Regional **Diabetes** Program Framework

Manitoba Health

Balance is an essential factor in diabetes prevention, education, care, research and support. The front cover graphic design reflects the concept of the ***medicine circle*** *or* ***medicine wheel****, an ancient and powerful symbol of healing and balance. The quadrants of the circle can be interpreted as representing the importance of balance in all aspects of human existence: spiritual, emotional, physical and intellectual.*

Regional
Diabetes
Program Framework

Regional
Diabetes
Program Framework

2002

Contents

	PAGE
Foreword	3
A Public Health Approach to Diabetes	5
Development of the Regional Diabetes Program	7
Regional Diabetes Program Logic Model	9
RDP Expectations in Action: A Case Study	11
Regional Diabetes Program Expectations	13
Next Steps	16
Appendix 1 Recommendations from *Diabetes: A Manitoba Strategy* to be implemented by a Regional Diabetes Program	17
Appendix 2 Evidence	19
Appendix 3 References	27
Appendix 4 Acknowledgments	29

Foreword

During the past 20 years, Manitoba has been a leader in the area of diabetes. In 1985, in response to an identified community need for accessible, consistent and continuous diabetes education across Manitoba, Manitoba Health developed and implemented the first province-wide, community-based diabetes education program in Canada. In 1995, in response to the growing burden of Type 2 diabetes in First Nations people and the elderly of all populations, a provincial diabetes strategic planning process was initiated. *Diabetes: A Manitoba Strategy*, released in 1998, was the result of over 1,000 people coming together to develop recommendations for diabetes prevention, education, care, research and support.(1) Many organizations and communities have begun to implement recommendations from the Strategy to reduce the diabetes burden of illness in Manitoba.

A number of federal and provincial government initiatives also contribute to and complement the implementation of *Diabetes: A Manitoba Strategy*. The Canadian Diabetes Strategy (CDS), funded by Health Canada, has provided an opportunity for many community organizations to develop community-based pilot projects. Some examples include the creation of new resources to address the prevention of Type 2 diabetes and innovative education strategies for people with diabetes and health care providers. In addition, First Nations communities have been provided with funding from the CDS Aboriginal Diabetes Initiative to develop and implement community diabetes plans based on specific community needs.

At the provincial level, restructuring within Manitoba Health (January 2002) has fundamentally shifted the department's role, from that of a service provider to an emphasis on broader leadership, planning, standards, evaluation and accountability. Manitoba Health and the regional health authorities (RHAs) are also embarking on a process of primary health care reform. Primary health care refers to the first level of contact with the health system, where services are mobilized to promote health, prevent illness, care for common illnesses and manage ongoing health problems. Primary health care extends beyond the traditional health sector and includes all human services, which play a part in addressing the inter-related determinants of health.

An increasing burden of illness from diabetes and its complications, health systems change and the need for sustainable health services within defined budgets provides the context for the development of the *Regional Diabetes Program Framework*. New and innovative approaches can strengthen the capacity to implement a public health approach to diabetes.

The *Regional Diabetes Program Framework* is the result of over three years of consultation and collaboration with stakeholders to identify expectations, activities, deliverables and potential outcomes for a comprehensive, province-wide diabetes program. The Regional Diabetes Program (RDP) is an opportunity to implement 29 of the 53 recommendations from *Diabetes: A Manitoba Strategy* to reduce the diabetes burden of illness in Manitoba.

The Diabetes and Chronic Diseases Unit, Public Health Branch, Manitoba Health has developed the *Regional Diabetes Program Framework* to define the provincial expectations for a Regional Diabetes Program. The purpose of this document is to increase awareness and understanding of the systems integration necessary to implement a public health approach to diabetes and assist in the development of RHA implementation plans to meet the needs of their health regions.

A Public Health Approach to Diabetes

In Manitoba, Type 2 diabetes is epidemic among First Nations people and the elderly of all populations. Projections indicate two trends:

- the prevalence of Type 2 diabetes will continue to increase due to the aging of our population, and
- the health burden of its complications will continue to rise.(2)

The complications of diabetes are major cost drivers to the health system. Evidence shows that some of these complications are preventable through timely diagnosis, blood glucose and blood pressure control.(3) Exciting new research also demonstrates that Type 2 diabetes may be prevented by lifestyle changes and/or pharmacological interventions.(4)(5)(6)

Many programs and initiatives exist independently to address various aspects of diabetes prevention, education, care, research and support within RHAs, Health Canada, Tribal Councils, universities and colleges, non-government organizations and the private sector. How can we better organize, co-ordinate and integrate our health systems to ensure economic efficiencies and increased access to services for people with diabetes and their families?(7) How can RHAs and their partners transform the latest research and health information into improvements in the quality of health services?(8) How can people with diabetes, their families and communities be involved in a process to ensure that their needs and values are incorporated into programs?

The roadmap for diabetes prevention, education, care, research and support in Manitoba is found in *Diabetes: A Manitoba Strategy.* The Strategy document suggests that special consideration be given to a community's cultures and issues related to children, seniors and Aboriginal people. We can learn much from the guiding principles and public health approach used to develop the Strategy recommendations. The following principles, adopted by the Manitoba Diabetes Strategy Steering Committee, guided the development of the *Regional Diabetes Program Framework:*

- Population Health
- Health Determinants
- Healthy Public Policy
- Evidence-based Decision Making
- Holistic Approach
- Learning About Health
- Community Participation
- Effective Diabetes Services.

The mission of public health is to fulfill society's interest by assuring conditions in which people can be healthy.(9) This is accomplished by:

- applying scientific and medical knowledge to systematically identify and analyze the health of groups and populations; and
- assisting communities to organize, implement and monitor efforts aimed at the prevention and control of disease, and the promotion of health.

Dr. Jamie Blanchard, an epidemiologist with Manitoba Health, identified the following key components of a public health approach to diabetes[10]:

- focus on prevention
  - primary (preventing diabetes)
  - secondary (early detection and modifying the course)
  - tertiary (optimizing outcomes)
- population-based
- strategic
- evidence-driven
- intersectoral and multidisciplinary.

Use of a public health approach for regional diabetes program planning and implementation can build a strong foundation for systems change. It is imperative that systems and structures are in place to support programs that promote healthy lifestyles and communities, as well as help people with diabetes work with their diabetes health care team to improve glycemic control, reduce diabetes complications and mortality and improve quality of life.[11][12] Strong management support, leadership and commitment are required to build the capacity of organizations, health professionals/providers and communities, bring stakeholders together and/or reallocate funding to provide comprehensive, lifetime care for people with diabetes.[13]

Manitoba Health has based expectations and outcomes for a Regional Diabetes Program on the framework of *Diabetes: A Manitoba Strategy,* evidence and best practice. In addition, support to address policy planning and implementation of the Regional Diabetes Program is promoted by regular meetings and information updates to the Health Programs and Services Executive Network (HPSEN), the Regional Diabetes Program Steering Committee, the Federal Provincial Diabetes Working Group, the Manitoba First Nations Diabetes Committee and the Minister's Advisory Committee on Diabetes. An environmental scan of all diabetes programs and initiatives within Manitoba is in progress and will be completed in April 2002.

At the regional level, RHAs and stakeholders will determine specific program design and priorities based on community needs assessments. Development of a comprehensive and integrated Regional Diabetes Program requires doing things differently through leadership, flexibility and innovative problem solving.

Some examples of emerging and evolving roles and activities are:

Senior management – Create a shared vision for action, based on the principles of *Diabetes: A Manitoba Strategy*.

Program managers – Co-ordinate the provision of education about the Manitoba Diabetes Care Recommendations for public health, home care, primary care and local hospital staff.

Regional Diabetes Program co-ordinators – Plan, co-ordinate and implement diabetes services with many stakeholders in each region. Facilitate the expansion of the Diabetes Health Care Team.

Health professionals/providers – Primary care and public health staff participate as members of the Diabetes Health Care Team and provide complication risk factor assessments, blood pressure and foot care clinics. Certified diabetes educators continue to play a central role in diabetes self-management education for people with complex health needs.

Community partners – Local community resources, in partnership with health professionals/providers, provide risk factor assessments for individuals and communities. Community organizations establish walking trails, congregate meal programs and/or community kitchens.

Regional
Diabetes
Program Framework

Development of the Regional Diabetes Program

The Diabetes and Chronic Diseases Unit has a mandate to facilitate and co-ordinate implementation of the recommendations from *Diabetes: A Manitoba Strategy*. Following release of the Strategy, the Unit embarked on additional strategic planning, research and consultation to determine that 29 of the 53 recommendations could be implemented into a program format **(Appendix 1)**. A Regional Diabetes Program framework was developed **(Figure 1)**. This framework shows the linkage between diabetes prevention, education, care, research and support as well as the opportunities for systems integration and partnership approaches to assist in planning, implementation and evaluation.

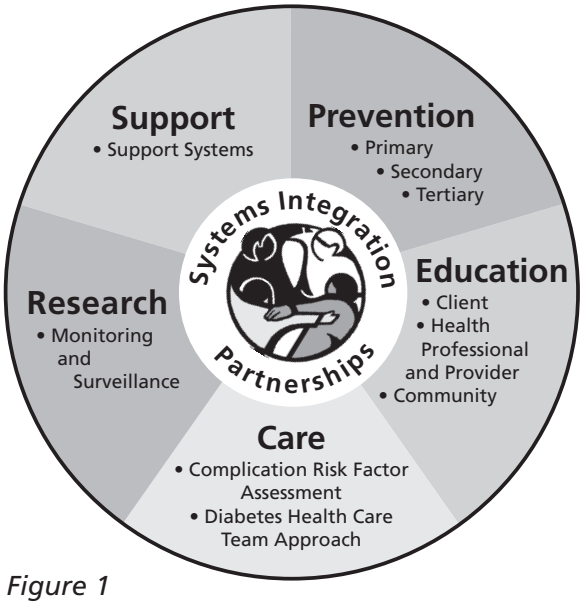

Figure 1
Regional Diabetes Program Framework

A demonstration project to plan, implement and evaluate the program framework was initiated with the Burntwood Regional Health Authority (April 1, 1999 to March 31, 2002). The purpose of the project was to demonstrate the feasibility of implementing key recommendations from *Diabetes: A Manitoba Strategy*. A systemic approach was utilized to integrate the existing Diabetes Education Resource program into the continuum of diabetes prevention, care, research and support.

The demonstration project goals were:

- to reduce the burden of illness of diabetes and its complications among the population of the Burntwood Regional Health Authority; and
- to implement a sustainable Regional Diabetes Program that draws upon strong partnerships to share the activities of prevention, education, care, research and support.

Manitoba Health has obtained feedback and support from the RHA Health Programs and Services Executive Network and the Minister's Advisory Committee on Diabetes to proceed with the development of a Regional Diabetes Program. In addition, numerous presentations and consultations have been held across sectors within Manitoba, including the Diabetes Education Network, Public Health Program Managers Network, Reh-fit Centre,

Seven Oaks Wellness Centre, Manitoba First Nations Diabetes Committee, Youville Centre, Canadian Diabetes Association (Manitoba Division Board) and the participants of the Alliance Institute 2001. Consultation within Manitoba Health occurred with Aboriginal Health, Evaluation and Monitoring, Information Systems, the Medical Officers of Health, Primary Health Care and Regional Support Services.

A Steering Committee was formed in January 2001 to support the establishment of a Regional Diabetes Program throughout Manitoba. The Co-chairs of the Steering Committee are Dr. Greg Hammond, Director of the Public Health Branch, Manitoba Health and Dr. Sharon Macdonald, Vice-President of Community Care, Winnipeg Regional Health Authority. Membership includes representation from:

- Manitoba Health
- each RHA
- Health Canada
  - First Nations and Inuit Health Branch
  - Population and Public Health Branch
- Manitoba College of Family Physicians
- Manitoba First Nations Diabetes Committee
- Canadian Diabetes Association (Prairie Region).

The Regional Diabetes Program Steering Committee has developed Terms of Reference, completed regional diabetes templates to identify diabetes services, partners, gaps and barriers, and developed a capacity assessment tool.

A Regional Diabetes Program Consensus Workshop was held on June 13, 2001 in Winnipeg.(14) This consensus workshop focused on the following:

- building consensus for the Regional Diabetes Program as the vision for diabetes in Manitoba;
- common current diabetes activities and partners within each RHA;
- collaboration and partnership opportunities among the RHAs, Manitoba Health, the Canadian Diabetes Association and other government and non-government organizations;
- expectations or activities for the Regional Diabetes Program that can be accomplished with existing resources;
- expectations or activities for the Regional Diabetes Program that require additional resources to accomplish;
- the role that Manitoba Health can play to facilitate the process; and
- priorities and next steps for the Regional Diabetes Program Steering Committee.

Workshop participants indicated strong support to move forward with Regional Diabetes Program planning on a provincial level. This *Regional Diabetes Program Framework* has been developed in response to requests from workshop participants to facilitate the regional planning process.

Regional
Diabetes
Program Framework

RDP Expectations in Action: A Case Study

- ✓ Systems Integration
- ✓ Partnerships and Collaboration
- ✓ Prevention
- ✓ Education
- ✓ Care
- ✓ Research
- ✓ Support

Mary Jones was at the local coffee shop having coffee and pie with a friend. Her eyes were drawn to the placemat in front of her, which spoke about the signs and symptoms of diabetes. She began to see herself in the story it told. Mary thought about how she had been more tired since turning 50, how she carried more weight than she liked and how she had given birth to a large baby over 20 years ago. She was disturbed by all of this so she refocused on her conversation and more pleasant thoughts.

A few days went by, but the words on the placemat stuck with her. Something was urging her to find some answers about how close she was to having a health problem. She thought of the roles she played - mother, wife, grand-mother (just two years ago), aunt and sister. Many loved ones depended on her and needed her to be healthy and happy.

Fortunately, that night she saw an advertisement in the local paper announcing a community health fair to be held in conjunction with a local curling bonspiel. Mary asked her husband if he would attend with her on the weekend. On Saturday morning they went to the health fair. At the health fair they met some friendly people who assisted them in completing their personal risk factor assessments. At a counselling station, they were greeted by a health professional who helped them to use their information to set personal health goals. In turn, the health professional referred them to a few community services and recommended that Mary see her family doctor.

The following week Mary went to see her doctor at the local primary health care center. Not surprisingly, she was diagnosed with diabetes and referred to the primary care nurse for a complication risk factor assessment. She learned that although diabetes may cause complications throughout her body, there are many things that she can do with the help of her family and/or friends to prevent that from happening. She worked with the nurse and doctor on a diabetes health plan. She really wanted to quit smoking. Mary registered for the smoking cessation program at the local community centre and scheduled an appointment with the optometrist to have her eyes screened. Something else she felt she

could do was to reduce the amount of fat she ate. As a result, she was referred to other members of the diabetes health care team. Mary also joined group education classes to learn more about managing her diabetes. The seriousness of diabetes and its complications, and the importance of doing what she can had hit home with Mary.

She enjoyed the group classes and felt that they provided her with useful knowledge and skills to help her take care of her diabetes, such as coping with the diagnosis, testing, healthy eating, active living information and more on prevention of complications. She really enjoyed being part of a group to hear how other people managed their diabetes and what changes they made. Mary's progress was shared with the primary health care doctor and nurse.

Many group class members wanted to get together, but going out for coffee and pie didn't work any more! They decided to form a walking group three days a week to help increase their activity level in a fun way. The walking group was of interest to those trying to quit smoking so her smoking cessation group joined along.

When the weather turned cold, the walking group realized that it was not safe or fun to walk outside anymore. They met with the local school board to see if they could use the high school for walking during the winter. They were given permission to use the school after hours when it was also open for community night classes.

When Mary went back to the primary health care centre in the spring for her annual complication risk factor assessment they were amazed at the number of changes she had made. She had quit smoking for six months, although was still having trouble with cravings. Her health record showed that her Hgb A1c was within normal ranges and her blood pressure was also reduced, compared to her previous assessment.

As they finished, Mary remarked on how much she had learned about diabetes over the past year and how much better she felt since making some changes to her lifestyle. Her family and friends also noticed the difference and have joined her.

Regional
Diabetes
Program Framework

Regional Diabetes Program Expectations

Manitoba Health has developed the following expectations for the Regional Diabetes Program. (See **Appendix 2** for evidence and **Appendix 3** for references.) The information in the "To accomplish the following" column reflects the Deliverables and Expected Short-term Outcomes outlined in the Regional Diabetes Program Logic Model.

Systems Integration

RDP Expectations	To accomplish the following
Regional health authorities will provide leadership and co-ordination to promote the efficient and appropriate use of resources to expand capacity for diabetes prevention, education, care, research and support.	• Current inventories of diabetes prevention, education, care and support programs and services • Quality improvement process to review systems and incorporate best practices • Communication and co-ordination mechanisms established and implemented • Dedicated staff to co-ordinate the Regional Diabetes Program

Partnerships and Collaboration

RDP Expectations	To accomplish the following
Community partners and stakeholders will participate in the planning, implementation and evaluation of the Regional Diabetes Program. Examples of partners include Health Canada, Manitoba Health and other government departments, Manitoba First Nations Diabetes Committee, Provincial Dialysis Program, Manitoba Telehealth Network,Tribal Councils, universities and colleges, non-government agencies, fitness leaders and recreation directors, seniors organizations, service clubs, people with diabetes, their families and communities.	• Regional Diabetes Program implementation plan in process • Commitment of partners to promote and deliver the Regional Diabetes Program as part of their mandate • Regional policies developed and implemented to ensure that community values and participation are reflected in the Regional Diabetes Program • Regional capacity enhanced at all levels (organization, health provider and community) • Dissemination plan in process

Prevention

RDP Expectations	To accomplish the following
Primary Health promotion and community development activities will occur in co-ordination and collaboration with other programs and services. **Public Awareness** Individuals and communities have increased knowledge, awareness and confidence about healthy eating, active living and smoking cessation. **Secondary** **Risk Factor Assessment (RFA) for Individuals and Communities** There are periodic assessments of risk factors for people at risk of Type 2 diabetes and other chronic diseases. **Tertiary** The outcomes for people living with diabetes and its complications will be optimized. Expectations are listed under Education, Care, Research and Support headings.	• Increased number of communities with organized health promotion/prevention and chronic disease risk factor reduction activities • People at risk of developing Type 2 diabetes receive a periodic assessment of risk factors based on the Manitoba Diabetes Care Recommendations • Individuals and communities are aware of risk factors and actions that delay the onset of Type 2 diabetes and other chronic diseases • Increased number of cases of Type 2 diabetes diagnosed prior to complications • Regional policies in place to promote primary prevention of Type 2 diabetes and other chronic diseases

Education

RDP Expectations	To accomplish the following
Client Diabetes self-management education will be provided to people with diabetes and their families, based on the Diabetes Educator Section Standards for Diabetes Education in Canada and the Manitoba Diabetes Care Recommendations. **Health Professional and Provider** Current knowledge and skills related to diabetes prevention, education, care, research and support is important to ensure standardized services are provided across Manitoba. This will be supported by the implementation of a multi-level diabetes education program. **Community** Lifestyle education to promote supportive environments aimed at preventing Type 2 diabetes and other chronic diseases is important. It is also essential to provide this education to people living with diabetes.	• People with diabetes and their families receive self-management education based on client-centered needs assessment and adult education principles • Increased number of basic and intermediate level diabetes educators • Health professionals and providers deliver consistent, current and accurate messages about diabetes prevention, education, care, research and support across RHA • Increased use of knowledge and skill-based learning opportunities to make behaviour and environmental changes

Regional
Diabetes
Program Framework

Care

RDP Expectations	To accomplish the following
Complication Risk Factor Assessment (CRFA) Screening Annual complication screening for people with diabetes will be provided within the context of a comprehensive diabetes health plan. The CRFA is based on the Manitoba Diabetes Care Recommendations. **Diabetes Health Care Team Approach** Diabetes education, care and support will be organized around a diabetes health care team, which is interdisciplinary and provides comprehensive, shared care.	• People with diabetes receive an annual complication risk factor assessment that is integrated into a comprehensive, personalized diabetes health plan • Referral networks exist for treatment and support of complications • Improved co-ordination of services among hospitals, communities, RHAs and other service providers • Decreased diabetes-related hospitalizations • Regional diabetes health care teams using the Manitoba Diabetes Care Recommendations

Research

RDP Expectations	To accomplish the following
Monitoring and Surveillance RHAs will collect data for program planning, review and improvement.	• Enhancement and utilization of diabetes databases for comprehensive program and strategic planning • Accurate and verifiable information is provided through the provincial health reporting systems

Support

RDP Expectations	To accomplish the following
Support Systems Physical, mental, emotional and spiritual supports are available at the individual, family, community and health system levels.	• Improved access to culturally appropriate diabetes prevention, education, care, research and support services • Assist people with diabetes, their families and health providers to build supportive environments within their own communities • Advocacy programs for special needs populations in place

Next Steps

Implementing the Regional Diabetes Program is a long-term process and requires commitment to change. To date, the work of many partners and the collaborative approach established by the Regional Diabetes Program Steering Committee are evidence of the commitment and leadership required to initiate this change process. It is acknowledged that the current systems do not meet the needs of the Regional Diabetes Program vision. Planning is necessary to identify knowledge, skills and resources required by RHAs and other stakeholders to implement a Regional Diabetes Program.

Manitoba Health will work with partners to define indicators and monitoring requirements for the Regional Diabetes Program and will continue to provide leadership and support to the Regional Diabetes Program Steering Committee.

The RHAs will develop regional visions and plans to implement this comprehensive program based on regional needs and capacity.

Redesigning a community-based diabetes program involving partners and systems change represents many challenges. It is time for action.

"By working together we can alter the course of this devastating disease."

Regional
Diabetes
Program Framework

Recommendations from *Diabetes: A Manitoba Strategy* to be Implemented by a Regional Diabetes Program

Prevention

GOAL 1
Develop community-based **Diabetes Primary Prevention Programs**, particularly targeting seniors and Aboriginal people.

GOAL 2
Develop comprehensive community-based **Diabetes Screening Programs**.

GOAL 6
Develop a **Public Awareness Campaign** about the prevention of Type 2 Diabetes.

Education

GOAL 1
Establish a **Standardized Multi-level Diabetes Education Program** to expand the pool of qualified diabetes educators from community to specialist levels.

GOAL 3
Expand and enhance the community-based **Standardized Client Education Program** (Diabetes Education Resource Program).

GOAL 11
Develop a **Public Awareness Campaign** about the complications of diabetes.

Care

GOAL 1
Develop **Manitoba Diabetes Care Recommendations** for the care of people with diabetes, consistent with the Canadian Diabetes Association Clinical Practice Guidelines.

GOAL 2
Develop comprehensive **Diabetes Complications Screening and Care Programs**.

GOAL 3
Standardize the collection and communication of clinical data about people with diabetes through the development of a **Clinical Data Form**.

GOAL 4
Improve the **Co-ordination of Services** among hospitals and communities, Regional Health Authorities and other service providers.

GOAL 5
Develop the **Diabetes Health Care team** with an interdisciplinary structure and broad mandate for the education and management of diabetes and the prevention of its complications.

GOAL 6
Incorporate access to **Traditional Aboriginal Healing** practices and healers for Aboriginal people with diabetes and their families, if desired by the individuals concerned.

Care

GOAL 7
Assess the validity of all **New Therapies** proposed for diabetes.

GOAL 8
Provide **Children With Diabetes and Their Families** the care necessary to optimize their quality of life.

GOAL 9
Provide **Seniors With Diabetes and Their Families** the care necessary to optimize their quality of life.

GOAL 10
Develop **Innovative Ways of Funding** the expansion of diabetes care services.

Research

GOAL 1
Develop a **Manitoba Diabetes Surveillance System**.

GOAL 2
Develop **Indicators, Benchmarks, Outcomes and Standards** for diabetes prevention, education, care, research and support.

GOAL 3
Evaluate community-based interventions and initiatives in prevention, education, care, research and support.

GOAL 7
Develop **Research Skills and Experience** for health care providers.

GOAL 8
Establish a **Manitoba Diabetes Information Warehouse**.

Support

GOAL 1
Develop holistic and community-based diabetes **Support Systems** that address cultural, emotional, spiritual and physical health issues and needs.

GOAL 2
Increase the number of **Community Diabetes Workers and Health Care Providers** from Aboriginal and other cultural, age and linguistic groups in which there is a disproportionate prevalence of diabetes.

GOAL 3
Address the inequities in **Access to Support Services** across the province.

GOAL 4
Address **Jurisdictional Issues**.

GOAL 5
Inform **Leaders** at all levels and throughout the province, about the Manitoba Diabetes Strategy.

GOAL 6
Develop **Psychosocial Supports** for people with diabetes.

GOAL 7
Develop **Peer Counselling Support** services in all communities.

GOAL 8
Develop **Advocacy Programs** for special-needs groups, including children, seniors and Aboriginal people.

Evidence

This section provides evidence to support the Regional Diabetes Program Logic Model and Expectations. It is intended to summarize best practice approaches to diabetes prevention, education, care, research and support to assist with regional planning. As reflected in the Regional Diabetes Program framework, there is linkage between each of the components, representing opportunities for integration and partnerships.

Systems Integration/ Partnerships and Collaboration

Systems integration and the development of partnerships are two approaches which can assist in the enhancement of regional capacity and ensure continuity of care within communities.(15) Capacity can be defined as the degree to which an organization, health provider or community has the knowledge, skills and resources to promote health effectively. The importance of adequate regional infrastructure and capacity to promote change and sustainability has been identified. This includes senior management leadership to support the concept of a Regional Diabetes Program, to begin to address jurisdictional issues and other barriers, and to assist in the development of interdisciplinary regional diabetes health care teams.

Currently, diabetes services are fragmented and health professionals/providers are not always providing consistent or current messages to people with diabetes. Many have specific expertise related to community development, health promotion, complications care, education or support. They have different funding mechanisms and reporting structures. Community partners may range from community health workers/representatives, translators and diabetes support groups to church groups, youth or senior centres and workplaces. Partnerships between people with diabetes, families and communities that are integrated with the skills of health providers are necessary to develop a Regional Diabetes Program and begin the change process.(13)

A Regional Diabetes Program Advisory Committee could bring partners together to plan, provide feedback and advice to promote optimal service delivery. Accountability to employers/organizations will facilitate commitment to RDP planning and implementation.(16) This will promote:

- consumer participation to ensure community and cultural values are incorporated into the planning process;
- education of health professionals/providers to expand the diabetes health care team and ensure consistent diabetes prevention, education, care and support messages;
- role delineation of health providers to distribute responsibility across team members and ensure services are provided by the most appropriate provider;

- co-ordination and communication between partners;
- the use of systematic management protocols and reminders such as the Manitoba Diabetes Care Recommendations and/or clinical flow sheets; and
- development of regional healthy public policy.

Once these partnerships and linkages are established, it takes hard work, persistence and leadership to maintain them. Building diabetes into regional quality improvement and accreditation processes will assist in sustaining program activities, reducing inefficiencies and ensuring co-ordination and communication so that best practices and program data are reviewed regularly.(17)(18)

Prevention

Most preventable chronic diseases have strong environmental, cultural, lifestyle and behavioural components. The greatest opportunities for preventing chronic disease are to reduce the risk factors or prevent the development of risk factors in the first place.(19)

It is important to note that at this time, Type 1 diabetes cannot be prevented although there are international efforts underway in this area of research.

Risk factors linked to the development of Type 2 diabetes include (3)(20):

- First-degree relative with Type 2 diabetes
- Member of a high-risk group (e.g., Aboriginal, Hispanic, Asian and African descent)
- Obesity: Body Mass Index ≥ 30 kg/m^2
- Low level of high-density lipoprotein cholesterol (< 0.9 mmol/L) or an elevated level of triglycerides (> 2.8 mmol/L)
- History of impaired glucose tolerance or impaired fasting glucose
- History of gestational diabetes
- Presence of hypertension (≥ 140/90 mm Hg)
- Presence of cardiovascular disease.

Population screening for Type 2 diabetes is not recommended. Regular testing for Type 2 diabetes should be part of an individual's periodic health assessment with their primary health care provider. Testing for Type 2 diabetes in individuals without risk factors is recommended every 3 years, beginning at age 45. Individuals with risk factors should be tested more frequently and/or from an earlier age.(20)

Primary Prevention

Primary prevention focuses on the avoidance of disease in the general public. Primary prevention of Type 2 diabetes will take decades and requires multiple interventions across sectors to impact the determinants of health. It is important to begin primary prevention efforts at conception and continue throughout the lifecycle.

Primary prevention of diabetes and other chronic diseases includes the promotion and adoption of healthy lifestyles such as increasing physical activity, achieving and maintaining healthy body weights, establishing healthy eating habits and smoking cessation.(21) The provision of information to increase awareness and confidence regarding healthy lifestyles is an important first step in the behaviour change process.

It is suggested that primary prevention activities for the Regional Diabetes Program occur in collaboration with other community programming such as health promotion, healthy baby, and active living programs to ensure co-ordination and consistent messages, encourage sustainability and reduce duplication.

Secondary Prevention - Risk Factor Assessment

Secondary prevention activities promote the early detection of diabetes and provide opportunities to modify the course of the disease through education and care. Exciting new research is showing that Type 2 diabetes can be prevented by lifestyle and/or pharmacological interventions in people with multiple risk factors. Participants of the Diabetes Prevention Project (5) randomly assigned to intensive lifestyle intervention reduced their risk of developing Type 2 diabetes by 58 per cent. Participants randomized to treatment with Metformin reduced their risk of developing Type 2 diabetes by 31 per cent. Smaller studies in China and Finland have shown that diet and exercise can delay Type 2 diabetes in at-risk individuals.(4)(6)

Risk factor assessment represents a move upstream to co-ordinate chronic disease prevention as well as implement the Manitoba Diabetes Care Recommendations.(20) Health professionals/providers and community agencies need to work together to identify individual and community risk factors for the development of chronic disease and develop appropriate interventions based on evidence.

At an individual level, the purpose of a risk factor assessment is to increase the person's awareness of the risk factors, signs and symptoms of Type 2 diabetes and other chronic diseases. This is also an opportunity to provide information and skills related to behaviour change and community resources that can reduce or delay the onset of Type 2 diabetes and other chronic diseases.

At the community level, risk factor assessment includes the development of a community risk profile to promote behaviour and environmental change.(22) Churches, workplaces, youth or community centres can be sites for community-based interventions: the more sites and partners, the greater the likelihood of success. Examples include:

- **awareness development** - media, community challenges
- **knowledge** - lectures, health fairs, community newspaper articles, Canadian Health Network (CHN) and other related Web sites
- **skill building** - grocery store tours, cooking classes, community kitchens
- **regional healthy public policy** - tobacco control in public places, walking trails, community gardens, community use of schools outside of school hours.

Tertiary Prevention

Tertiary prevention focuses on optimizing outcomes for individuals living with diabetes and its complications. This includes access to diagnostic, treatment, rehabilitation and support services. The regional diabetes health care team needs to define referral networks for treatment of complications and work to address gaps through innovative approaches such as telehealth. Information about tertiary prevention for diabetes is outlined in the Education, Care, Research and Support sections that follow.

Education

Self-management Education

Diabetes self-management has been defined as the process of providing the person with diabetes with the knowledge and skills needed to perform self-care, manage crises and make lifestyle changes required to successfully manage this disease.(23) Diabetes educators provide initial and ongoing diabetes education to the person with diabetes and their family as part of a comprehensive diabetes health plan.

Diabetes self-management education content should be based on the Standards for Diabetes Education in Canada and the Manitoba Diabetes Care Recommendations.(20)(24) Service delivery approaches should be consistent with client-centered needs assessment and adult education principles to ensure appropriate goal identification, interventions and evaluation. In addition, specialized services for children, Aboriginal people and seniors may be necessary for optimal quality of life.

Recent review articles support the effectiveness of self-management training in Type 2 diabetes, in the short term. It is difficult to compare results of studies due to different study designs, different programs/populations/ follow-up periods, small sample sizes and variable outcomes measured. Further research is needed to assess the effectiveness of self-management education on long-term glycemic control, onset of complications and quality of life.(25)(26)

Health Professional and Provider Education

Health providers must have the opportunity to learn current knowledge and skills related to diabetes prevention, education, care, research and support to ensure that the diabetes health care team provides consistent, current and accurate messages. Health professional and provider education also supports a shift of responsibility and ownership to ensure an expanded and qualified human resources pool.

A multi-level diabetes education program framework has been developed as part of a project funded by the Canadian Diabetes Strategy through the regional office of the Population and Public Health Branch, Health Canada. The framework includes four levels – basic, intermediate, advanced and instructor – and a goal of increasing access to community-based diabetes educators within Manitoba.(27) This project is currently developing education competencies and an education competency assessment process to support the training of basic and intermediate diabetes educators across Manitoba. It is anticipated that these competencies will be piloted in projects affiliated with the Regional Diabetes Program.

Community Education

Community education involves increasing knowledge and skills about the risk factors for the development of chronic disease.(22) Community education about healthy eating, active living and smoking cessation creates supportive environments and is part of the behaviour change process. It is important to foster attitudes and support for healthy habits at the community level as well as provide information about standards of care in the classroom for children with Type 1 diabetes. Community education is linked to primary and secondary diabetes prevention.

Care

From an outcome perspective, evidence indicates that structured and systematic primary care for people with diabetes, combined with educational and surveillance support, reduces the risk of complications in people with Type 2 diabetes.(28) Multiple interventions that address office systems, provider behaviour and patient behaviour were needed to improve diabetes care.(17)(29)(30) Common strategies (31) to improve care have been identified and include the following:

1. Accurately identifying patients with diabetes
2. Monitoring one or more important clinical parameters, such as glycosylated hemoglobin or cholesterol levels
3. Prioritizing patients based on their clinical status and readiness to change
4. Intensifying care through active outreach or visit planning.

The establishment of diabetes health care teams to ensure that complication risk factor assessments are provided annually is important to promote the early detection and prompt treatment of complications. System change is required to promote collaboration and communication among providers, develop regional diabetes health care teams and identify systematic management protocols such as clinical flow sheets and databases. In addition, supportive policies to address access to specialist services, food security and affordability of supplies, medication and footwear are required.

Diabetes Health Care Team

The Canadian Diabetes Association Clinical Practice Guidelines recommend that "diabetes care be organized around a diabetes health care team, which is interdisciplinary and provides comprehensive, shared care".(3) The diabetes health care team works as part of regional primary health care services. The person with diabetes and his or her family is central to the diabetes health care team. Core members include the primary care physician and/or nurse practitioner and diabetes educators. Members of the next level of the team include public health, home care and community mental health services. On a regional level, it is important to integrate providers from other organizations and jurisdictions such as Tribal Councils and the First Nations and Inuit Health Branch. Trained community health workers/representatives working as part of the diabetes health care team have improved diabetes care in disadvantaged communities and provide unique cultural perspectives to other team members.(13)

As part of primary health care, the diabetes health care team maintains continuity by referring to and co-ordinating with secondary and tertiary care services such as medical specialists, other heath professionals and providers, rehabilitation and dialysis as needed.

Principles of primary health care also identify the importance of access to comprehensive primary health care services, through the most appropriate provider of those services. The types of providers and mix of health care services are determined by community needs assessment. This approach requires co-ordination and continuity between providers.

Complication Risk Factor Assessment

The Canadian Diabetes Association Clinical Practice Guidelines recommend "more aggressive screening strategies and more sensitive testing and diagnostic procedures to allow earlier detection and management of

diabetes".[3] Complication risk factor assessment is an annual complication screening for people with diabetes within the context of a comprehensive personalized diabetes health plan [32][33] and includes the following:

- Glycated hemoglobin
- Microalbuminuria screen
- Foot screen
- Body Mass Index
- Blood pressure
- Eye screening
- Fasting lipid profile
- Random blood glucose/review of self-blood glucose monitoring results
- Self-management education.

The complication risk factor assessment can be shared by members of the diabetes health care team and requires co-ordination and communication between physicians, labs, diabetes educators and other health professionals.[34][35] Clinical flow sheets and client passports have been identified as tools to assist the diabetes health care team.[36] The development of regional referral networks is important to ensure that people with diabetes are able to receive foot care, eye screening and other secondary and tertiary services in a timely manner.

Research

Monitoring and Surveillance

Surveillance is the continuous analysis, interpretation and feedback of systematically collected data, generally using methods distinguished by their practicality, uniformity, and rapidity rather than by accuracy or completeness.[37] By observing trends in time, place and person, changes can be observed or anticipated and appropriate action can be taken. Sources of data may relate directly to disease or to factors influencing disease.[38]

Surveillance of diabetes includes the tracking and forecasting of diabetes and its complications through the collection of data and its analysis and interpretation into reports for those who need to know.[39]

Monitoring and surveillance provides information essential to planning, intervention, research, priority setting, policy development, issue management or risk management. RHAs have computerized diabetes education program utilization data. Manitoba Health is able to provide the following diabetes data to RHAs:

- basic information on the incidence and prevalence of diabetes and its complications;
- morbidity and mortality data;
- the scope of the economic burden of diabetes; and
- the impacts that new interventions may offer.

Both Manitoba Health and Health Canada are exploring Web-based applications to assist in data collection and interpretation.

Support

Support Systems

Support can help people with diabetes and their families to achieve an improved quality of life. Examples of support activities include:

- **Information** - diabetes education, friends, Internet, media
- **Emotional** - support from health providers, peers or non-government organizations. Counselling or support groups can assist people with diabetes to cope with the diagnosis and make the necessary lifestyle changes to achieve blood sugar and blood pressure control.
- **Practical** - Translators may be required to ensure that appropriate language and culture are incorporated into the diabetes prevention, education, care and support messages.

Provision of support must recognize the person's physical, mental, emotional and spiritual well-being. People living with the complications of diabetes may require additional support as a result of amputations, dialysis, impaired vision and/or blindness.(14) When complications are diagnosed, some northern and rural residents with diabetes may be required to move out of their community indefinitely to receive treatment in an urban centre. Financial, housing and transportation services may be required. When they are able to return home, they may require rehabilitation and assistance to adjust to living with a complication (eg., modifying a home to accommodate a wheelchair ramp).

Support can occur at many levels:

- **Individual** – support for behaviour change and adjusting to the diagnosis in order to self-manage diabetes on a daily basis
- **Family** – provide ongoing daily support for people living with diabetes
- **Community** – promote healthy lifestyles and environmental supports to prevent or manage diabetes and its complications
- **Health system** – provide a broad range of services to people with diabetes and their families as close to home as possible, in an environment that encourages diabetes self-management; address inequities related to access based on geography, age or culture
- **Societal** – develop effective strategies with sectors beyond health to address the inter-related determinants of health – the things that make and keep people healthy. Advocacy can be an effective tool to achieve and maintain the visibility of diabetes issues to governments, non-government agencies and/or workplaces.

References

1. Manitoba Health. *Diabetes: A Manitoba Strategy*. 1998.
2. Blanchard JF, Wajda A, Green C. *Diabetes and Its Complications: Forecasting the Coming Storm.* 1998.
3. Meltzer S, Leiter L, Daneman D, Gerstein HC, Lau D, Ludwig S, Yale JF, Zinman B, Lilllie D, Steering and Expert Committees. 1998 clinical practice guidelines for the management of diabetes in Canada. *CMAJ* 159 (8 Suppl); S1-29, 1998.
4. Tuomilehto J, Lindstrom J, Eriksson JG, et al. Prevention of Type 2 Diabetes Mellitus by Changes in Lifestyle Among Subjects with Impaired Glucose Tolerance. *N Engl J Med* 344:1343-1350, 2001.
5. Diabetes Prevention Program Research Group. Reduction in the Incidence of Type 2 Diabetes with Lifestyle Intervention or Metformin. *N Engl J Med* 346: 393-403, 2002.
6. Pan XR, Li GW, Hu YH, Wang JX, Yang WY, An ZX, et al. Effects of diet and exercise in preventing NIDDM in people with impaired glucose tolerance. The Da Qing IGT and Diabetes Study. *Diabetes Care* 20: 537-544, 1997.
7. Wagner EH, Austin BT, Von Korff M. Organizing Care for Patients with Chronic Illness. *The Milbank Quarterly* 74: 511-544, 1996.
8. Venkat Narayan KM, Gregg EW, Engelgau MM, Moore B, Thompson TJ, Williamson DE, Vinicor F. Translation Research for Chronic Disease - The case of diabetes. *Diabetes Care* 23:1794-1798, 2000.
9. Manitoba Health Website. December 6, 2001. www.gov.mb.ca/health/publichealth/role
10. Blanchard, J. Personal Communication.
11. American Association of Diabetes Educators. Position Statement: Diabetes Education and Public Health. 1999. Available at www.aadenet.org
12. Centers for Disease Control and Prevention. Strategies for Reducing Morbidity and Mortality from Diabetes Through Health-Care System Interventions and Diabetes Self-Management Education in Community Settings: A Report on Recommendations of the Task Force on Community Preventive Services. *MMWR* 50:1-15, 2001.
13. Centers for Disease Control and Prevention. *Team Care: Comprehensive Lifetime Management for Diabetes.* Atlanta, Georgia: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, 2001.
14. Manitoba Health. *Regional Diabetes Program Consensus Workshop Consultation Report.* 2001.
15. Glasgow RE, Hiss RG, Anderson RM, Friedman NM, Hayward RA, Marrero DG, Taylor CB, Vinicor F. Report of the Health Care Delivery Work Group: Behavioral research related to the establishment of a chronic disease model for diabetes care. *Diabetes Care* 24:124-130, 2001.
16. Griffis S. The Northern Diabetes Health Network: A healthcare model to improve access to diabetes care. *Can J Diabetes Care* 25: 47-52, 2001.
17. Wagner EH, McCulloch DK, Price MJ, Hindmarsh M. A Population-Based Approach to Diabetes Management in a Primary Care Setting: Early Results and Lessons Learned. *Eff Clin Pract* 1:12-22,1998.

18. Health Canada. *Quest for Quality in Canadian Health Care: Continuous Quality Improvement* (2nd Edition). Mary Lou Harrigan, Harrigan Consulting, Vancouver, BC, 2000.
19. Saskatchewan Health. *Population Health Promotion Practice in the Primary Prevention of Type 2 Diabetes.* 1999.
20. Manitoba Health. *Manitoba Diabetes Care Recommendations.* 2002.
21. Health Canada. *Taking Action on Population Health.* Ottawa: Population Health Directorate, Health Promotion and Programs Branch. 1998.
22. Kaufman M. *Nutrition In Public Health – A Handbook for Developing Programs and Services.* 1990.
23. Clement S. Diabetes Self-Management Education. *Diabetes Care* 18:1204-1214, 1995.
24. Diabetes Educator Section, Canadian Diabetes Association. *Standards For Diabetes Education In Canada.* 2000.
25. Norris SL, Engelgau MM, Venkat Narayan KM. Effectiveness of Self-Management Training in Type 2 Diabetes – A systematic review of randomized controlled trials. *Diabetes Care* 24:561-587, 2001.
26. Alberta Heritage Foundation for Medical Research. *Patient Diabetes Education in the Management of Adult Type 2 Diabetes.* 2001.
27. Canadian Diabetes Association, Manitoba Health, Minister's Advisory Committee on Diabetes. *Summary of the Multi-level Diabetes Education Project: A Generic Framework and Draft Operational Plan.* 2001.
28. Olivarius NF, Beck-Nielsen H, Andreasen AH, Horder M, Pedersen PA. Randomised controlled trial of structured personal care of type 2 diabetes mellitus. *BMJ* 323:970-975, 2001.
29. Renders CM, Valk GD, Griffin SJ, Wagner EH, Eijk Van JT and Assendelft WJ. Interventions to Improve the Management of Diabetes in Primary Care, Outpatient, and Community Settings: A systematic review. *Diabetes Care* 24:1821-1833, 2001.
30. Sperl-Hillen J, O'Connor PJ, Carlson RR, Bunkers Lawson T, Halstenson C, Crowson T, Wuorenma J. Improving Diabetes Care in a Large Health Care System: An Enhanced Primary Care Approach. *Jt Comm J Qual Improv* 26:615-622, 2000.
31. O'Connor PJ. Organizing Diabetes Care: Identify, Monitor, Prioritize, Intensify (Editorial). *Diabetes Care* 24:1515-1516, 2001.
32. McGill M, Molyneaux LM, Yue DK, Turtle JR. A Single Visit Diabetes Complication Assessment Service: A Complement to Diabetes Management at the Primary Care Level. *Diabet Med* 10:366-370, 1993.
33. Dunn SM, Hoskins PL, Constantino M, et al. Diabetic management: The role of the diabetes center. *Diabetes Reviews* 2:389-402, 1994.
34. Aubert RE, Herman WH, Waters J, Moore W, Sutton D, Peterson BL, Bailey CM, Koplan JP. Nurse Case Management To Improve Glycemic Control in Diabetic Patients in a Health Maintenance Organization. *Ann Intern Med* 129:605-612, 1998.
35. Thompson DM, Kozak SE, Sheps S. Insulin adjustment by a diabetes nurse educator improves glucose control in insulin-requiring diabetic patients: a randomized trial. *CMAJ* 161:959-962, 1999.
36. Society of Rural Physicians of Canada. *Evidence based practical management of type 2 diabetes.* 2001. Available at www.srpc.ca
37. Eylenbosch WJ, Noah ND (Eds.). *Surveillance in Health and Disease*. Oxford, England: Oxford University Press, 1988.
38. Last JM (Ed.). *A Dictionary of Epidemiology* (3rd ed). Oxford, England: Oxford University Press,1995.
39. F/P/T Surveillance Integration team. *Summary: A Network for Health Surveillance in Canada.* Ottawa: Health Canada, 1999.

Acknowledgments

The *Regional Diabetes Program Framework* was prepared and produced by the Diabetes and Chronic Diseases Unit of Manitoba Health, in response to requests made at the Regional Diabetes Program Consensus Workshop in June 2001. The development of the Regional Diabetes Program reflects the same multidisciplinary intersectoral approach that governed the development of *Diabetes: A Manitoba Strategy*.

The Diabetes and Chronic Diseases Unit would like to acknowledge the following groups and organizations who contributed to the development of the Regional Diabetes Program and the Framework document:

- People with diabetes
- Diabetes Education Network members
- Public Health professionals and providers
- Minister's Advisory Committee on Diabetes
- Multi-level Diabetes Education Program Advisory Committee
- Regional Diabetes Program Steering Committee
- Social Marketing Advisory Committee
- Canadian Diabetes Association (Prairie region)
- Regional Health Authorities
  - Health Programs and Services Executive Network
  - Public Health Program Managers Network
- Tribal Councils
- Health Canada
  - First Nations and Inuit Health Branch
  - Population and Public Health Branch
- Manitoba Health
  - Aboriginal Health
  - Evaluation and Monitoring
  - Information Systems
  - Medical Officers of Health
  - Primary Health Care
  - Regional Support Services

Regional
Diabetes
Program Framework