

Building and supporting a diabetes education workforce

J Giles¹, K Visentin¹, P Phillips²

¹Diabetes Outreach, The Queen Elizabeth Hospital and SA Department of Health, ²Endocrine and Diabetes, The Queen Elizabeth Hospital

Abstract

Background

Diabetes is now a major health priority in Australia and worldwide. As the population ages and people live longer, diabetes and its co-morbidities become more common. To meet the needs of people with diabetes it is important for health professionals to have access to continuing education and support programs based on best practice. The Diabetes Outreach team has developed and refined a model of continuing education and support to specifically meet the needs of both diabetes specialist and generalist health professionals working in rural and remote South Australia.

Program design

Diabetes Outreach is a Country Health SA program which has been operating for nearly 20 years. The Diabetes Outreach program utilises a model whereby a 'multiplier effect' occurs by training and supporting specialist diabetes and generalist health professionals. Specialist health professionals in turn support and provide subsequent training to other health professionals in their health services and geographical area. The 'multiplier model' also invests in establishing regional and local networks. Local health professionals have access to programs that develop and maintain expertise in diabetes education and care. The program offers a range of activities including face-to-face and distance education modes.

Results

Diabetes Outreach has been evaluated both externally and internally. Evaluations have identified positive practice changes in specialist diabetes and generalist health professionals. Deficits such as low participation rates for allied health and Aboriginal Health Workers have been identified and are being addressed by building partnerships with relevant services and organisations.

Conclusion

Continuing education and professional support is vital to the development and maintenance of a specialist and generalist health professional workforce. Diabetes Outreach has used a 'multiplier model' as a means of providing and facilitating their portfolio of activities. Essential to this model are the regional diabetes networks. The networks are coordinated by a specialist diabetes health professionals who has acquired specialised knowledge and skill and can provide clinical advice and ongoing support to colleagues. In this 'multiplier model' a small central team can enable a much larger health workforce to better meet the needs of rural communities.

Background

Type 2 diabetes is an example of the enormous and growing global burden of chronic disease. Diabetes is now a major health priority worldwide (1). As the population ages and people live longer, diabetes and its co-morbidities become more common. Overall, the prevalence of diabetes has more than doubled in

the past two decades and is estimated to affect around 1 million Australian adults or 7.5% of the adult population (2). Furthermore, Australian data highlights that people living outside the metropolitan areas of Australia have higher rates of mortality and morbidity than people living in metropolitan areas, especially in relation to coronary heart disease, asthma and diabetes (3).

Diabetes is a complex disease which is best managed utilising a multidisciplinary approach including, the person with diabetes, their general practitioner, community nurse, practice nurse, diabetes educator, dietitian, optometrist / ophthalmologist and podiatrist (4). Individuals with type 1 diabetes (adults and children), gestational diabetes, complex type 2 diabetes and women with either type 1 or type 2 who are pregnant will also require a specialist physician. Psychology or social work services are often be required if there are ongoing mental health issues, such as, depression or problems coping.

Workforce shortages have a significant impact in rural and remote areas where access to specialist health services are already limited. The provision of high quality continuing education and support to health care providers is an integral component of maintaining a competent workforce. In rural and remote areas continuing education and support is essential to counteract geographic and professional isolation.

There are many barriers to participation in continuing education both in metropolitan and rural areas throughout the world. It is well documented that the workforce in rural and remote areas encounter additional barriers because of their remoteness. Attending metropolitan based education programs and conferences can be difficult due to cost, time and lack of adequate child care arrangements (5) (6). It is also important that health professionals have access to education and support which is relevant to their local context.

Innovative models for continuing education that support specialist and generalist health professionals have been implemented through the Diabetes Outreach model. In this approach a 'multiplier effect' occurs via an education and support programs designed to develop the specialist and generalist diabetes health care provider. As the specialist and generalist health professionals work together, this 'multiplier model' enables more people with diabetes and those at risk of diabetes to access appropriate and consistent diabetes advice, education and care.

This paper will describe how a 'multiplier model' can address some of the diabetes workforce issues facing service providers nationally and internationally.

The South Australian context

Diabetes Outreach is a program of Country Health SA, and has been operating since 1989. The education and support services provided are delivered by a team consisting of an endocrinologist and credentialed diabetes educators. The program is co-located within a tertiary level metropolitan Diabetes Centre in Adelaide.

South Australia's (SA) population is largely concentrated along the coastline and in the capital city, Adelaide. The remaining population lives in rural SA, with a minority living in remote centres. The distance between rural centres, lack of public transport, cost of travel, the low population density and a dispersed health workforce make it difficult to deliver comprehensive health care to rural and remote populations in SA.

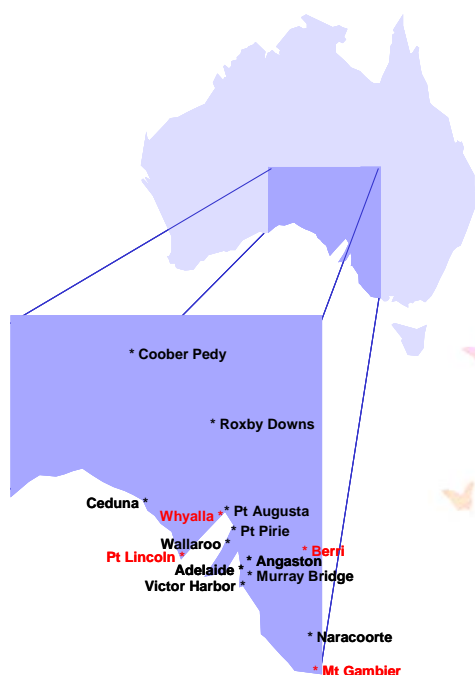
Health services in rural and remote SA provide health care for almost 430 000 people who live in 1200 cities, towns and small communities spread across almost one million square kilometres (7). The vast

distances, remoteness and isolation impact on service delivery as many specialist services are only available in major centres (7).

South Australia is an excellent example of the demographics of rural and remote Australia and the problems of providing health care across large distances with 27% of the SA population being dispersed across a vast rural and remote land mass (8).

The newly released Country Health Plan for SA has identified four key general hospitals for the provision of specialist level health services (7). These services will facilitate greater access to higher level care closer to home. The four hospitals will have a leadership role within a given geographical area. The key hospitals can be seen in red in Figure 1.

Figure 1



Aims of the Diabetes Outreach program

The Diabetes Outreach program aims to improve health for rural and remote South Australians by supporting the capacity of local health professionals in providing evidence based diabetes care.

Diabetes Outreach has identified six complementary strategies to achieve its aims:

- adopting a whole-of-population approach
- developing and promoting standards of care
- training and support for health professionals who provide care and education to people with diabetes and those at risk of diabetes
- developing and maintaining professional and consumer resources
- supporting and promoting local and state-wide networking and collaboration

- promoting quality assurance and appropriate documentation.

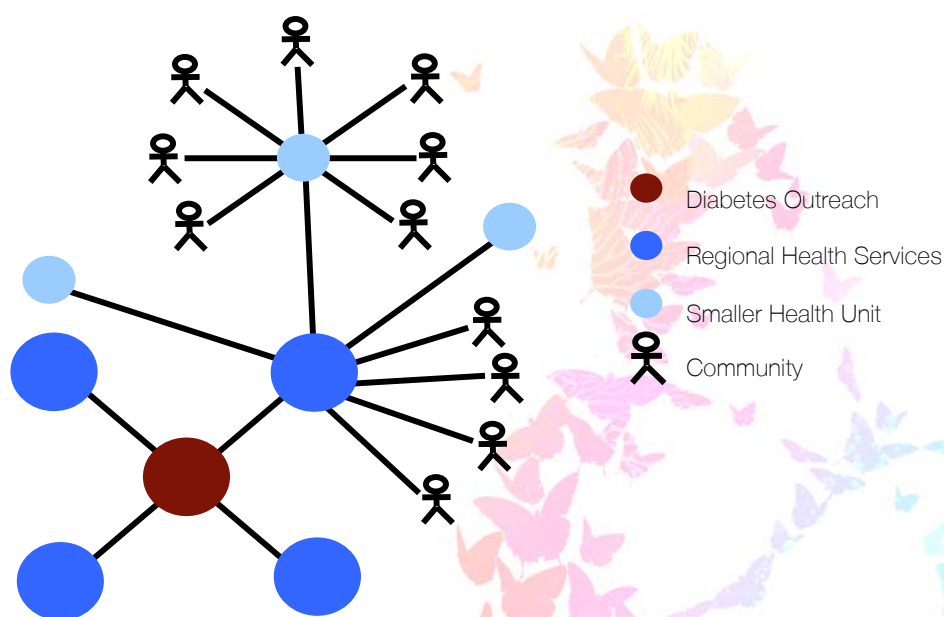
The 'multiplier model'

A multiplier effect can be described as a 'knock on effect' or, more specifically, 'the cumulative effect of change' (9). Multiplier effects are most commonly discussed in economic terms, that is increased spending in one part of the economy leads to bigger effects in other parts. In the context of the current program, the 'multiplier model' refers to the process in which Diabetes Outreach staff provides training and support. This training and support aims to build capacity of rural health professionals to provide diabetes information and support within their local community, thus multiplying the benefits.

Initially the Diabetes Outreach team (credentialed diabetes educator and endocrinologist) visited rural centres in SA and provided professional development in diabetes education and care. The aim was firstly to develop knowledge, skills and capacity of specialist diabetes health professionals and secondly to provide ongoing support and professional development to assist in maintaining this newly developed knowledge and skill. In turn, the diabetes health professionals network with and support the generalist health care providers in their local area.

Large and small health services in a particular geographical area form a network which enables health professionals to share resources and develop consistent, evidence based approach to the delivery of care, education and support for their local community (Figure 2).

Figure 2



This focus on the larger centres has three arms. Firstly, to develop and maintain advanced knowledge, skills and capacity of specialist diabetes health professionals including diabetes educator, dietitian, podiatrist and Aboriginal Health Worker. Secondly, to support and develop the health professionals to be able to provide education and support to generalist health care providers in their own service as well as in their surrounding geographical area. Thirdly, to support specialist diabetes educators to take on leadership roles in the networks.

As a state-wide service Diabetes Outreach plays a pivotal role in accurately articulating rural and remote issues on behalf of health services to metropolitan policy makers. Issues such as local resourcing which may impact on diabetes service implementation plans is an example of the type of issue that may be identified.

The Outreach team also has its own support network which involves liaising with colleagues in metropolitan diabetes services as well as Country Health SA. Diabetes Outreach plays a crucial linking role between metropolitan and rural services enabling a consistent, evidence based approach to diabetes management and self-care education to be implemented state-wide.

Diabetes networks

The networks vary in size and capacity and are dependent on adequate managerial support and resources. Networks include a variable range of diabetes specialist and generalist health professionals (diabetes educator, dietitian, podiatrist, diabetes resource nurse, community health nurse, nurses working in general practice and Aboriginal Health Worker). The diabetes networks also work with their regional Division of General Practice to liaise with local general practitioners to discuss and problem solve issues in service delivery and communication.

The diabetes network health professionals meet three to four times a year for continuing education, case conferencing, peer support and to share resources. In some areas the meetings are an opportunity to develop strategic and service plans. Diabetes Outreach staff attend these meetings to report on new diabetes related programs and resources. Networks provide an important role as a structure for consultation to identify education priorities specific to particular areas thus enabling a meaningful and focused approach.

Education programs

Education programs provided by Diabetes Outreach aim to provide correct, consistent and current information, as well as useful, useable resources which can be used in the day-to-day work of participants. Review, evaluation and ongoing needs analysis provide feedback so that the current programs can be improved and new programs developed to better meet the needs of participants and the communities in which they work.

Diabetes Outreach offers a multi-faceted education and support program utilising a number of modes based on face-to-face and distance education.

A face-to-face program offered in each of the main geographical areas provides both initial training and continuing education delivered by Diabetes Outreach staff. The program enables diabetes educators, allied health and generalist health professionals to access workshops and seminars in their local area. Programs are always developed in collaboration with local health services and the local diabetes network.

Initial diabetes education for health professionals wishing to take up a more active role in diabetes education is offered via an audioconferencing series. The audioconferencing series offers training through a workbook and tele-tutorials. Health professionals who take up specialist roles in diabetes self management education are encouraged to undertake a Graduate Certificate in Diabetes Education.

A videoconferencing series has been designed to meet the continuing education needs of health professionals who are specialising in diabetes. These sessions are presented by metropolitan based endocrinologists, scientists, credentialed diabetes educators and other specialists.

Multimedia and self directed learning resources are developed and designed to offer a range of distance education updates about specific diabetes-related topics. These resources are available throughout the year and can be accessed by any rural or remote health professional.

Professional and consumer resources are developed and designed to support both the health professionals continuing education and professional practice as well as providing tools to support self-management education for people with diabetes.

The content and delivery mode for programs and resources is coordinated by the Diabetes Outreach team but is developed in consultation with the diabetes networks. Rural and metropolitan health professionals also act as reviewers of content to ensure workbooks and resources are in line with best available evidence and relevant to the rural and remote practice setting.

Results

Evaluation of all programs has been conducted by self-administered questionnaires. Questionnaires focus primarily on identifying knowledge gained and planned changes to practice. Individual program evaluation is conducted by the Diabetes Outreach team. Data is analysed to identify key issues and themes. Changes in practice data from 2007 and 2008 identified several key areas including:

- a greater focus on the quality use of medicines approach
- closer monitoring of yearly cycle of care (routine reviews and tests)
- registration of clients on the National Diabetes Services Scheme (ensuring access to free and subsidised supplies)
- development of referral pathways (local and regional)
- development of communication pathways between public, private and Aboriginal Health Services.

A detailed evaluation assessing process such as education needs, education delivery modes and access issues is conducted two to three yearly by an external consultant. Rural and remote health professionals and service managers are the key targets for this cyclical external evaluation. Education priorities identified from the 2007 evaluation were (10):

- medications (diabetes and cardiovascular)
- management targets eg glycated haemoglobin (HbA1C), blood pressure and lipids
- foot risk assessment and referral pathways
- insulin adjustment for normal eating
- insulin pump therapy.

Over the life of the program, qualitative evaluations have consistently showed that the locally offered face-to-face programs continue to be the most favoured method of learning and support. However, Diabetes Outreach has successfully integrated distance education and support models as an adjunct to the face-

to-face program. The successful integration of distance programs has been demonstrated by the number of people participating and the qualitative feedback received.

Program	2004	2007
Videoconferencing series	63	99
Audioconferencing series	13	25

Over time key diabetes health professionals in larger rural health services have developed high levels of expertise. Many of these health professionals have now completed post graduate courses and have become credentialed diabetes educators.

These credentialed diabetes educators are increasing their involvement in continuing education and support to generalist health professionals and health workers in their geographical areas. This increase in credentialed diabetes educators ensures access to quality assured diabetes education services in rural areas reducing the need for those with complex diabetes to travel to metropolitan services.

Aboriginal Health Workers have accessed locally offered programs if specifically held at an Aboriginal Health Service. Participation in regional workshop / seminar days is low and has not increased over the past five years. Health worker participation in distance education programs are also low, and evaluation has identified a greater support / mentoring need for this group of health care providers.

Program attendance figures and state-wide needs assessment have also identified low participation rates by allied health professionals specifically dietitians and podiatrists. A specific focus on topics relevant to dietitians has seen a four fold improvement in attendances from 2003 to 2008.

Podiatry attendance figures remain low and this area of work is one of the priority for Diabetes Outreach in 2009.

Limitations of the program

Previous evaluations and service reviews have highlighted a lack of a systematic approach to the Aboriginal Health Worker and allied health professional continuing education and support. These groups of health care providers are more difficult to access given the current staffing component of Diabetes Outreach. Currently Diabetes Outreach is working with Country Health SA and the Aboriginal Health Council—South to identify strategies to more effectively support health workers and allied health professionals to undertake diabetes specific training and continuing education.

Historically there have been limited resources both human and material to develop and implement an information technology strategy. Web based resources and activities have the potential to add value to the current portfolio of programs. The value of increasing access points for rural and remote education and support should not be underestimated. Diabetes Outreach is implementing small projects such as interactive web education modules and email discussion forums.

Diabetes Centres in metropolitan Adelaide usually employ a diabetes nurse manager who provides leadership and service coordination across a health service or a geographical area. A current deficit in rural areas is the absence of designated diabetes manager positions that provide leadership and service coordination across multiple health services. Consequently coordination and leadership occurs in an ad hoc fashion or not at all. This lack of local coordination and leadership has implications for the effectiveness of the 'multiplier model' used by Diabetes Outreach.

Lastly, a major limitation of the program is the yearly funding model used. Funding based on a yearly basis makes it extremely difficult to develop long term strategies.

Conclusion

Increasing numbers of people with type 2 diabetes and the workforce issues faced are a particular problem for the 30% of Australians who live in rural and remote areas (7). Rural and remote populations are generally older and less healthy than in metropolitan areas as shown by higher levels of mortality, disease and health risk factors (11). The rural workforce is less equipped in terms of numbers and specialist skills to deal with the increasing number and complexity of people with all types of diabetes (3, 5). People with diabetes may find it difficult to access appropriate education and care and their health professionals may find it difficult to access appropriate professional education and support.

Providing locally accessible and distance education programs using an approach based on the 'multiplier model' and by supporting a system of networks has enabled health professionals in rural and remote SA to adopt a consistent and evidence based approach to diabetes education and care. In addition, regional and local service plans and education programs can be developed to make best use of available resources and address the specific needs of local communities and health service providers.

Health professionals face an ever increasing burden of diabetes worldwide. There are different resource priorities in different countries, regions and local communities. The 'multiplier model' can enhance professional development, improve knowledge and competence by using locally relevant methods to build capacity and support health care providers and communities.

Acknowledgments

We acknowledge the commitment and support of all the South Australia rural and remote health professionals and health workers with whom we have worked over the years. We would also like to acknowledge the support of the major Diabetes Centres and Endocrine Units in Adelaide.

References

1. Silink M. Celebrating the resolution. *Diabetes Voice*. 2007 March;52(1):1-50.
2. Dunstan D, Zimmet P, Welborm T, Sicree R, Armstrong T, Atkins R, et al. *Australian Diabetes Obesity and Lifestyle Study (AusDiab)*. Melbourne: International Diabetes Institute; 2001.
3. Australian Institute of Health and Welfare. *Australia's health no.11*. 2008 [cited 9 February 2008]; Available from: <http://www.aihw.gov.au/publications/index.cfm/title/10585>
4. Gadsby R. Caring for people with chronic diseases: what should healthcare professionals know? *Diabetes Voice*. 2008;53(Special Issue):42-5.
5. Golding S. Report of the South Australian Rural Allied Health Workforce, Pt 1, Summary Report In: Services DoH, editor.: Adelaide; 2000.
6. Penz K, D'Arcy C, Stewart N, Kosteniuk J, Morgan D, Smith B. Barriers to participation in continuing education activities among rural and remote nurses. *Journal of Continuing Education in Nursing*. 2007;38(2):58-66; quiz 7-8.
7. SA Health. *Strategy for planning country health services in SA*. Adelaide: Government of South Australia; 2008.
8. SA Health. *South Australia; Our health and health services*. Adelaide: Government of South Australia; 2008.
9. MSN Encarta. *Multiplier effect*. 2007 [cited October 2007]; Available from: <http://encarta.msn.com/encnet/refpages/search.aspx?q=multiplier+effect>

10. Healthcare Management Advisors. Review of South Australian Diabetes Outreach. Adelaide: The Queen Elizabeth Hospital; 2007.
11. Australian Institute of Health and Welfare. Rural, regional and remote health—Mortality trends 1992–2003. Canberra: Australian Institute of Health and Welfare; 2006. Report No.: AIHW Cat. No. PHE 71.

Presenter

Jane Giles is the manager of Diabetes Outreach. She is a registered nurse with a postgraduate certificate in diabetes education, a masters in nursing and a bachelor degree in adult education and educational computing. A diabetes educator for 16 years, she has been with Diabetes Outreach for 10 of these. Her role includes training and support of rural and remote health professionals and health care providers as well as the development of teaching and learning resources for both health professionals and people with diabetes.