Shared-care Approach to Asthma Management

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ABSTRACT

A program designed to reduce acute presentations to hospital and complications of asthma in a rural township. The program based upon shared care of the people with asthma between the GPs and asthma educators was developed and implemented in consultation with the Indigenous community. A similar program was developed for the non-Aboriginal community.

The program has become known as AMPS — Asthma Management Planning Services. The results for the first 6 and 12 months of the program are presented here.

INTRODUCTION

Asthma complications were identified as reasons for 20.4% of hospital presentations, with 48% of all presentations being Indigenous people\(^1\). Isolation restricts levels of patient care. The township has a small community hospital and a GP visits but does not reside in the town. Pharmacy and Ambulance facilities are 48 km distant. Gulargambone is situated 130 km north of Dubbo, 48 km west of Coonamble, 100 km east of Warren and 101 km west of Coonabarabran. The total population is 1068 people in the district, 489 live in town of whom 35% are Aboriginal or Torres Strait Islander. The medium weekly income averages $200.00 – $299.00\(^1\).

Aboriginal males were 1.79 times as likely to be admitted at any age and any cause compared to the NSW male admission rate for the 3-year period 1990–91 to 1992–93. The value for Aboriginal women was 1.69 times more likely for any age and any cause than that of NSW women for the same period\(^1\). The rates for admission at Gulargambone demonstrate this inequity\(^1\), that is nearly half of all the admissions which were attributed to asthma or asthma-related problems (24% of total admissions) were Indigenous.

The MAHS Performance Agreement\(^2\), dated August 98/99 states that a survey in NSW, found only 33% of asthmatics use asthma management plans. Couple this with the asthma incidence reported in the MAHS and the ABS statistics stating that Aboriginal communities have a 2% higher growth rate than the national average, then a plan for increasing management strategies becomes logical\(^1\).

To address the issue a “shared-care” model for asthma management was designed in consultation with the community with the aim of improving the quality of life for those affected by asthma and hence reducing hospital presentations and admissions. The model is based upon ongoing liaisons between General Practitioners, local nurses,
Asthma educators, Aboriginal Health Education Officers and the local Aboriginal community. The educational design and management plan is based upon “The Six Step Plan” as published by the National Asthma Campaign.

The aims of this program were:

♦ to decrease asthma presentation to accident/emergency;
♦ to decrease admission rates for asthma;
♦ to develop the shared-care model through evaluation for implementation in other small rural Indigenous communities;
♦ to determine the effectiveness of the adapted program in asthma educators and management; and
♦ to evaluate the effectiveness of the cultural adaptations implemented in consultation with the Indigenous community.

METHOD

Program effectiveness was monitored using Quality of Life (QOL) and Asthma Knowledge Questionnaires (AKQ), assessing individual participants progress at 6 and then at 12 months after enrolment. Theses were adapted in consultation with the community from tested and validated designs.

Quality of Life (QOL) questionnaire remained as designed but the asthma educator would verbally describe the questions in layman terms complete with examples. The Asthma Knowledge Questionnaire (AKQ) was decreased from 36 questions to 20 questions covering the main areas of pathophysiology of asthma, signs and symptoms, triggers, medications, and the management of asthma and the technical language was simplified. Adaptations were also made to standard asthma educator programs.

♦ Written material, an asthma information booklet was developed and made more visual, pictorial and language was simplified.
♦ Enrolment into the AMPS service was voluntary.

Local community consultations led to the adaptation and encouraged participation, which was reflected by the hospital presentation statistics, suggesting ineffective access to health services. Placement of the clinic site was to increase access to health services eg: Community Health Centre (apart from hospital but on same site) was paramount. Also home visits and telephone contact where possible enabling consistent follow-up and reinforcement. Inclusion of a Aboriginal Health Education Officer proved to be essential in improving communication throughout the program.

RESULTS

During the period of the project, March 1998 to March 1999, hospital presentations for asthma were 1.2% (20 of a total of 1601) compared to 5.5% (93 of a total of 1705) during the previous 12 months.
Twenty-three Aboriginal people enrolled. 12 were aged <10 years, including 4 infants aged <4 years, who were participating with their mothers. All participants recorded improved asthma knowledge as measured by changes in the Asthma Knowledge Questionnaire. Three failed to complete the 12 months questionnaires and one person died of other causes. 29% of participants reduced their symptom level from mild/moderate to none in the breathlessness and mood disturbance categories as measured by the Quality of Life questionnaire.

Eighteen per cent have reduced moderate symptoms to mild and the remaining participants have maintained a level of no symptoms. One participant whose symptoms were very severe in all categories has reduced his or her symptom level to mild.

Table 1  
Comparisons of changes in individual QOL scores by category at 6 months and 12 months after program commencement

<table>
<thead>
<tr>
<th>Question category</th>
<th>Breathlessness</th>
<th>Mood disturbance</th>
<th>Social disruption</th>
<th>Concern for health</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Change at..</td>
<td>6mths</td>
<td>12mths</td>
<td>6mths</td>
<td>12mths</td>
</tr>
<tr>
<td>Mean</td>
<td>39</td>
<td>42</td>
<td>40</td>
<td>41</td>
</tr>
<tr>
<td>SD</td>
<td>45</td>
<td>37</td>
<td>43</td>
<td>39</td>
</tr>
<tr>
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<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Minimum</td>
<td>-44</td>
<td>0</td>
<td>-20</td>
<td>0</td>
</tr>
<tr>
<td>Median</td>
<td>35</td>
<td>38</td>
<td>31</td>
<td>29</td>
</tr>
</tbody>
</table>

Table 1 displays the changes in individual participant scores averaged in order to compare Quality of Life question categories and to assess any overall improvement for the group. The values demonstrate an overall improvement but indicate that the spread of results is much wider at 6 months than at 12 months after initial assessment and prior delivery of the education and the educational material, management and written action plan. It is possible this is due to the improvement in knowledge gained and then implemented over time and hence a better self recognition and scoring of asthma severity scales.

DISCUSSION

Veale et al \(^6\) (1996) “determined the prevalence and nature of asthma in four rural Aboriginal communities … in Queensland, the Northern Territory and South Australia.” The conclusion of this study states that “the prevalence of asthma in rural Aboriginal adults is low in comparison with the prevalence among non-Aboriginal Australians, and asthma in Aboriginal children is almost non-existent.”

Douglas \(^7\) (1999) notes that asthma mortality has dropped since a peak in the 1980s, however, asthma morbidity is rising. The cost burden to the community calculated for 1991 was between $585 to $720 million, which was higher than that for cardiac disease. Douglas also notes that the Australian climate is particularly suited to breeding of dust mites, the major allergen source for inducing asthma symptoms.

The National Asthma Campaign (Australia) \(^3\) published the Asthma Management Handbook containing guidelines known as The Six Step Asthma Management Plan. An
evidenced-based review summary dated 1998 was published on the World Wide Website.

This review states that:

♦ no difference was found in hospitalisation, FEV₁ or PEF for clients provided educational information and those who were not (FEV₁ is the forced expiratory volume in 1 sec.);

♦ provision of educational information did improve self reported asthma symptoms;

♦ optimal self management programs significantly prevents hospitalisation and unscheduled doctor visits;

♦ action plans and self monitoring should be tailored to patient skill levels and lifestyle; and

♦ There was no reported difference between those managed by regular visits to the doctor than for those undertaking self management.

However Mcdonald et al⁸, (1999) after reviewing the characteristics of 42 asthma education programs, notes that “there remains a need to use a combined approach utilising education and medical management, and to employ methods to evaluate programs.” Due to his finding that although the programs used many and varied educational methods, evaluation was not effectively “being linked to program aims” leading to “incomplete evaluation of knowledge gain as an outcome.” Bauman⁹, (1997), studied the comprehensibility of asthma education materials finding that “health education material, is often written at a reading age above the target audience, and is less likely to be comprehended.” He states that “Such material should ideally be used in conjunction with verbal advice.” Turner et al¹⁰, (1998) determined that “education, regular follow-up, and an action plan are effective in improving asthma control and quality of life” when following 92 adults through a 6 month educational program. Nestor et al¹¹ (1998), upon review of patients records for pharmacy claims at a managed care organisation, claims that “assessment of asthma therapy in a managed care population demonstrates that there is a lower proportionate use of Emergency Department and hospital in those patients treated in accordance to the asthma guideline recommendations”

The pilot program was initiated in a small community in order to negotiate and test the design, this has resulted in limited statistical analysis due to the age of those enrolled and the small numbers. Despite this an overall improvement in asthma management has been demonstrated.

The six month review for participants displays both negative and positive shifts in symptoms, however, if viewed with the Asthma Knowledge Questionnaire results negative shifts may be attributed to a better understanding of asthma by the individual and hence more accurate self scoring of symptoms. Comparison with the 12 month review data demonstrates a stabilisation of the scores most probably attributable to the better understanding attained. See Table 1.
The negotiation phase of the AMPS program was vital to its success as it built a trusting relationship between the Indigenous community and the health providers.

The Aboriginal health education officers (AHEOs) role was important in improving communication and understanding.

This phase of program implementation and the ongoing communication between the program facilitators and the community maintains the “share care” model and the confidence of those enrolled, particularly in the absence of a resident general practitioner on the family.

Use of the questionnaires revealed that the length of each requires modification. The QOL 20 questions has been reduced to 10 and AKQ of 36 questions had been reduced to 15. It is envisaged that these shortened questionnaires will deliver the same quality of information that was obtained during the pilot program.

They are currently undergoing a trial and validation period. The original material has been updated and altered according to participants feedback and is now being used in the clinical program.

There have been positive concurrent effects of the AMPS initiative. These include:

♦ seven staff trained by the Asthma Education Association and Asthma Foundation, two are employed in Aboriginal Medical Services;

♦ enrolment in AMPS has increased by over 30%;

♦ AMPS has been included into the local division of GP’s business plan;

♦ AMPS has been awarded first place in the “Healthier Patient’s and Clients” category of the NSW Health, Baxter Better Health Awards, 1999;

♦ there are now 11 GPs participating, spread across the townships of Trangie, Coonabarabran, Mudgee, Dubbo, Wellington and Baradine; and

♦ a grant has been awarded by the Aboriginal Health Promotion Unit to support the publication of pamphlet and training manual material for the Indigenous part of the AMPS program.

CONCLUSION

A successful model has been designed to improve asthma education and management for rural Indigenous communities. Positive shifts in symptoms have been experienced by all those enrolled in the AMPS program and numbers participating are increasing. This study provides recognition of the importance of the negotiation phase and constant community feedback as it has proven integral to the programs ongoing success. To better monitor the program and participants, shorter questionnaires are now being trialed. The program is ready to be tested on a larger scale and in disparate Indigenous communities.
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REFERENCES


**AUTHORS**

Robyn Gunter is a registered nurse, and clinical nurse consultant. She is currently Health Improvement Officer Asthma with the Centre for Population Health, Macquarie Area Health Service, Dubbo. Robyn has eight years experience in providing asthma education. She has planned, developed, implemented, and is in the process of evaluating an asthma management planning service model, for both Aboriginal and non-Aboriginal communities. She is also implementing a shared-care model in asthma education involving the general practitioner the patient, asthma educator and Aboriginal health education officer together with the local pharmacist.

Robyn provides essential and appropriate training required to sustain the service to health professionals, and is developing appropriate resources to be used in the service. She is also involved in developing and implementing school education programs in asthma management for students, providing an annual or alternate yearly in service for teaching staff, including office staff, and has developed and implementing Best Practices Clinical Pathways for patients with asthma. Robyn is currently on the MAHS Strategic Planning Committee for Clinical Pathways.