admissions for asthma were 3.1 times higher in Indigenous than non-Indigenous children, and rates were higher in non-metropolitan compared to metropolitan areas. Some trends were similar, though, in that asthma as the leading cause of admission was more common in metropolitan children compared to rural counterparts (who were more often admitted with pneumonia) (Williams et al, 1997). The statements made in the paper by Whybourne et al (1999) that "Asthma plays a far less significant role in the spectrum of disease affecting hospitalised ATSI children compared to non-ATSI children" (p.438) should have been qualified by the understanding that rural and remote children experienced greater barriers to accessing hospital services than their urban counterparts, which could have influenced findings.

Only one intervention study is reported (Chang et al, 2000), which outlines the success of providing specialist services through a local community controlled health service on Thursday Island, Queensland.

There are numerous gaps and divergent findings in the current literature around asthma in the Australian Indigenous population. As described, previous research and discussion has been around determining the prevalence of the condition, rather than testing or developing initiatives or interventions. Whether a definitive study to determine the prevalence of asthma across demographic regions of Australia should be commissioned is a point of contention. Recognising that asthma is a health problem in Indigenous communities, though the degree to which is still undecided, perhaps it is better to invest resources into studies that investigate interventions for asthma in this population in order to determine successful strategies. In this way, greater understanding of useful models of care for asthma management in the Australian Aboriginal and Torres Strait Islander population will be gained. The application of these models may help to improve symptom management of Indigenous Australians with asthma and in some way work towards addressing their highly recognised poor health status.

5.0 Narrative Summaries and Case Study

In order to describe the outcomes of the Asthma Program at PWHS using a different medium, and providing different perspectives, presented here are narrative summaries from key personnel, and an anonymous case study.

5.1 Narrative Summaries

It is essential in project review to include the viewpoints and opinions of all key stakeholders in order that a balanced and multi-factorial conclusion can be made about the successes and barriers to the Asthma Clinic at PWHS. Thus, what follows are the narrative summaries of personnel who were closely involved in the Asthma Program.

Aboriginal Health Workers

The AHW employed to coordinate the clinic was unavailable for comment at the time of reporting. However, another AHW commented that they appreciated the knowledge gained through the project with which to educate the local community. Furthermore, AHW's at the service appreciated the asthma education days and the opportunity to have input into the delivery of the service. One of the main barriers to asthma management at PWHS was identified as having only a small number of staff being trained in the Asthma Program – the AHW felt that asthma care and training should be a whole of service activity. The Pika Wiya Every Day Action Plan was highly regarded, as was the usefulness of the Short Wind resource (as it covers all client age groups).

Asthma Program Nurse Educator Secondment from the Northern Regional Paediatric Unit.

The Asthma Clinic, as with most other Aboriginal services is very opportunistic, in that if AHW's or other professionals are available to clients at that first contact, this is a marvellous opportunity to provide education, whether it be regarding asthma, diabetes, renal care or other health issues. You are less likely to get clients to return at a pre-arranged appointment time. Providing transport or pickup is an excellent opportunity. Here, education of all drivers is also important. The Pika Wiya Every Day Action Plans, originally developed from the Northern Regional Paediatric Units Plan, have been very successful once the AHW's had given their input in the development, and were educated and trained in asthma protocols so that they understood how to educate clients. Thus, these are providing to be a very useful tool. In terms of the 3+ Visit Plan, this wasn't

successful here as older clients didn't want to see the GP after the first initial appointment. Some clients were more accepting of seeing GP's, but most wanted to see the AHW's, thinking they could access medication more rapidly through the AHW or asthma educator nurse. After speaking to the local Division of General Practice, it seems they are also having trouble with clients trying to get them back for three 3 visits with a doctor. It would be easier if my registered nurse asthma educator position was a nurse practitioner role so the nurse could prescribe and dispense medication! I think that running a project from February to November would be a more ideal time. Appointments scheduled at the beginning of the week seemed to work best. Overall, the project has taught me a lot about partnerships, relationships, and how organisational limitations affect project outcomes.

**Student Support and Special Projects Officer
Based at PWHS, employed via partnership between Spencer Gulf Rural
Health School and PWHS**

From personal observation and reflection of the Asthma program the following points needed to be stated: At the time Pika Wiya Health Service Inc. was approached for this innovative project the service was going through a period of staff shortages and changes in management infrastructure, accepting an interim role in project support and mentoring on-site the initial stages of the project was quite difficult. Introducing the asthma project into core business for the service, knowing it was a very short-term project became a barrier for some staff. Timing of the project was also a barrier due to the wind down over December, January; unavoidable leave taken by project staff and no replacements available, meant the life of the project was probably reduced by 4 to 7 weeks. This including the fact these were part time positions cut real time down by more.

The following points need to be acknowledged as well as the future strategies Pika Wiya Health Service Inc is looking at.

- ✧ It was nearly 3 months into the project before Pika Wiya Management took an active role.

Project to become integrated into the Sharing Care Live Longer team who have responsibility for chronic disease and earlier intervention.

Continued employment of Asthma educator on weekly basis; seeking funds for position in chronic disease team with Asthma focus.

Come under Clinical supervisors staff for screening and referral.

- ✧ Changes in direction to the project reflected in poor numbers early in the project.

Short-term nature, Quality of life tools initially requested creating a barrier.

- ✧ Still no sense of multi-skilling or ownership of the project by other staff, regardless of training provided.

Staff to have a refresher and new staff trained and Asthma screening to be introduced in clinical screening and health assessments by AHW's then referred to Asthma team as part of all clinical AHW's role. Assuring staff this is core business and not a short-term project.

Presenting the project report to the board and to all staff, highlighting the achievements even though barriers existed.

- ✧ To be effective program needs to become core business, directly under Supervisor of clinics.

As above staff managed by Clinical supervisors will be expected to offer screening and referral.

- ✧ Sustainability needs to be determined outside of EPC payments, as the 3+Visit Plan does not suit our clients.

As noted by Pika Health service Inc staff, current Medicare and PIP payments do not reflect on the major role of AHW's in AMS's across the country, Barriers to the whole PIP requirements need to be reviewed if this form of model is to be sustainable and cost effective for Aboriginal communities.

- ✧ Various staff absences for lengthy periods of time.

The need for an Asthma Breath easy program is evident, but process and practice changes, which are slowly evolving, need to be in place and this sort of change could not be initiated in this short project time frame. The project due to short time frame and funding constraints tried to apply the Iga Warta principals with limited success.

A true study needs a minimum 3-year period, which then recognises the principals of Aboriginal Time and Space.

Considering the above constraints I firmly believe that this program is worth continuing and will slowly be ingrained in core business and accepted as such by the community.

Pika Wiya's commitment to still engage an asthma educator for 3 hours per week with AHW support for 2 days per week is evidence of this.

Further we hope sustainable positives are:

- ✧ Continue interagency discussions on Asthma Management.
- ✧ Continue to meet monthly with asthma management on the agenda with the Flinders and Far North Division of GP's.
- ✧ Continue at all staff meetings to prompt Doctors to refer to program.
- ✧ Bring Asthma management as a focus under the Health Promotion Committee
- ✧ Include Short Wind program resources at chronic disease sessions.
- ✧ Continue to use Pika Wiya action plans developed by workers in the service.
- ✧ Encourage all asthma clients to be referred to Sharing Health Live Longer program.

General Consensus from discussion with the AHW's at the service who attended the training say it was a good session gave them knowledge to use in their own lives and to tell their community.

**Nursing Unit Manager
Accident and Emergency Department, Port Augusta Hospital and Health
Service**

Only very few patients were referred from the Emergency Department to the Asthma Program at PWHS, as most of the Aboriginal patients presenting for treatment with exacerbation of asthma were already registered with the program. The Asthma SA Education day was invaluable to the Nursing Staff that attended (13 people from memory) and involved the use of puffers and medication as well as management programs for patients.

The Emergency Department involvement in the program has heightened the awareness of the complexities of asthma treatment and patient compliance. It has facilitated an increase in staff understanding of issues surrounding asthma in Aboriginal patients.

The program should be commended for their achievements and work in bringing this program successfully through all stages of the project.

5.2 Anonymous Case Study

Anonymous Client Case Study

A 61 year-old man, whom we will give the pseudonym 'Ted', attended the clinic on five occasions. Ted lives with extended family at Davenport Community, and attended the Davenport Clinic for each of his visits (as opposed to the 'town' PWHS clinic in the city). He has poor literacy skills in that he cannot read or write. An AHW collected Ted in a PWHS vehicle for three scheduled visits, and he presented to the clinic voluntarily for the two other visits. An AHW from Davenport Clinic goes to Ted's home every day to ensure he is taking his medication correctly. Ted has co-morbidities including diabetes, and also had a recent episode of pneumonia.

The following is an outline of Ted's visits at the Asthma Clinic:

Visit 1 (November 1st 2002): Referred to the Asthma Clinic by a GP at Davenport clinic. Spirometry was undertaken and education begun.

Visit 2 (November 12th 2002): Ted appeared to be much improved in terms of his understanding of asthma. Medications in the form of Ventolin nebulers were provided at this visit (Ted likes to use his home nebuliser). Asthma Clinic staff encouraged Ted to use a spacer to deliver his Ventolin because often electricity to the home in which he lives is cut off when power bills are not paid on time by other family members. Further education was given and an Action Plan was developed.

Second referral: During an inpatient hospital admission (between the 2nd and 3rd visit), Ted was referred to the Asthma Clinic for the second time (by hospital staff).

Visit 3 (November 19th 2002): Spirometry was undertaken a second time, showing similar results to the first visit. He was given further education on preventer and reliever use with the spacer as staff felt he was not using the delivery device well. The GP reviewed Ted's medications and changed his preventer from Flixotide to Seretide.

Visit 4 (10th December 2002): Ted self-reported to the clinic, and was given general education and information in preparation for a planned respiratory physician appointment in Adelaide later in the month.

Visit 5 (December 23rd 2002): Some misunderstanding around arrangements for the physician appointment in Adelaide made it not possible for Ted to attend the appointment this month, so Davenport Clinic staff organised for another scheduled appointment to be made on the physicians next available clinic day. Ted had another review of medication and general asthma management in the Asthma Clinic at this visit.

Clinic staff report Ted appeared to be able to understand and use the pictorial Pika Wiya Every Day Asthma Action Plan, with its coloured medication stickers. He understood that he should use the preventer and reliever every day, though he still tended to overuse the Ventolin due to habitual patterns. Ted continues to be managed and monitored daily by AHW staff based at PWHS's Davenport Clinic.

6.0 Findings

6.1 Achievement of objectives

In this section the extent to which the Asthma Project met its four objectives is outlined.

6.1.1 Objective 1

▫ **Objective 1:**

Measure the effect of implementing the National Asthma Council asthma management guidelines in a culturally appropriate manner in an Aboriginal Medical Service (assessing patient clinical indicators, self management skills, processes of care and service utilisation)

The way in which the NAC's 3+Visit strategy was implemented at PWHS is outlined under Objective 3. The effect of its implementation is described here.

The main positive outcome of this project is the increase in PWHS's capacity to manage asthma. The data describing clinical indicators are insufficient to draw meaningful clinical conclusions but the capacity building of PWHS outlined in the summary of outcomes in Table 14 is evidence of the benefits of undertaking this project.

A. CLIENT CLINICAL INDICATORS

Summary characteristics of respondents

A total of 19 clients who had completed their three visits had clinical details recorded and available for analysis. Sample characteristics of the sample are summarised in Table 7. Overall, the age of patients ranged from 2 to 74 years with a median age of 52 years (SD, 25.78). Sixty eight percent (13) of patients were female and 32% (6) were males. Forty two percent (8) of patients suffered from a co morbidity. The reader should note that a patient could suffer from more than one co-morbidity. The majority of patients (76%, 13) were referred to the clinic by a PWHS general practitioner.

Table 7: Summary characteristics

Variable	Response	Percent (n)
Age of patient at first asthma clinic visit	≤10 years	31.3 (5)
	11 – 59 years	43.8 (7)
	≥60 years	25.0 (4)
	Total	100.0 (16)
	Missing	3
Gender	Male	31.6 (6)
	Female	68.4 (13)
	Total	100.0 (19)
Does the patient suffer from any co-morbidity	Yes	42.1 (8)
	No	26.3 (5)
	Not recorded	31.6 (6)
	Total	100.0 (19)
Specify the co-morbidity	Obesity	7.1 (1)
	Back pain	7.1 (1)
	COAD	14.3 (2)
	Hypertension	7.1 (1)
	Bronchial problem	14.3 (2)
	Pneumonia	7.1 (1)
	Type II diabetes	14.3 (2)
	Chest infection	7.1 (1)
	Peptic ulcer	7.1 (1)
	Hay fever	7.1 (1)
	Chronic chest problem	7.1 (1)
	Total	100.0 (14)
Referral to the clinic	GP referral (from Pika Wiya)	76.5 (13)
	GP referral (outside Pika Wiya)	0
	Self referral	17.6 (3)
	Referral from A&E department	0
	Referral from Paediatric unit	0
	Referral from Hospital ward	0
	Referral from Sharing Health Care Worker	0
	Other	5.9 (1)
	Total	100.0 (17)
	Missing	2
Asthma severity	Mild	21.1 (4)
	Moderate	52.6 (10)
	Severe	26.3 (5)
	Total	100.0 (19)
Nature of asthma	Perennial	42.1 (8)
	Seasonal	42.1 (8)
	Perennial with seasonal exacerbation	5.3 (1)
	Diurnal variation	0
	Relation to exercise	10.5 (2)
	Total	100.0 (19)

The adequacy of inhaler, spacer and peak flow techniques, as well as the frequency with which patients record peak flow results are presented in Table 8. Due to a lack of standardized recording of spirometry results by the treating AHW and RN, and the refusal by a number of patients to undertake spirometric assessment, spirometry results have not been presented in this report.

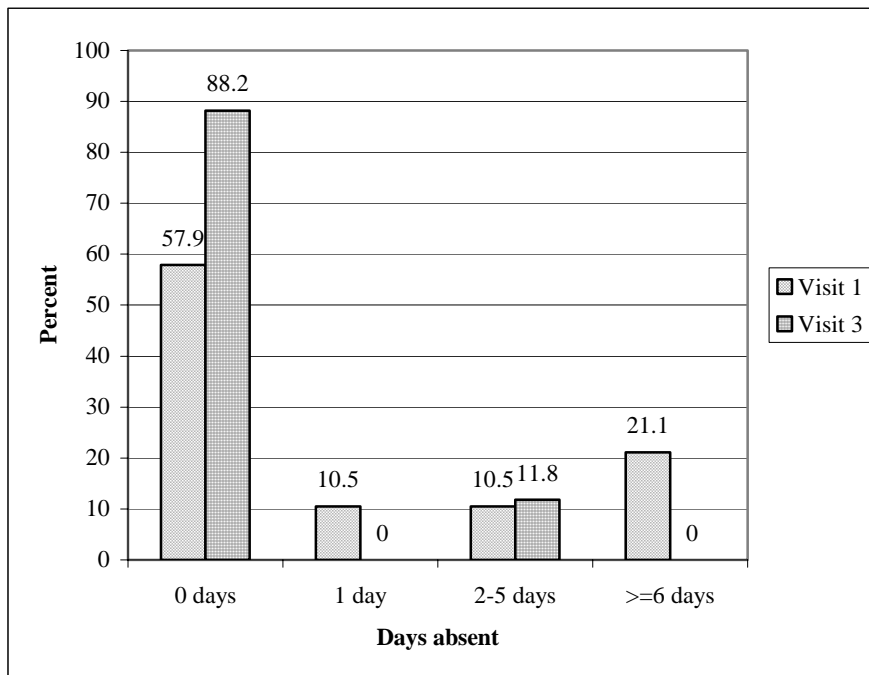
Table 8: Delivery technique and Peak Flow

Variable	Response	Percent (n)
Is inhaler technique adequate	Yes	21.1 (4)
	No	78.9 (15)
	Total	100.0 (19)
Do you use a spacer	Yes	42.1 (8)
	No	57.9 (11)
	Total	100.0 (19)
If yes, is spacer technique adequate	Yes	62.5 (5)
	No	37.5 (3)
	Total	100.0 (8)
Is peak flow technique adequate	Yes	11.8 (2)
	No	88.2 (15)
	Total	100.0 (17)
	Missing	2
Do you record peak flow results	Never	85.7 (12)
	Occasionally	0
	Half of the time	0
	Most of the time	14.3 (2)
	Always	0
	Total	100.0 (14)
	Missing	5

Figures 3 to Figure 5 present a comparative analysis of questions asked in both visit 1 and visit 3. The reader should note that in visit 1 patients were asked to document the time absent from normal activities, the number of GP consultations and hospital admissions over a 4 month period, whilst in visit 3 they were asked to document these for the period since visit 1.

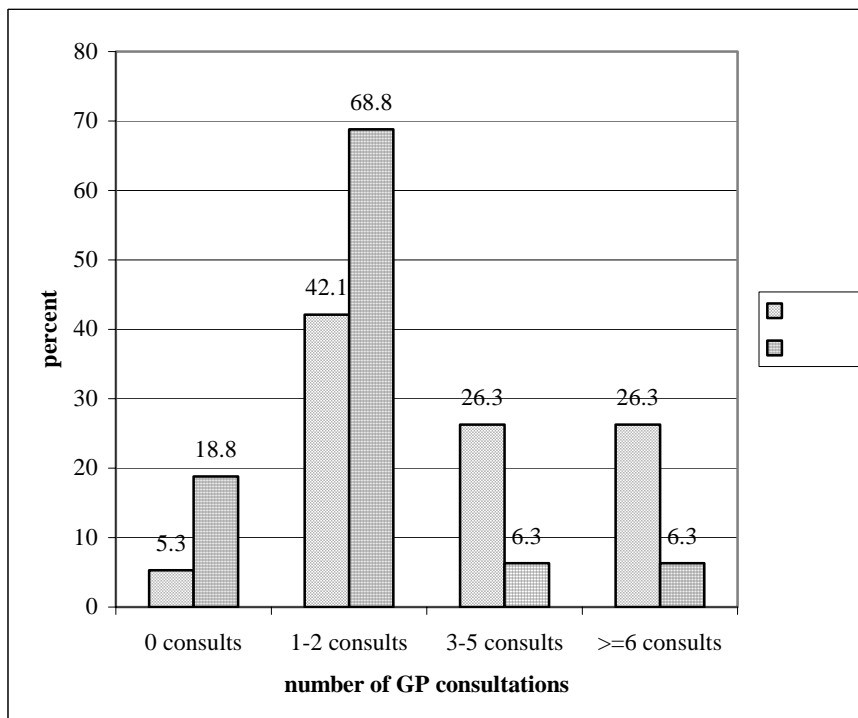
As shown in Figure 3, a larger proportion of patients (88%) had no days absent from normal activities in visit 3 compared to 59% in visit 1.

Figure 3: Number of days absent from work, school and normal activities



Since clients were attending scheduled visits with the GP as part of the 3+Visit Plan, the results presented in Figure 4 are confounded by the trial method (i.e. clients may have reported increased GP visits because of the 3+Visit strategy, and not because they were unwell). In hindsight, a better measure would have been to ask clients about the number of *unplanned* GP visits.

Figure 4: Number of GP consultations



In visit 1, clients were asked about the number of hospital admissions (general ward/high dependency) they'd had in the *last 4 months*, whilst in visit 3 the number of admissions *since Visit 1* was asked. Figure 5 shows that the number of hospital admissions reported in visit 3 had decreased in comparison to the number reported in visit 1.

Figure 5: Number of hospital admissions

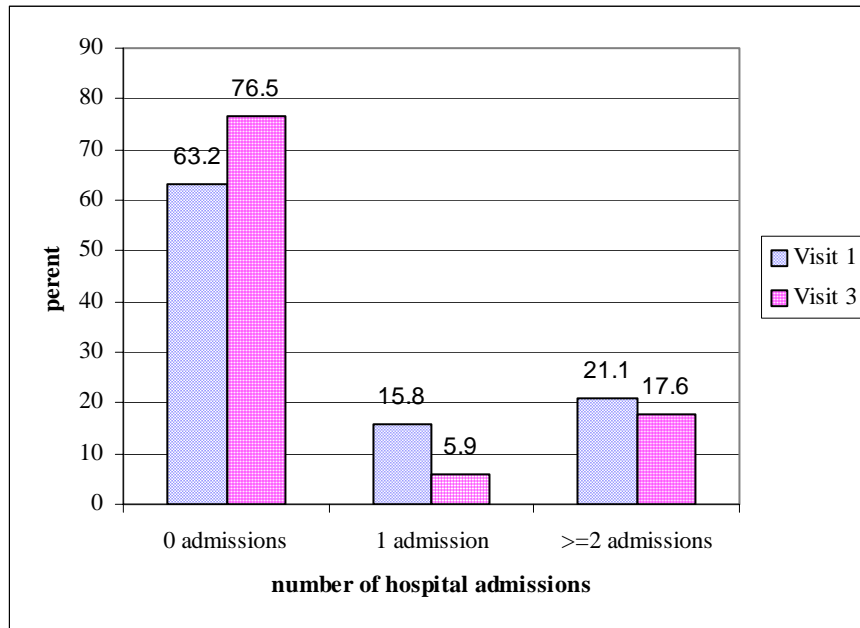


Table 9 presents a variety of data including the symptomatic experiences of patients. An important finding is that by visit 3 more patients noted the absence of nocturnal asthma (16.7% in visit 1 to 35.3 by visit 3). Furthermore, more patients reported the absence of asthma on waking by visit 3 (15.8% in visit 1 to 31.3% by visit 3). By visit 3, more patients reported infrequent use of the bronchodilator (11.1% in visit 1 compared to 23.1% by visit 3). The proportion of patients reporting that their wheeze/cough limits their physical activity everyday decreased by visit 3 (27.8% in visit 1 compared to 20.0% by visit 3).

A variety of questions regarding factors that trigger asthma were asked in both visit 1 and visit 3. A large proportion of patients in visit 1 reported that viral respiratory infections triggered their asthma (63.2%, 12); changes in weather, exposure to cool air (42.1%, 8) and exercise triggered their asthma (36.8%, 7). Interestingly, no patients reported that drugs, or food, food additives or colourings triggering their asthma. The responses were similar in visit 3.

Patients completed an asthma knowledge quiz at Visit 1 and 3. The median score obtained on the asthma knowledge questionnaire in visit 1 was six (ranging from 1.5 to 9), which increased to eight (ranging from 4 to 10) by visit 3.

Table 9: Clinical details

Variable	Response	Visit 1 Percent (n)	Visit 3 Percent (n)
Asthma Knowledge and Self confidence questionnaire completed	Yes	63.2 (12)	29.4 (5)
	No	21.1 (4)	70.6 (12)
	Only Self confidence questionnaire completed	15.8 (3)	
	Total	100.0 (19)	100.0 (17)
	Missing	0	2
Wheeze, tightness, or cough:	Occasionally	15.8 (3)	23.5 (4)
	Most days	68.4 (13)	52.9 (9)
	Every day	15.8 (3)	17.6 (3)
	Absent	0	5.9 (1)
	Total	100.0 (19)	100.0 (17)
Missing	0	2	
If your wheeze, tightness, or cough is occasional is it due to:	Viral infection	0	0
	Seasonal	0	0
	Other	100.0 (2)	100.0 (3)
	Total	100.0 (2)	100.0 (3)
	Missing	1	1
What is the other activity	Exercise	50.0 (1)	33.3 (1)
	Infrequent	50.0 (1)	0
	Change of weather	0	66.7 (2)
	Total	100.0 (2)	100.0 (3)
Nocturnal asthma	Absent	16.7 (3)	35.3 (6)
	Less than once a week	44.4 (8)	35.3 (6)
	More than once a week	38.9 (7)	29.4 (5)
	Total	100.0 (18)	100.0 (17)
	Missing	1	2
Asthma on waking	Absent	15.8 (3)	31.3 (5)
	Less than once a week	31.6 (6)	31.3 (5)
	More than once a week	52.6 (10)	37.5 (6)
	Total	100.0 (19)	100.0 (16)
	Missing	0	3
Bronchodilator use	Infrequent	11.1 (2)	23.1 (3)
	Needed most days	44.4 (8)	30.8 (4)
	More than 3-4 times a day	44.4 (8)	46.2 (6)
	Total	100.0 (18)	100.0 (13)
	Missing	1	6
Wheeze/cough limits physical activity	Never	5.6 (1)	6.7 (1)
	Occasionally	38.9 (7)	33.3 (5)
	Most days	27.8 (5)	40.0 (6)
	Every day	27.8 (5)	20.0 (3)
	Total	100.0 (18)	100.0 (15)
	Missing	1	4

Table 10 presents data regarding medication use. Ventolin was the most common reliever medication (84%, 16 in visit 1).

Table 10: Medications

Variable	Response	Visit 1 %(n)	Visit 3 % (n)
What reliever do you use	Ventolin	84.2 (16)	82.4 (14)
	Asmol	10.5 (2)	11.8 (2)
	Not taking any reliever	5.3 (1)	5.9 (1)
	Total	100.0 (19)	100.0 (17)
	Missing	0	2
Dose of using reliever	1 to 2 puffs	0	6.3 (1)
	1 puff	11.1 (2)	0
	2 puffs	38.9 (7)	31.3 (5)
	3 puffs	0	6.3 (1)
	4 puffs	5.6 (1)	6.3 (1)
	5 to 6 puffs	0	6.3 (1)
	Ø10 puffs	0	6.3 (1)
	As necessary	0	6.3 (1)
	Not recorded	33.3 (6)	31.3 (5)
	2.5 mgs	5.6 (1)	0
	Total	100.0 (18)	100.0 (16)
Frequency of using reliever	1 time a day	0	33.3 (1)
	2 times a day	0	33.3 (1)
	3 times a day	33.3 (1)	0
	4 times a day	66.7 (2)	33.3 (1)
	Total	100.0 (3)	100.0 (3)
	Missing	15	13
What preventer do you use	Pulmicort	5.3 (1)	0
	Flixotide	26.3 (5)	26.7 (4)
	Seretide	26.3 (5)	33.3 (5)
	Intal	5.3 (1)	0
	Not taking any preventer	36.8 (7)	40.0 (6)
	Total	100.0 (19)	100.0 (15)
Dose of using preventer	Missing	0	4
	Not recorded	16.7 (2)	44.4 (4)
	2 puffs	25.0 (3)	22.2 (2)
	125 ml	0	11.1 (1)
	250 ml	25.0 (3)	11.1 (1)
	50/25	8.3 (1)	0
	500/50	25.0 (3)	11.1 (1)
	Total	100.0 (12)	100.0 (9)
Frequency of using preventer	1 time a day	66.7 (2)	0
	2 times a day	33.3 (1)	50.0 (1)
	4 times a day	0	50.0 (1)
	Total	100.0 (3)	100.0 (2)
	Missing	9	7
Oral steroids	Prednisolone	10.5 (2)	0
	Not taking oral steroids	89.5 (17)	100.0 (15)
	Total	100.0 (19)	100.0 (15)
	Missing	0	4

Table 11 indicates a trend towards an increase in patient compliance with taking medication, though there is a greater proportion of missing data at Visit 3.

Table 11: Compliance

Variable	Response	Visit 1 Percent (n)	Visit 3 Percent (n)
Do you take your asthma medication as prescribed/ as often as prescribed	Always	55.6 (10)	64.3 (9)
	Most times	33.3 (6)	28.6 (4)
	About half of the time	5.6 (1)	7.1 (1)
	Occasionally	0	0
	Never	5.6 (1)	0
	Total	100.0 (18)	100.0 (14)
	Missing	1	5

Clients were asked at the beginning of Visit 2 how they were feeling and if they had any questions. The median number of weeks since visit 1 (data gathered at visit 2) was 2 weeks. The patient responses to the questions, as documented by the RN/AHW, are outlined below.

How the patient had been feeling: *Better; Child has really good asthma management; Client has improved – no further medication; General health only average – some problems; Appear to have improved (coughing and shortness of breath); Has been well; Lots of cough and woozing in the chest; More active; Much better, using less reliever medication; Much better, using less Ventolin; Not much better (did look improved to me); client says he's the same; Patient has been fine with asthma; Short of breath; Shortness of breath; sleeping at night; feels the same; Tightness in chest; needs a chest x-ray; Unwell; Unwell, patient has asthma attack and was in hospital.*

Patient questions: *Everything is fine, I gave patient asthma pamphlets about house and dust mites; Mother would like more education about using a spacer; Needs medication, ran out of supply; Okay till start to cough, it comes on worse; Received school plan and medication plan; Refused did not wait for appointment; What's it like to use a spacer*

B. CLIENT SELF MANAGEMENT SKILLS

Patients completed a self-confidence survey in visit 1 and visit 3. As noted in Table 3, 78.9% (15) of patients completed a survey at visit 1 and only 29.4% (5) completed the survey at visit 3. Results are presented in Table 12.

Anecdotally, one client spoke of the usefulness of the simple Asthma Action Plan in managing her child's asthma. The plan gave her the confidence to increase medications when her child became unwell.

Table 12: Self confidence survey

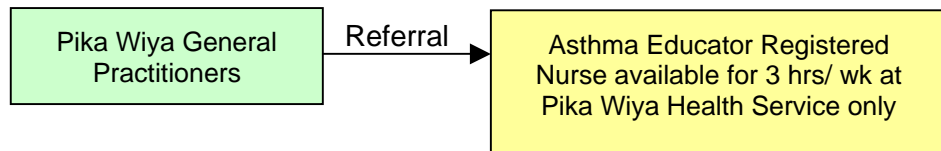
Variable	Response	Visit 1 Percent (n)	Visit 3 Percent (n)
I have confidence in my ability to cope with an asthma attack	Always	13.3 (2)	20.0 (1)
	Most of the time	53.3 (8)	60.0 (3)
	Not often	26.7 (4)	0
	Never	0	0
	Don't know	6.7 (1)	20.0 (1)
	Total	100.0 (15)	100.0 (5)
	Missing	4	14
I feel confident in managing (my/my child's) asthma	Always	20.0 (3)	0
	Most of the time	66.7 (10)	80.0 (4)
	Not often	6.7 (1)	0
	Never	0	0
	Don't know	6.7 (1)	20.0 (1)
	Total	100.0 (15)	100.0 (5)
	Missing	4	14
At the first sign of an asthma attack I feel (my/my child's) panicky and frightened	Always	6.7 (1)	20.0 (1)
	Most of the time	66.7 (10)	0
	Not often	13.3 (2)	60.0 (3)
	Never	6.7 (1)	20.0 (1)
	Don't know	6.7 (1)	0
	Total	100.0 (15)	100.0 (5)
	Missing	4	14
Even when I feel/my child feels well, I worry about (me/him/her) having an attack of asthma	Always	20.0 (3)	0
	Most of the time	46.7 (7)	20.0 (1)
	Not often	20.0 (3)	40.0 (2)
	Never	6.7 (1)	40.0 (2)
	Don't know	6.7 (1)	0
	Total	100.0 (15)	100.0 (5)
	Missing	4	14
I have confidence in my/my child's AHW/ Nurse/ GP's management of (my/his/her) asthma	Always	28.6 (4)	0
	Most of the time	64.3 (9)	80.0 (4)
	Not often	0	20.0 (1)
	Never	0	0
	Don't know	7.1 (1)	0
	Total	100.0 (14)	100.0 (5)
	Missing	5	14

C. PROCESSES OF CARE

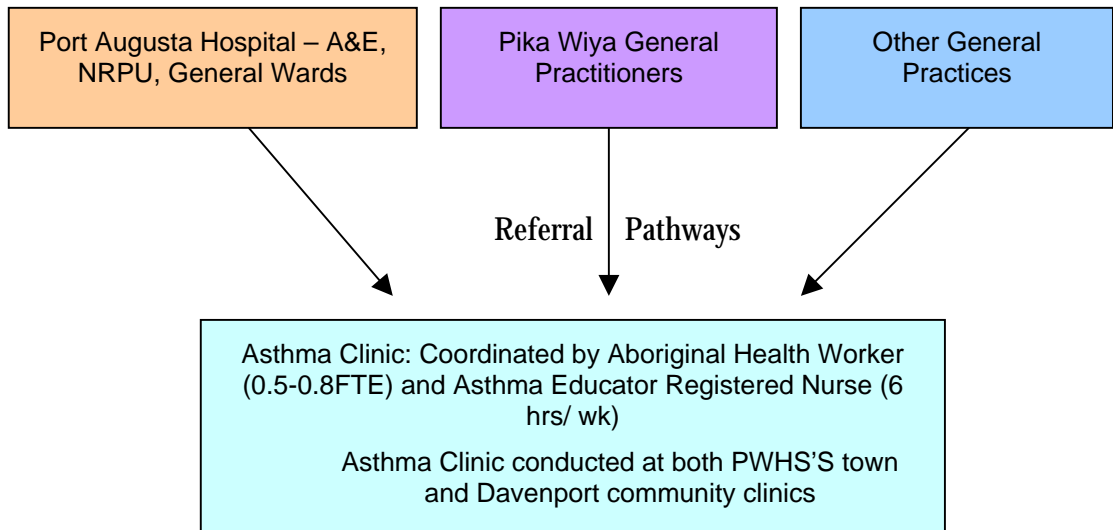
The processes of care for asthma management at PWHS developed significantly during the course of the Asthma Project. Figure 6 outlines the systems for asthma management at the health service prior to the project, and at the completion of the project.

Figure 6: Processes of Care for Asthma Management at PWHS

PRIOR TO AIM PROJECT (BASELINE):



DURING AIM PROJECT:



However, the processes of care established during the project were not sustainable, due to problems with acquiring long term funding through OATSIH (a request for ongoing support was not accepted) and inaccessibility of PIP funding. Therefore, since the conclusion of project funding, the clinic has been forced to return to its original model.

D. SERVICE UTILISATION

HOSPITAL UTILISATION

In order to review Indigenous client utilisation of the Port Augusta Hospital and Regional Health Service, client separation data (i.e. number of patient discharges from hospital) was obtained from the Director of Medical Services and is presented in Table 13. Data was obtained up to the month of February 2003 (due to availability of hospital statistics at time of reporting), although the Asthma Clinic continued officially until the first week of April, 2003. Unfortunately, Indigenous client utilisation of the A&E department could not be obtained due to absence of a race field in the current A&E register report. Therefore, data presented here describes Aboriginal and Torres Strait Islander clients who were admitted to hospital wards.

Table 13: Client utilisation of Port Augusta Hospital and Regional Health Service

Financial Year (Jun – Jul)	Diagnosis	Description	Number of Separations	Total for the Year
2000-2001	J459	Asthma unspecified	1	31
2000-2001	J46	Status asthmaticus	30	
2001-2002	J459	Asthma unspecified	12	37
2001-2002	J46	Status asthmaticus	25	
2002-2003 (up to Feb)	J459	Asthma unspecified	1	24
2002-2003 (up to Feb)	J46	Status asthmaticus	12	
2002-2003 (up to Feb)	J450	Allergic Asthma	10	
2002-2003 (up to Feb)	T486	Antiasthmatics not elsewhere classified	1	

Comparing the six-month period prior to establishing the Asthma Program at PWHS (March 2002-August 2002) with a six-month period that the Asthma Program was undertaken (September 2002- February 2003), we find that:

€# March – August 2002: 20 separations

€# September 2002 – February 2003: 17 separations

However, there are many confounding variables at play that could impact on these results. For example, the two periods cover different months of the year (with the first period over winter months), so differences in hospital admission data could reflect seasonal variations. For these reasons the data described in Table 13 and above do not provide any evidence as to the impact of the Asthma Project on hospital admissions.

ASTHMA CLINIC UTILISATION

At project completion, a total of 33 clients had become registered on the Asthma Program following referral by a general practitioner, from the hospital or via self-referral. A total of 20 clients had completed three visits, with three completing 2 visits, and 6 completing 1 visit. Four registered clients have not attended any visits due to moving residence, a changed diagnosis, or being managed by another doctor in other clinics. Some clients were seen 4-5 times whilst registered on the program as they voluntarily presented to PWHS outside of scheduled visits.

This compares with a total of 28 clients who were registered with the RN for asthma education during the first 6 months of 2002. These clients usually attended one education session at best, though many did not present at scheduled appointments).

The Asthma Program RN and AHW had expected greater number of clients during the course of the project, as they feel there is a significant prevalence of asthma in the local population. Barriers to clients becoming registered with the Asthma Program could possibly include the short time frame that the Asthma Program was officially up and running (7 months in total from September 2002 to the first week of April 2003); the impact of the quiet Christmas/ New Year period; limited timeframes within which to establish referral systems from the Port Augusta hospital, other local general practices and from within other programs coordinated through PWHS; lack of management infrastructure at PWHS at the time to guide the Asthma Program; staff absences; and the inexperience of the HW inhibiting his ability to personally recruit clients to the program.

Referrals to the program largely came from PWHS general practitioners, with two referrals from the hospital (from HDU and A&E) and one referral from another general practice.

In summary, whilst there were fewer clients registered in the Asthma Program than hoped, improvements in Asthma Clinic utilisation were evidenced by the greater number of people registered in comparison to the previous six month period, and the fact that each client was seen on multiple occasions rather than just a 'once-off'.

SUMMARY OF PROJECT OUTCOMES

In order to assist in the project evaluation, Table 14 compares the status of PWHS and the Asthma Program at baseline (July 30th, 2002) and compares it with the status at the conclusion of the project (April 4th, 2003).

Table 14 provides evidence of the significant progress that has occurred in asthma management at PWHS, and the progress that has occurred in encouraging health service providers (hospital, general practices, and Aboriginal Medical Service) to work together in providing services for the local Indigenous community.

Table 14: PWHS and Asthma Program at Baseline and Project Conclusion.

Baseline (July 30 th 2002)	Project Conclusion (April 4 th 2003)
☒ 28 clients were registered in the Asthma Clinic during the first 6 month period of 2002	☒ 33 clients were registered with the Asthma Program during the project, with 20 completing 3 visits, two completing Visit 2 and six completing Visit 1
☒ No AHW's have accredited Asthma Education training or develop Asthma Action Plans	☒ 11 AHW's attended workshops conducted by Asthma SA (a total of three days training) and have been trained in the development of Asthma Action Plans (with eight directly involved in designing the 'Pika Wiya Every Day Asthma Action Plan')
☒ No systems for referral have been established in order to refer clients from the Port Augusta Hospital or local general practices to PWHS	☒ The hospital gave approval for referral of patients to the Asthma Clinic for asthma education, following informed consent. ☒ Two clients were referred from the hospital and one from a local general practice
☒ An RN Asthma Educator runs the Asthma Clinic on a Wednesday morning for 2-3 hours, depending on the number of clients who attend their appointments (often get DNA's). There is no AHW support.	☒ The Asthma Clinic was staffed by both an AHW (0.5-0.8 FTE) and RN (6 hours per week) and is being conducted on Tuesdays (Davenport clinic) and Wednesdays (PWHS town clinic).
☒ No A&E nursing staff have been trained in asthma management or spirometry – they have acute asthma care training only	☒ 15 A&E and other nursing ward staff were trained by Asthma SA during a one-day workshop at the hospital
☒ Asthma patients see PWHS GP's for management, and are then referred for education with the RN	☒ The GP's now review all medication before referring patients to the Asthma Clinic for spirometry, education and Action Plan development (this plan must be authorised by the GP).
☒ No Asthma Action Plans had been developed for clients in the Asthma Clinic	☒ A total of 22 Pika Wiya Every Day Action Plans have been developed for clients (during their 'Visit 2') and one child's school management plan has also been developed.
☒ No Asthma Clinic was established at Davenport clinic	☒ Davenport clinic worked well, with clients from the city of Pt Augusta as well as local residents choosing to access services at this clinic, as it has a more flexible 'drop-in' approach with no appointments required.

6.1.2 Objective 2

☒ Objective 2:

Utilise current Indigenous-specific asthma education resources (Short Wind), identifying what other resources appropriate for Indigenous groups need to be developed

The project purchased five *Short Wind* flipcharts, one *Short Wind* poster, and one pack of *Short Wind* Action Plan stickers. The flipcharts were useful in educating clients. Whilst not always used with every client from cover to cover, it was referred to during client education where appropriate. The *Short Wind* Action Plans, however, were considered too simple and outdated for the local community.

The AHW and RN working in the Asthma Clinic recognised that they needed to develop an Action Plan suitable for the needs of PWHs clientele whose literacy can be poor. During the Asthma Education and Training workshops conducted by Asthma SA in August and September 2002, the Pika Wiya Every Day Asthma Action Plans were developed through collaborative effort by AHW's, the RN and Asthma SA. The Action Plan was developed from a model originally developed by the Northern Regional Paediatric Unit at the Port Augusta Hospital. After developing the first draft of the Pika Wiya Every Day Action Plan and trying it out with clients in the clinic, the nurse and AHW continued to revise and redraft the Action Plan throughout the project. A final draft has recently been developed and printed professionally and is included in Appendix 2. This will be available for purchase by other health services by contacting Pika Wiya Health Service on (08) 8642 9904.

6.1.3 Objective 3

▫ **Objective 3:**

Establish a best practice model for effective asthma management in Aboriginal Medical Services (with specific attention on the role of the Aboriginal Health Worker)

Perhaps the team was somewhat idealistic and over ambitious in believing a 'best practice' model could be created within the short time frames of the project. Rather than a best practice model, what was developed was the most suitable model for PWHS and the local community at the time of the project, and that could be established within a six-week planning period. This model proved to be successful in many respects, though experienced various barriers to greater success, which are outlined in Section 5.2.

The initial planning for the project occurred during a Planning Meeting at PWHS at the end of July, 2002. At this time, the collaborative project team met (in many cases for the first time), the pathways of care for an AMS using the 3+Visit Plan strategy were designed (See Figure 7), the baseline data was collected (i.e. existing pathways, client utilisation, etc), communication systems were established, project evaluation methods were developed and instituted, an appropriate AHW was identified (to be approached with an employment offer) and negotiations to increase the hours of the RN were initiated.

PROCESSES OF CARE

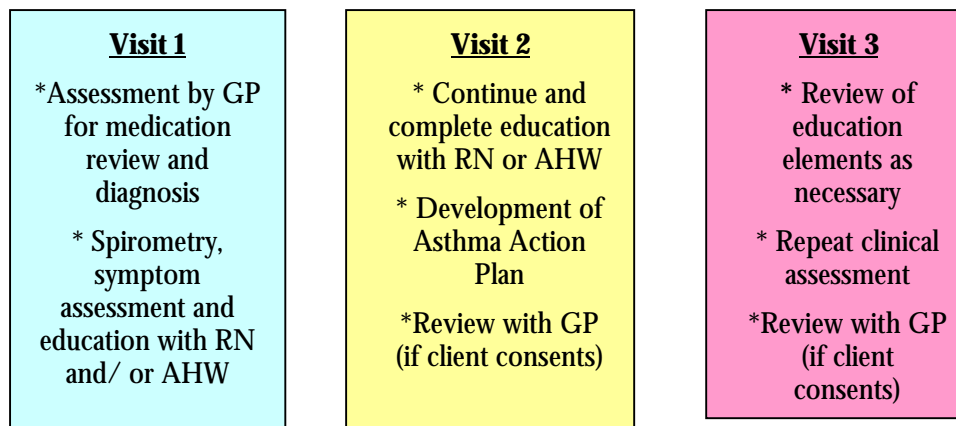
Establishing the Asthma Clinic

The Asthma Clinic was staffed after recruiting a newly qualified AHW to PWHS to work 0.5-0.8FTE, and following negotiations to increase the hours worked by the asthma educator nurse from the Port Augusta Hospital's Northern Regional Paediatric Unit from 3 to 6 hours per week (with half of this time funded by the project and the other half funded by PWHS as previously).

There was an established clinic room at PWHS for asthma education and this became the 'home' of the project Asthma Clinic. In October, a decision was also made to establish an Asthma Clinic day at Davenport Clinic.

The model for Asthma Clinic operations was discussed at an initial planning day. Following extensive discussions, there was agreement reached regarding the most appropriate model for PWHS and the roles and responsibilities of the AHW, GP and RN. This model is illustrated in Figure 7.

Figure 7: The 3+ Visit Plan Model for PWHS



During the planning day, and for a number of weeks thereafter, specific Asthma Clinic documentation was developed appropriate for the new 3+ Visit model, and appropriate for collecting data to evaluate the effectiveness of the program. These were developed with input from the Professor of General Practice (Steering Committee) and the RN. The processes for securely storing patient records and other information were also established.

Establishing Referral Systems

The processes and systems that support effective management of local ATSI people with asthma evolved throughout the project. At the Planning Day in July, the nature of the Asthma Program was discussed. The team decided that they wanted to provide Indigenous residents of Port Augusta and surrounding communities with an Asthma Program that was accessible for all, be they clients of PWHS or otherwise. Therefore, systems of referral from the Pt Augusta Hospital and Regional Health Service and general practices were discussed.

In the weeks following the Planning Day, significant efforts were invested in negotiating the nature of referral and the mechanisms through which this could occur with the Pt Augusta Hospital and the Flinders and Far North Division of General Practice. After many phone calls and discussions, it was agreed at the Medical Staff Society and Hospital Board of Directors meetings that the referral of clients (following informed consent) to PWHS Asthma Program could occur. Obvious barriers to acceptance of this referral system included issues around 'poaching' of clients, and claiming of PIP funding. Referral of clients from other GP's was later defined by the local Division of General Practice to be only for education, and not for Action Plan development.

The ability for other GP's to refer clients to the PWHS Asthma Program ensured that the service was accessible by all members of the local Indigenous community without exception or exclusivity. It was also designed to facilitate the prompt referral of any recurrent A&E attendees to the Asthma Program for evaluation of their management skills. Notably, the A&E staff at the Planning Meeting did acknowledge that this did not often occur at the Port Augusta Hospital, so we did not expect many referrals to come through the A&E department. At project completion only one referral had been made.

6.1.4 Objective 4

▫ **Objective 4:**

Develop a resource that outlines effective implementation strategies for asthma management specific to the rural Aboriginal Medical Service context (for distribution across rural Australia)

This report outlines all of the lessons learned throughout the course of this AIM project, which the team hopes may be meaningful to AMS's in other areas of Australia. Of particular interest to other health services might be the processes and systems developed for the Asthma Program at PWHS; the importance of building relationships and referrals systems with the local hospital and general practices; the identification of barriers to recruiting clients to the Asthma Program and ways to address these; sustainability issues; and AHW training methods and curricula. The team hopes that other Aboriginal Medical Services may be able to use this knowledge to inform the development of their own Asthma Program.

Other issues identified during the course of this project that, when remedied, might facilitate future sustainability of Indigenous Asthma Programs include AMS's inability to access PIP funding; lack of MBS items for Aboriginal Health Worker services; difficulties in utilising the 3+ Visit Plan strategy with Indigenous clients; and the lack of research undertaken on interventions for asthma in Indigenous communities.

This report will be made available on the PWHS website, at <http://www.pikawiya.com.au/specialised-programs.asp#asthma>. The Pika Wiya Every Day Asthma Action Plans can be obtained by contacting PWHS on (08) 8642 9904.

6.2 Barriers to Optimal Asthma Management

Barriers to effective asthma management were identified in developing the original proposal for this project, again at the beginning of the project through surveying AHW's working at PikaWiya, and during the course of the project. An overview of barriers at the local level, and interventions utilised to address these, is discussed. Barriers identified at a national level are also described, with suggested solutions to these barriers identified where possible.

BARRIERS AT THE LOCAL LEVEL

Barrier 1: Cultural differences between GP's/ RN asthma educator and PWHS clients

Intervention: Create an asthma management pathway that promotes the AHW as the key health professional in the process. The pathway includes an initial assessment by GP followed by education and management by the AHW and/ or RN.

Barrier 2: Lack of AHW's involved in and trained in asthma management

Intervention: Education and training of AHW's in asthma management by Asthma SA and so that the AHW's could be responsible for client assessment, education and development of asthma management plans

Barrier 3: Lack of utilisation of primary care services by Indigenous people

Intervention: Local A&E department asked to identify and refer (following informed consent) poorly controlled asthma patients who recurrently attend A&E to PWHS (though it was discovered that there were few clients fitting this category); creation of two asthma clinics (at PWHS 'town' clinic and Davenport clinic); providing home visit and transport services in order to increase opportunities for clients to access services.

Barrier 4: Lack of Indigenous-specific asthma management resources utilised at PWHS.

Intervention: Purchase of the 'Short Wind' asthma education resource from Asthma NT and encourage AHW's, the RN and GP's to become familiar with its uses, and to incorporate it into asthma education where appropriate. Also, identification of other Indigenous-specific resources that need to be developed. Finally, development of the Pika Wiya Every Day Asthma Action Plan followed by professional printing.

Barrier 5: Difficulty in promoting self-management skills due to language/literacy barriers

Intervention: Development of a laminated Action Plan, with pictorial instructions for prescribed medication dosages (rather than written instructions).

Barrier 6: Lack of management support to AHW coordinating the Asthma Program due to staff changes at PWHS.

Intervention: Available management staff provided what support they could, though there were times when staff left the organisation where support was limited.

Barrier 7: Lack of experience of AHW coordinating the Asthma Clinic (i.e. Since an AHW had to be recruited at short notice following acceptance of our application, this necessitated the employment of a newly qualified AHW).

Intervention: The AHW was given extensive training in asthma management and was provided with clinical support by the RN where possible. This barrier was confounded by the lack of management support available at Pika Wiya during the project period.

Barrier 8: Poor client attendance at scheduled appointments

Intervention: The creation of an asthma clinic day at Davenport clinic, transport services provided, home visits offered, reminder calls made, Asthma Clinic days changed to earlier in the week so that they didn't collide with pension days.

Barrier 9: Lack of referral systems between programs at PWHS

Intervention: The client assessment forms at PWHS now have a section to be completed that includes the identification of other programs the client should be referred to, in order to remind the treating health professional to arrange referral of the client to the appropriate service.

Barrier 10: Lack of backfill when the Asthma Program AHW was on leave

Intervention: This was not addressed during the project, but will need to be dealt with when establishing a sustainable Asthma Program at PWHS.

Barrier 11: Lack of time to create a sustainable clinic at PWHS (12 months is not long enough when the health service is already overwhelmed by the extent of services they provide).

Suggested Intervention: PWHS attempted to access ongoing funding through OATSIH but was unsuccessful. The health service is now working on developing a model that can be incorporated into the core business of the service, utilising general clinic AHW staff.

BARRIERS AT THE NATIONAL LEVEL

Barrier 1: The inappropriateness of mainstream asthma management resources for Indigenous clients (such as the NAC's Asthma Action Plan, which has extensive and complex language).

Intervention: Development of the Pika Wiya Every Day Action Plan

Barrier 2: Lack of indigenous-specific strategies for asthma management. (E.g. the 3+ Visit Plan is reliant on GP's, which many AMS' do not have and many Indigenous clients elect not to see).

Suggested Intervention: Undertake commissioned research on an Indigenous alternative to the 3+ Visit Plan, using the lessons learned from this and other AIM Indigenous projects to inform the research methodology. The use of qualitative methodologies to undertake focus groups with various AMS's around the country could possibly be useful.

Barrier 3: Difficulties in creating sustainable Asthma Programs in AMS's due to inaccessibility of Practice Incentive Program (PIP) funding (due to some AMS's not having GP's, clients refusing to see GP's at every visit, and the provision of home visits by AHW's).

Suggested intervention: An alternative form of financial reimbursement for AMS's who successfully manage clients with asthma using an indigenous-appropriate model (such as that with GP, RN and AHW utilised in this project).

Barrier 4: Short term (<12 months) funding for asthma projects, which fail to promote sustainable change and to support health services and communities who attempt to improve services for Indigenous people with asthma.

Suggested intervention: Provide long term support (three years) to selected AMS's who provide evidence of their ability to undertake projects that will create sustainable programs. Of course, barriers to sustainability (such as inaccessibility of PIP funding) need to be addressed so that sustainability can be achieved.

6.3 Project material produced

The project material that has been produced during the AIM Asthma Project includes the following:

- ✧ Pika Wiya Every Day Asthma Action Plan (See Appendix 2)

The AHW's and Asthma Clinic RN, with the help of Asthma SA, worked together to develop the Pika Wiya Every Day Asthma Action Plan. This plan built on resources previously developed by the Northern Regional Paediatric Unit, Port Augusta Hospital and Regional Health Service.

- ✧ PWHS Asthma Clinic Promotional Pamphlet (See Appendix 3)

- ✧ Aboriginal Health Worker Education and Training Curriculum (See Appendix 4)

Asthma SA, building on a training package they had previously used whilst conducting training at Nunkuwarrin Yunti (a metropolitan Aboriginal Medical Service in Adelaide, SA) developed an AHW training curriculum appropriate for PWHS.

The assets acquired during the project included the *Short Wind* products (flip charts, poster and action plan stickers).

7.0 Discussion

Primary Health Care Strategies

Primary health care (PHC) as defined in the Alma Ata Declaration (WHO and UNICEF, 1978) was 'conceived as a comprehensive strategy that would not only include a people-centred approach to health services, but would address the social and political factors that influence health' (Werner, 1994, p.5). The primary health care response to asthma in the general Australian population has been notably significant in recent years. However, specific initiatives for the Indigenous population have been limited.

Comprehensive primary health care (CPHC) interventions aim for sustained improvements in people's lives and recognise that health is influenced not only by health services but also by a multitude of other factors including income, education, housing, sanitation and motivation. This approach recognises health improvements come only after a long period in which changes must occur at both individual and community levels (Rifkin and Walt, 1986). The importance of the CPHC model for Indigenous populations has previously been described by the Commonwealth government in the document *Better Health Care – studies in the successful delivery of primary health care services for Aboriginal and Torres Strait Islander Australians* when stating that 'A comprehensive approach to primary health care has contributed to significant health improvements for Indigenous populations in countries comparable to Australia, such as the United States, Canada and New Zealand' (DoHA, 2001, p.22).

There has been little academic research undertaken on programs and policy for Indigenous individuals with asthma, with previous efforts focussing on quantifying the prevalence of the condition. The commissioning of four Indigenous AIM projects, which are 'fact finding' by nature, highlights that the current status of addressing the PHC needs of Indigenous Australians with asthma is still at an investigative stage rather than a policy or program development stage. Whilst the AIM projects promote community-level development and collaborative approaches that support CPHC ideology, their time-limited funding (less than twelve months) was inadequate to facilitate sustainable interventions and change. However, the projects will have aided in the identification of barriers to effective management that can inform the future development of CPHC strategies for asthma in Indigenous communities.

Barriers to effective management of asthma in Indigenous Australians

There are many barriers to effective management of Indigenous Australians with asthma. Firstly, research findings are somewhat contradictory around prevalence and aetiology of asthma in this population, particularly when defining the prevalence across the demographics of remote, rural and urban areas. Whilst

studies have shown varying prevalence, though, there is sufficient anecdotal and research evidence to conclude that asthma is a current public health problem for Indigenous people in many areas of Australia. Certainly, Indigenous people themselves are reporting that asthma is one of the most common health conditions they experience (ABS, 1999). There has also been very little research undertaken to explore what interventions would be most successful in managing asthma in the Indigenous population. Therefore there is little guidance available for AMS's to assist in the development of successful asthma management strategies and programs.

The NAC's Six Step Asthma Management Plan was useful in guiding GP's, RN's and AHW's at PWHS in their management of clients with asthma. However, other NAC asthma management strategies, in their current form, were found to be less appropriate and needed modification in order to be useful for PWHS clients.

The model of the 3+ Visit Plan was very useful as a starting point, though it was found to be too GP-focussed and did not align with the attitudes of many Indigenous clients (who refuse to attend three visits, giving social and family commitments precedence over preventative medicine). As Indigenous people attend GP's at only one-third the rate of the general population (DoHA, 2001) a model that relies on at least three GP visits was found to be inappropriate at PWHS.

The NAC's Action Plan (NAC, 2002) was considered too complex for PWHS clientele. As the level of education of Indigenous Australians is less than the non-Indigenous population (ABS and AIHW, 1999), it is reasonable to assume that some Indigenous Australian's ability to read and comprehend the NAC's detailed Asthma Action Plan would be less than non-Indigenous counterparts. The project team therefore developed an alternative pictorial Pika Wiya Every Day Asthma Action Plan suitable for the local community.

The success of the project was limited by the short-term nature (<12 months) of AIM project funding, which was insufficient to produce sustainable change at PWHS. As described in The Iga Warta Agreement (HSRIP, 2003), respect for 'Aboriginal time and space' is an important principle to be observed in Indigenous research projects.

Other than these generic barriers, there were many local barriers to effective management of asthma at PWHS identified prior to and during the course of the project. Prior to the project these included the cultural differences between GP's and patients and the lack of AHW asthma management training. During the course of the project barriers included insufficient management infrastructure at PWHS; lack of occupational support and previous experience of the AHW coordinating the Asthma Program; poor client attendance at scheduled appointments; lack of referral systems between programs at PWHS; and failure to undertake succession planning and provide back fill for the AHW when on leave.

Recommendations for research

✘ **Investigate barriers experienced and approaches valued by AMS's in different Indigenous communities**

The lack of evidence around asthma management *interventions* needs to be remedied with the commissioning of research that further investigates the barriers to successful management and informs the development of appropriate health care models and strategies. The four Indigenous AIM projects have initiated this process. A qualitative approach could be used, utilising focus groups in AMS's across the country in various geographic areas, in order to describe the barriers experienced and approaches valued by AMS's in different settings.

✘ **Development of a set of guidelines for Indigenous Asthma Management**

AMS's are inhibited in their ability to develop interventional programs as they are busy with the responsibility of providing basic primary health care services and do not have resources to undertake research and development. It would be useful to undertake the development of a set of national guidelines that identify and suggest interventions that address generic barriers to effective asthma management. These guidelines for resource development, treatment pathways and strategies would at the very least give AMS's something to work from when developing a model appropriate for their community. It is imperative that generic initiatives are not thrust upon Indigenous communities – rather, initiatives must remain flexible so that AMS's can adapt them to meet local needs.

✘ **Developing an Indigenous-specific alternative to the 3+Visit Plan**

There needs to be developed an Indigenous model of the 3+Visit Plan strategy. This should be undertaken through a series of consultations with AMS management staff, multi-disciplinary health professionals and Indigenous consumers, and tried and tested in a range of settings prior to endorsement. It might be found that there is no suitable over-arching strategy, rather that a strategy needs to be flexible and fluid in order to accommodate local community needs. In any case, the strategy should incorporate review of the social and emotional needs of the patient (that often inhibit the patient from addressing medical concerns) and should be centred on a multi-disciplinary team (AHW, RN, GP) of health care providers.

✘ **Review of Practice Incentive Program and MBS items to support AMS's managing asthma patients**

The Practice Incentive Program, through which GP's are financially supported to utilise the 3+Plan, needs to be modified for Aboriginal Medical Services to enable equitable access to funding in order that Asthma Programs such as the one offered at PWHS can become sustainable. Similarly the lack of AHW MBS items needs to come under review, as described in the NAAP (DHAC, 2001).

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Appendix 1

READER Critical Appraisal Instrument (MacAuley et al, 1998)

Criteria	Possible score	Actual score
Relevance		(Tick ✓)
Not relevant to general practice	1	
Allied to general practice	2	
Only relevant to specialised general practice	3	
Broadly relevant to all general practice	4	
Relevant to me	5	
	Score	<input type="text"/>
Education		
Would certainly not influence behaviour	1	
Could possibly influence behaviour	2	
Would cause reconsideration of behaviour	3	
Would probably alter behaviour	4	
Would definitely change behaviour	5	
	Score	<input type="text"/>
Applicability		
Impossible in my practice	1	
Fundamental changes needed	2	
Perhaps possible	3	
Could be done with reorganisation	4	
I could do that tomorrow	5	
	Score	<input type="text"/>
Discrimination		
Poor descriptive study	1	
Moderately good descriptive study	2	
Good descriptive study but methods not reproducible	3	
Good descriptive study with sound methodology	4	
Single blind study with attempts to control	5	
Controlled single blind study	6	
Double blind controlled study with method problem	7	
Double blind controlled study with statistical deficiency	8	
Sound scientific paper with minor faults	9	
Scientifically sound paper	10	
	Score	<input type="text"/>
Evaluation (overall)	Total score	<input type="text"/>

Appendix 2




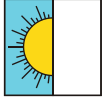


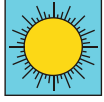


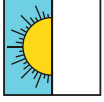





Pika Wiya Health Service Inc Every Day Asthma Action Plan

PIKA WIYA HEALTH SERVICE INC. EVERY DAY ASTHMA ACTION PLAN

Name:

GP:

Current Medications:

How I am Feeling?	Well 	Not as Well 	Very Unwell 
Morning 			 
Midday 			 
Tea 			 
Bedtime 			 

Action Plan Designed by Health Workers from Pika Wiya Health Service Inc. in consultation with the Northern Regional Paediatric Unit, Port Augusta South Australia. Telephone: 08 8642 9999. For an **EMERGENCY** ring **000**. Artwork by the Port Augusta Aboriginal Women's Centre depicts communities making tracks to the health centre for social emotional and spiritual well being. Funded by the Commonwealth Department of Health and Ageing. The Department has not reviewed the material and does not represent or guarantee in any way that its content are correct.

Appendix 3

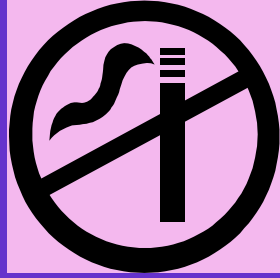
Pika Wiya Health Service Inc Asthma Clinic
Promotional Pamphlet

CONTENTS

* Pika Wiya Health
Service

* Do you know the name of
your prevention
medication

* Asthma



For further enquires

Please contact

William Warren

at Pika Wiya Health Service

on

(08) 8642 9923 or

(08) 8642 9999

or you can contact

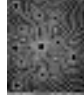
Jenny Bury

at Northern Regional

Pediatric Unit

on

(08) 8642 5725



PIKA WIYA HEALTH SERVICE

PIKA WIYA HEALTH
SERVICE

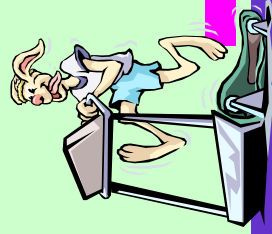
ASTHMA PROGRAM



40-46 DARTMOUTH STREET
PORT AUGUSTA
SA 5700

ASTHMA

- * Do you have a written Action Plan?
- * Have your doctor write an action plan for you.
- * It should list all your daily Asthma routines and what to do when your Asthma becomes worse or in the event of an acute attack.
- * Make sure your family and friends know where your plan is or have their own copy, including contact numbers for assistance or emergency help.
- * Discuss the seriousness of your condition and whether you should belong to an Ambulance fund.
- * Information gives you control.
- * Knowing more about Asthma helps you find the right questions to ask your Health worker or registered nurse and recognise when your Asthma management needs updating.



DO YOU KNOW THE NAMES OF YOUR PREVENTATIVE MEDICATION

- * These medication need to be taken daily and it may be some weeks before improvement is noticeable.
- * Taking more will not help in an acute attack.
- * (these are generally in a purple/orange or autumn colored container).
- * Do you know how your preventative medication works?
- * If you use a puffer, turbolaser or spacer, has your doctor checked your technique recently?
- * Using these device incorrectly can make you think you are getting your medication when you are not, and could lead to side effects. Have your doctor watch you use the device to confirm correct use.
- * Do you know what to do when an attack occurs?
- * Ask your doctors to go through all the steps in detail.



PIKA WIYA HEALTH SERVICE



- * Breathing life into a healthier community.
- * Ask your health worker or registered nurse about Asthma.
- * Do you understand what Asthma is?
- * Ask your doctor to explain what happens in your body during an Asthma attack.
- * Do you know what triggers your Asthma?
- * It would be helpful to think back on what occurred just prior to your attack (eg. visiting a friend with a pet). If this factor affects you the same way again, it can be classified as a trigger factor and should be avoided.
- * Do you know the names of your Asthma Medication.
- * Ask your doctor when to increase or to change your medication can be vital factor in controlling your Asthma. Discuss each medication you have been prescribed. Also ask your doctor to explain any possible side affect.
- * Do you know the name of your reliever medication and how it helps you.
- * Reliever medication gives immediate relief in the event of an attack. (It generally comes in a blue colored container).

Appendix 4

Asthma SA Education and Training Curriculum



Asthma South Australia 2 Day Asthma Management Program for Pika Wiya Health Service

AIMS

The aims of the program are:

- to explore the cause and triggers of asthma
- to identify and review current medical/pharmaceutical management of asthma
- to develop skills in recognising poor asthma control
- to be able to provide asthma first aid
- to explore and develop skills in writing and interpreting of asthma action plans
- to encourage the development of skills for the provision of effective asthma education
- to foster asthma education networks in the community

TARGET GROUP

The program is targeted primarily at health care workers employed at Pika Wiya Health Service who will be providing asthma education to people with asthma.

EDUCATION LINKS

The course is linked to the general education service offered by Asthma South Australia. Participants will receive a certificate stating that they have attended and demonstrated competency in basic asthma care.

RESOURCES

The program will utilise the Asthma Management Handbook 2002 and the Short Wind resources as base texts and teaching tools.

2 DAY PROGRAMME CONTENT

Day One

Target Group – all Pika Wiya Health Service Staff

Pathophysiology of Asthma

On completion of the session, participants will:

- ✧ understand the basic process of asthma
- ✧ understand the role of inflammation, bronchoconstriction and mucus production in asthma
- ✧ have a basic concept of the cellular response to asthma
- ✧ be able to identify common triggers for asthma

Medications and Delivery Devices

On completion of the session, participants will:

- ✧ have knowledge on the current medications and indications for use in treating asthma
- ✧ be aware of appropriate dose regimes and side effects
- ✧ be able to demonstrate correct device technique and be able to identify strengths and weaknesses and selection criteria of each device
- ✧ have an understanding of the reason for, technique and maintenance of spacers
- ✧ understand the role of nebulisers in asthma treatment

Lung Function Testing – Peak Flow

On completion of the session, participants will:

- ✧ be able to identify the role of peak flow monitoring
- ✧ be able to perform and interpret basic results
- ✧ understand the importance of regular monitoring of airway function
- ✧ be able to match peak flow results with asthma action plans

6 Step Asthma Management Plan

On completion of the session, participants will:

- ✧ understand the purpose of the 6 step plan
- ✧ understand the objectives of the 6 step plan
- ✧ be able to translate the plan into a working model for people with asthma (Asthma Action Plan)

3+ Visit Plan

On completion of the session, participants will:

- ✕ understand the purpose of the 3+ visit plan
- ✕ have an understanding of the benefits and limits of the 3+ visit plan
- ✕ understand the importance of re call

Asthma First Aid

On completion of the session, participants will:

- ✕ be competent to administer asthma first aid
- ✕ be competent in assessing the severity of an asthma event

Asthma Management of Children

On completion of the session, participants will:

- ✕ have knowledge on the acute management of asthma in children
- ✕ be able to identify the difference between the management of children and adults
- ✕ have knowledge on identifying asthma symptoms in children
- ✕ be able to assist in developing strategies to assist parents/guardians in managing their child's asthma

Asthma Management of the Adult

On completion of the session, participants will:

- ✕ understand the key issues identified in managing asthma in adults
- ✕ understand the medication management of adults with asthma
- ✕ be able to assist in developing strategies to assist the adult in managing their asthma

Day Two

Target Group – Pika Wiya Health Service Staff Selected for Intensive Role

Spirometry Workshop

On completion of the session and with support, participants will:

- ✧ understand the importance of calibration of spirometers
- ✧ be able to perform spirometry
- ✧ have skills in basic interpretation of spirometry

Asthma Action Plans

On completion of the session, participants will:

- ✧ in conjunction with the doctor, have basic skills to write asthma action plans based on peak flow measurements and symptoms
- ✧ be able to interpret asthma action plans
- ✧ be able to evaluate peak flows and symptoms

Asthma Education

On completion of the session, participants will:

- ✧ have basic asthma education skills to support people with asthma
- ✧ be able to utilise the Short Wind teaching program, to inform people about their asthma