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INVESTING TO IMPROVE THE OUTCOMES OF DIABETES CARE

Ruth Colagiuri and Margaret Williamson
Centre for Clinical Policy & Practice
Michael Frommer
Centre for Research & Development
Public Health Division
NSW Health Department

In October 1994 the NSW Health Department began evolving a model or prototype for the development, planning and implementation of initiatives to improve the outcomes of health care, focusing on diabetes mellitus. This article outlines progress on this project, which is known as the Diabetes Outcomes Project. Key principles of the project are wide consultation, the identification and adoption of practices with evidence of effectiveness and efficiency, equity of access to health services, monitoring of health outcomes and the use of information obtained from monitoring in subsequent decision making.

WHY DIABETES?

Diabetes was chosen as the model for several reasons.

- It is a prevalent disorder which typifies many chronic conditions in the NSW population. Diabetes affects 3-4 per cent of the Australian population[1], at least 10 per cent of older people, up to 20 per cent of some Aboriginal communities[2], and has a high prevalence in people from the Pacific Islands, the Middle East, Southern Europe and some Asian countries.
- Diabetes causes a substantial burden of morbidity and mortality. It is among the major causes of death and is the second most common reason for commencing renal dialysis in Australia[3]. It is estimated that up to 50 new cases of blindness and 775 non-traumatic lower extremity amputations are attributable to diabetes in NSW each year. Diabetes is also a major cause of ischaemic heart disease, stroke and impotence. The true burden in terms of health resources, personal suffering and detriment to quality of life is immeasurable.
- The care of people with diabetes spans the continuum from prevention and diagnosis, through initial and ongoing treatment, to rehabilitation and palliation. People with diabetes encounter a wide range of health professionals in the full spectrum of health care settings which are variously supported by Commonwealth- and State-sourced payment mechanisms. Thus diabetes care exemplifies all facets of the loosely networked Australian health care system.
- There is evidence that outcomes for people with diabetes can be substantially improved by providing better access to quality diabetes services. The focus is on preventing or minimising complications of the disease. It is estimated that the numbers of new cases of blindness and lower extremity amputations attributable to diabetes could be halved.

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Correspondence

Please address all correspondence and potential contributions to:

The Editor,
NSW Public Health Bulletin,
Public Health Division,
NSW Health Department
Locked Bag No 961,
North Sydney NSW 2059
Telephone: (02) 391 9191
Facsimile: (02) 391 9029

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- There had already been formal collaboration on the measurement of diabetes outcomes between the NSW Health Department and clinicians from medical, nursing and allied health backgrounds, and consumers. This collaboration resulted in the identification of process and outcome indicators for diabetes care and the development of a system to make clinical indicator information available in different health care settings.

THE FRAMEWORK

The project initially concentrated on the development of a generic planning framework which could be applied to improve the health of people with diabetes as well as other chronic conditions. It comprises a series of interdependent, interacting steps, as follows:

- developing goals and targets for diabetes prevention and care;
- identifying and evaluating prevention and treatment strategies and interventions;
- defining and evaluating standards of care;
- evaluating services and identifying ways to improve service delivery;
- developing indicators and systems to monitor the quality and outcomes of services;
- identifying research needs for incorporation into a strategic research plan;
- developing, piloting and evaluating models for prevention and care; and
- developing a statewide plan for integrating diabetes services.

The planning framework has since been further refined, and is described on page 102 in this issue of the *Public Health Bulletin*.

CONSULTATION

Since the inception of the project there has been an emphasis on the participation of people with diabetes, diabetes care providers and the organisations which represent them. To this end there has been a broad consultation process involving consumers, consumer groups, endocrinologists, general practitioners, diabetes educators, podiatrists and other relevant clinicians, health promotion practitioners and Area and District planning groups. An Expert Panel on Diabetes has been established to provide scientific and clinical advice and consumer perspectives. Its membership represents consumers, medical and non-medical clinicians, public health practitioners and representatives from Aboriginal Medical Services (AMS) and rural and community health services. Working groups of the Expert Panel have provided advice on guidelines and specific implementation issues.

APPLYING THE FRAMEWORK

The goals of the diabetes outcomes project are to prevent or minimise the complications of diabetes, enable people with diabetes to have the best possible quality of life and prevent non-insulin-dependent diabetes.

It is not possible to prevent insulin-dependent diabetes. But there is evidence that factors such as improved nutrition and adequate physical activity contribute to the prevention of non-insulin-dependent diabetes mellitus (NIDDM). Because community strategies for optimal nutrition and physical activity (which are already being implemented to prevent cardiovascular disease) may also prevent NIDDM, the Diabetes Outcomes Project has concentrated on diabetes care issues, as follows:

- describing the current state of diabetes care;
- identifying key elements of quality diabetes care and opportunities for improving outcomes;
- defining and disseminating evidence-based standards of care, including the development of methods for evaluating the quality of evidence;
- defining indicators and developing information systems to monitor progress; and
- encouraging service integration aimed at enhancing access and promoting a comprehensive, collaborative, population-based approach to diabetes care.

CURRENT STATE OF DIABETES SERVICES IN NSW

A statewide survey of Area and District Health Services, community health services, specialist diabetes centres and services and private specialist physicians was conducted in December 1994 to determine the nature, scope and location of diabetes services in NSW.

Before the survey it was known that diabetes ambulatory care centres were established in all Area Health Services but one. It was acknowledged that a high standard of specialised diabetes care was provided by the multi-disciplinary teams in these centres and by endocrinologists in private practice, with an estimated 80 per cent of diabetes care taking place in general practice.

The survey results confirmed the variable nature of diabetes services and identified lack of access to specialist services as a major issue in rural and remote regions and for Aboriginal and non-English speaking people.

ELEMENTS OF DIABETES CARE AND OPPORTUNITIES FOR IMPROVEMENT

There is a consensus of expert opinion, supported by published literature, that diabetes care and outcomes can be improved by providing access for all people with diabetes to:

- information about their condition and education for self care;
- ongoing clinical care to provide optimal metabolic control; and
- screening for and appropriate treatment of complications.

Seven guidelines have been prepared to aid clinical decision making and assist the practitioner in the management of diabetes in people over the age of 18 years. A group of paediatric endocrinologists is adapting these guidelines for application to children and adolescents with diabetes. Principles and recommendations for diabetes education and the promotion of self-care skills are also being developed.

As far as possible the guidelines are based on published evidence which has been evaluated using criteria and methods established for this purpose by Irwig, Liddle and Williamson[4]. Grading of the quality of the evidence for three guidelines (blood glucose control, diabetic eye disease and foot problems) is complete. The evidence supporting the recommendations for the blood glucose control and diabetic eye disease guidelines is strong. However, the evidence that screening for and treating foot problems results in improved

outcomes is variable or unavailable. This is partly due to the ethical difficulties of randomised allocation of people with a serious foot problem to receive no treatment. Where evidence is weak or absent, guidelines are based on consensus expert opinion.

FROM PRINCIPLES TO PRACTICE

Integrated care has been identified as a model that is capable of improving access to care, quality of care and outcomes for people with diabetes. Shared care schemes have pioneered the integration of public specialist and general practitioner services for diabetes and have improved access to quality diabetes care and outcomes[6]. However, many shared care schemes have not addressed the need to formalise communication, specify responsibilities and incorporate auditing mechanisms[7].

Integrated care builds on and extends the concept of shared care by incorporating a population-based approach to improve access to uniform standards of quality care through:

- commitment to local collaboration;
- development of an agreed Area- or District-wide service plan based on local needs;
- incorporating identified guidelines into clinical practice;
- the provision of training;
- enhanced communication mechanisms; and
- monitoring and feeding information into clinical practice.

The involvement of general practitioners, other medical and non-medical clinicians and consumers is central to the successful implementation of principles of diabetes care and guidelines into practice.

1. Involvement of general practitioners

In view of the central role of GPs in providing and co-ordinating the care of people with diabetes, there was early involvement of GPs in the project. In addition to GP membership of the Expert Panel, all Divisions of General Practice in NSW were invited to participate in a workshop sponsored by the NSW Health Department and Diabetes Australia – NSW in April 1995[5]. The aim of the workshop was to inform GPs about the health outcomes approach, present the clinical management guidelines and seek GPs' input on the implementation of the guidelines. Sixty-three participants represented the Divisions of General Practice and the Royal Australian College of General Practitioners, the Australian Medical Association, the Aboriginal Medical Services in NSW and the NSW Corrections Health Service, as well as the General Practice Branch of the Commonwealth Department of Human Services and Health, Diabetes Australia and the NSW Health Department. The workshop was instrumental in building a partnership between the Divisions and the NSW Health Department and opened the way for frank dialogue on such issues as GPs' training needs in relation to diabetes and the availability of public non-medical clinical services (e.g. podiatry). Subsequently the Divisions of General Practice agreed to participate in pilots of integrated diabetes care.

2. Consumer involvement

Consumer advice is being provided to the Expert Panel by Diabetes Australia – NSW, the Juvenile Diabetes Foundation Australia and representatives of people with insulin-dependent and non-insulin-dependent diabetes.

Other rural and metropolitan groups of consumers are also being consulted. The consumer groups are being asked to identify:

- the main issues and concerns for people with diabetes; and
- expectations of access to and standards of health services.

Based on this information, a working group is drafting a consumer charter to encourage and empower people with diabetes to request appropriate quality of care, and promote their involvement in the management of their condition. This working group has also provided advice on the principles of diabetes care and the clinical management guidelines.

PILOTING INTEGRATED DIABETES CARE

To assess the feasibility, effectiveness and cost of integrated care, a call for expressions of interest in piloting integrated diabetes care systems was distributed in June 1995 to Area and District Health Services, Divisions of General Practice, Aboriginal Medical Services, diabetes centres and services and Public Health Units in NSW. It invited joint proposals from Areas/Districts, Divisions of General Practice and the other services.

Monitoring of service provision and outcomes will make use of the NDOW information system developed by clinicians and NSW Health Department staff and named after the 1993 NSW Diabetes Outcomes Workshop[8] which has generated a minimum dataset of diabetes process and outcome indicators.

Three pilot sites have been selected, encompassing the Western Sydney Area, the Orana and Far West Districts and the Macleay-Hastings District. The pilots will be run over a two-year period with funding provided jointly by the NSW Health Department and the General Practice Branch of the Commonwealth Department of Human Services and Health. An evaluation committee will oversee the process, including final assessment of the effectiveness, efficiency, cost, feasibility and wider application of integrated care.

INFORMATION SYSTEMS FOR MONITORING CARE AND OUTCOMES

The September 1993 NSW Diabetes Outcomes Workshop (NDOW) identified 59 consensus indicators, including measures of metabolic control, modifiable risk factors and morbidity relating to individual patients[8]. These indicators are known as the NDOW dataset. A NSW Health Outcomes grant awarded in 1994 developed a data collection system for the NDOW dataset, enabling the data to be transferred between clinical settings electronically, by facsimile or as paper copy. The NDOW Data System has been trialled at the Prince of Wales Hospital and Lidcombe Hospital diabetes centres and is being piloted by a group of GPs in the Central Coast Area.

Throughout the project, gaps in the documented evidence for some areas of clinical practice, the relative efficacy of models of care and prevention, and morbidity data have been flagged. The implementation of the NDOW data system in the three integrated care pilots will provide accurate information on morbidity and will assist in

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A FRAMEWORK FOR APPLYING A HEALTH OUTCOMES APPROACH

Margaret Williamson, Cait Lonie, Ruth Colagiuri, Dianne Kelleher, Elizabeth Terracini, Kym Scanlon, Magnolia Cardona, Hanna Noworytko, Julianne Brown, Andrew Wilson, Glen Close and Helen Moore
Public Health Division
NSW Health Department

Traditionally the performance of the health system has been assessed by measuring the number, type, length and cost of interactions with patients. With the focus on outcomes, attention is turning to measuring the impact of health services on the health of people. Health outcomes initiatives in NSW have concentrated on the development of indicators to monitor services and their effect on health, and on the use of indicator data to improve the quality and outcomes of health services.

As described on page 99 of the *NSW Public Health Bulletin*, the NSW Health Department has developed and applied a planning framework designed to improve the outcomes of care for people with diabetes mellitus. The planning framework is being adapted for application to the national priority areas of cardiovascular disease, cancer, injury and mental health. This article describes the planning framework and outlines the steps in its application to improve the quality and outcomes of health services.

WHAT IS MEANT BY 'HEALTH OUTCOMES APPROACH'?

The objective of the health outcomes approach is to ensure that the structures and processes of health care and prevention have a positive impact on people's health. Although the emphasis is on improving health and health status, the approach is also concerned with the quality, delivery and organisation of services, the examination and evaluation of evidence for existing and proposed interventions, consumer acceptability, resource management, and equity of access and outcomes. It depends on the availability of systems to monitor these factors as well as changes in the health of individuals and populations. By linking information on process and outcomes with information on costs, the health outcomes approach can assist in setting priorities for the planning and delivery of health services at a local level, across the spectrum from prevention through early diagnosis, treatment and management to continuing care, rehabilitation and palliation.

The emphasis on equity of access to services and equity of outcomes is especially important for disadvantaged groups, such as rural communities, Aboriginal and Torres Strait Island people, and people from non-English speaking backgrounds.

WHAT IS NEW ABOUT THE HEALTH OUTCOMES APPROACH?

Health professionals have for many years applied a similar approach, using evidence-based practice in health care and meticulously monitoring patient outcomes. Many health services and organisations have incorporated programs to improve the quality of their services and to meet the needs of their patients. The reorientation of ambulance and emergency department services to improve outcomes for trauma patients is an example of how a health outcomes approach has been applied to improve patient care in NSW.

The health outcomes approach is innovative in that it relies on the systematic application of a cycle of defining outcomes and indicators, developing systems to provide indicator information, monitoring processes and outcomes, linking outcome information to cost information, and using this information in decision making.

HOW IS THE HEALTH OUTCOMES APPROACH APPLIED?

The health outcome approach is essentially problem-based, and can be posed in relation to a specific health problem. The following list of nine questions encompasses the practical application of the health outcomes approach. They represent the components of a reiterative process.

- What is the problem?
- What do we aim to achieve?
- What is the best thing to do?
- How can we measure what we achieve?
- Are we doing the best thing now?

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identifying the processes and service configurations which lead to the best outcomes.

LESSONS TO DATE

There have been two important lessons from the diabetes outcomes project.

The first has been the importance of wide consultation from an early stage. The contribution from people with a consumer or professional interest in diabetes is remarkable and their collaboration has generated a wide ownership of the process.

The second lesson has been the value of moving the debate on health outcomes from a conceptual level to one of practical implementation. The focus on diabetes as a model for implementation has enabled the health system to define objectives and to identify opportunities for attaining clearcut, quantifiable improvements in health.

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