Healthy Massachusetts
Disease Management and Wellness:
Focus on Diabetes

Prepared by the
Massachusetts Department of Public Health
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Table of Contents

Diabetes Task Force Members **4**

Acknowledgements **7**

Introduction **8**

Overview of Diabetes Data **11**

Prevalence 11
Mortality 12
Hospitalizations 13
Complications: Amputations, Blindness, Kidney Failure 14
Preventive Care 14

Task Force Recommendations **16**

Recommendation 1: Help providers adhere to the *Massachusetts Guidelines for Adult Diabetes Care* for patients with diabetes and pre-diabetes. 16
Recommendation 2: Implement systems changes that will facilitate a coordinated, multidisciplinary team approach to care. 18
Recommendation 3: Create a healthy workplace environment for preventing and managing diabetes resulting in measurable and improved outcomes for adults living with diabetes. 20
Recommendation 4: Develop a high-level statewide public awareness and education campaign targeting high risk groups 23
Recommendation 5: Increase the number of patients with diabetes who receive diabetes self-management education (DSME) and medical nutrition therapy (MNT) in accordance with state guidelines. 25
Recommendation 6: Ensure that appropriate staffing levels, training programs and certification resources exist to provide the full range of services needed for patients with diabetes and pre-diabetes. 27

Glossary of Selected Terms **29**

Healthy Massachusetts
Disease Management and Wellness Task Force: Focus on Diabetes

Purpose of the Task Force

Develop an action-oriented framework for preventing and managing diabetes in Massachusetts to optimize health, improve outcomes and quality of care, and control costs

Anticipated Result

People with diabetes and pre-diabetes receiving recommended health care while achieving and maintaining optimal health.

Goals

Our goals are those of the Healthy Massachusetts Compact, namely to:

- Ensure access to care
- Advance health care quality
- Contain health care costs
- Promote individual wellness
- Promote healthy communities

Short-term measures

The Task Force chose short-term measures to track performance. These measures were chosen based on specific criteria, namely:

- data points had to be available within 6-12 months (i.e. as close to "real-time" as possible)
- the measures had to serve as proxies for receiving comprehensive diabetes care.

The Task Force recognizes that lipid and blood pressure control are critical outcomes for people with diabetes. Because the data for those indicators cannot be obtained within a 6 month time frame, they were not included in our short term measures.

The data for the following short-term measures originate from the Behavioral Risk Factor Surveillance System (BRFSS), a timely and accessible data source.

1. Increase the percent of individuals with diabetes who receive "recommended care" defined as:
   - Annual dilated eye exam
   - Annual comprehensive foot exam
   - Twice per year A1c
   - Annual flu vaccine
2. Decrease the number of people living in the state who are undiagnosed with diabetes or pre-diabetes

Diabetes Task Force Members

The Massachusetts Department of Public Health is grateful for the time, commitment and knowledge of experts from across the Commonwealth who attended Task Force meetings throughout the process which spanned a fifteen month time period (March 2008 through June 2009). Each member helped shape the final product.

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Introduction

Chronic conditions, such as heart failure, diabetes and asthma are pervasive among Massachusetts residents. These chronic conditions impact residents' quality of life and contribute to disability and premature mortality. Chronic illnesses are especially prevalent among racial and ethnic groups where gaps in diagnosis and care occur. Treatment for these conditions represents a growing component of overall health care costs. According to the American Diabetes Association (ADA), the national cost of diabetes in terms of excess medical expenses was $116 billion in 2007. The ADA estimates that the cost of diabetes in Massachusetts alone is $4.3 billion. People with diagnosed diabetes, on average, have medical expenditures that are approximately 2.3 times higher than for people without the disease. And it is estimated that an astounding 10 percent of health care dollars is attributed to diabetes.[1]

Every week in Massachusetts, diabetes causes

104
people to be discharged from the hospital

38
lower leg amputations

22
deaths

13
new cases of end-stage renal disease

5
new case of blindness

In Massachusetts, there are approximately 360,000 adults diagnosed with diabetes and another estimated 115,000 adults living with diabetes who do not know it. Additionally, it is estimated that there are even far greater numbers of people living with pre-diabetes than with diabetes. In 2007, 5.4% of Massachusetts adults reported they had been diagnosed with pre-diabetes, a relatively new term used to describe blood glucose levels that are higher than normal but not yet high enough to be diagnosed as diabetes. People with pre-diabetes are at higher risk for developing type 2 diabetes, heart disease and stroke. Identifying this group of individuals is crucial, as studies have shown progression from pre-diabetes to diabetes can be prevented or delayed by modest weight loss and regular physical activity.

In March 2008, the Executive Office of Health and Human Services (EOHHS) convened the Disease Management and Wellness Task Force with broad representation from more than 40 organizations to develop an action-oriented framework for managing and treating chronic disease in Massachusetts, focusing initially on diabetes. The Task Force was chaired by John Auerbach, Commissioner of the Massachusetts Department of Public Health (DPH). The goal of the Task

[1] American Diabetes Association. 2008. Economic Costs of Diabetes in the US in 2007, *Diabetes Care* 31, no. 3 (March): 596-615

Force was to identify key policy and programmatic steps that can be taken to reduce complications associated with diabetes, to expand screening and to ensure appropriate care of diabetes, with the intention of seeing measurable changes within a relatively short period of time.

The Disease Management and Wellness Task Force is one of five task forces that comprise the Healthy Massachusetts Compact, also known as *HealthyMass*. *HealthyMass* was launched in December 2007 when Governor Deval Patrick and Secretary of Health and Human Services JudyAnn Bigby announced an ambitious plan to harness the energy of state government to contain costs and enhance quality in the Commonwealth's health care system. Nine major entities[2] across state government committed to working together by signing the Healthy Massachusetts Compact.

There are many efforts underway throughout state government to increase quality and reduce cost in the health care system. Among them are:

- **Health Care Quality and Cost Council:** The Council was established as part of the 2006 Massachusetts Health Reform law. The Council works to establish statewide goals for improving health care quality, containing health care costs, and reducing racial and ethnic disparities in health care.

- **Special Commission on the Health Care Payment System**: The Commission was established by law in 2009 to evaluate the health care payment system and recommend reforms that will provide incentives for cost-effective and patient-centered care. The Commission will evaluate innovative methods for health care payment, including medical homes, global budgeting, and capitation rates.

- **Health Information Technology Council:** The HIT Council was established to support state-wide implementation of electronic health records (EHR) in all provider settings as part of an interoperable health information exchange by the end of 2014. Council members represent experts from essential areas relevant to HIT, including privacy and security, and consumer interests.

- **Mass in Motion:** Mass in Motion aims to promote wellness and to prevent overweight and obesity in Massachusetts – with a particular focus on the importance of healthy eating and physical activity. Mass in Motion uses a

[2] Nine entities signed the Healthy Massachusetts Compact: Exec. Office of Health and Human Services, Exec. Office of Administration and Finance, Commonwealth Health Insurance Connector Authority, Group Insurance Commission, Div. of Insurance, Office of the Attorney General, Mass. Health and Educational Facilities Authority, Mass. Development Finance Agency, Dept. of Correction

multi-faceted approach, including a public education campaign, an interactive website (www.mass.gov/massinmotion), worksite wellness programs regulatory changes to promote healthy diet and exercise and grants to cities and towns to stimulate wellness initiatives.

- **Patient-Centered Medical Home (PCMH) Initiative**: The Massachusetts Executive Office of Health and Human Services (EOHHS) is developing a demonstration program that will implement patient-centered medical home models in as many as 5-100 primary care practices and community health centers statewide to further the goals of Massachusetts on-going efforts in health care reform, and to enhance the current MassHealth program. Furthermore, a multi-payer/multi-stakeholder coordinating council is being formed with the hopes of extending the model to additional sites.

In order to avoid duplication and recognizing the beneficial effects these initiatives could have for people with diabetes, the Diabetes Task Force endeavored to contain its recommendations to areas not fully addressed through these other groups.

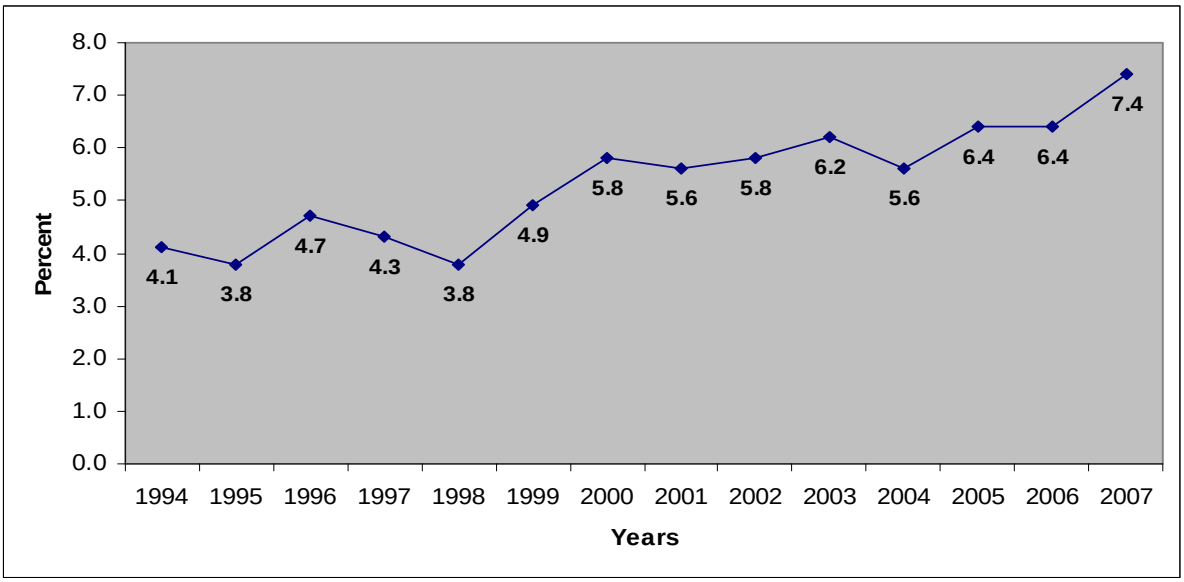
Overview of Diabetes Data

Prevalence

According to the 2007 Massachusetts Behavioral Risk Factor Surveillance System (BRFSS), 7.4% of Massachusetts adults, 18 years and older, reported being told they have type 1 or type 2 diabetes, while 5.4% reported being told they have pre-diabetes. According to the Centers for Disease Control and Prevention (CDC), an additional 2.2% of the population has undiagnosed diabetes, so the total number of people with both diagnosed and undiagnosed diabetes in the state is estimated at 475,000 in 2007.

Since 1994, there has been a 75% increase in the number of people diagnosed with diabetes in Massachusetts (Figure 1), and that trend is expected to continue. Type 2 diabetes is largely preventable and accounts for much of the increase this country has seen over the last decade and for the majority of diabetes cases in the Commonwealth.

Figure 1. Percent of Adults Ever Told They Have Diabetes, MA (1994 - 2007)



Source: Massachusetts Behavioral Risk Factor Surveillance System

Certain sub-groups are more likely to be diagnosed with diabetes, such as older adults, Black non-Hispanics, Hispanics and adults with less than a high school education. (Table 1).

Table 1. Demographic Breakdown of Prevalence in Massachusetts (2007)

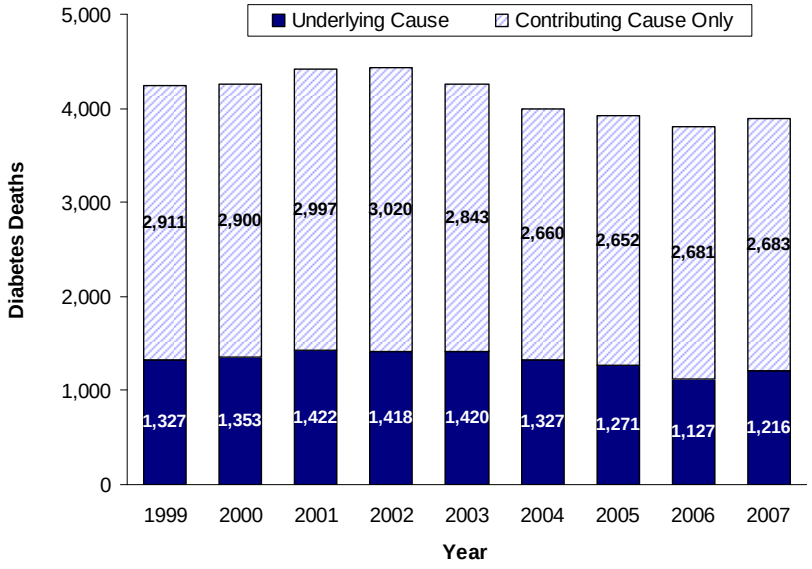
Characteristics	Percent Ever Told They Have Diabetes	Percent Ever Told They Have Pre-diabetes
Total (%)	7.4	5.4
Age		
18-24	1.4	3.0
25-44	2.7	2.4
45-64	9.5	7.0
65-74	17.9	10.5
75+	16.3	11.7
Sex*		
Male	7.4	5.1
Female	6.8	5.7
Race*		
White, Non-Hispanic	6.3	4.8
Black, Non-Hispanic	12.6	8.7
Hispanic	13.7	5.7
Asian/PI, Non-Hispanic	7.6	8.4
Other	7.5	9.7
Education*		
Less Than HS	14.3	8.6
HS Graduate or GED	8.4	6.5
Some College	7.4	6.0
College Graduate or Higher	5.1	3.9
Selected Cities/Towns*		
Springfield	13.1	10.2
Lowell/Lawrence	11.9	5.5
Fall River/New Bedford	11.3	7.0
Boston	9.2	6.3
Worcester	8.3	4.6

Source: Massachusetts Behavioral Risk Factor Surveillance System
* Note: Data are age-adjusted to the 2000 U.S. standard population.

Mortality

In 2007, diabetes was the 9th leading (underlying) cause of death in the Commonwealth, as it had been in 2005 and 2006. (In 2003 and 2004, diabetes ranked 7th and 8th, respectively.) In 2007, the diabetes mortality rate as a leading (underlying) cause was 16.5 per 100,000 deaths, which translates to a total of 1,216 Massachusetts residents. (Figure 2)

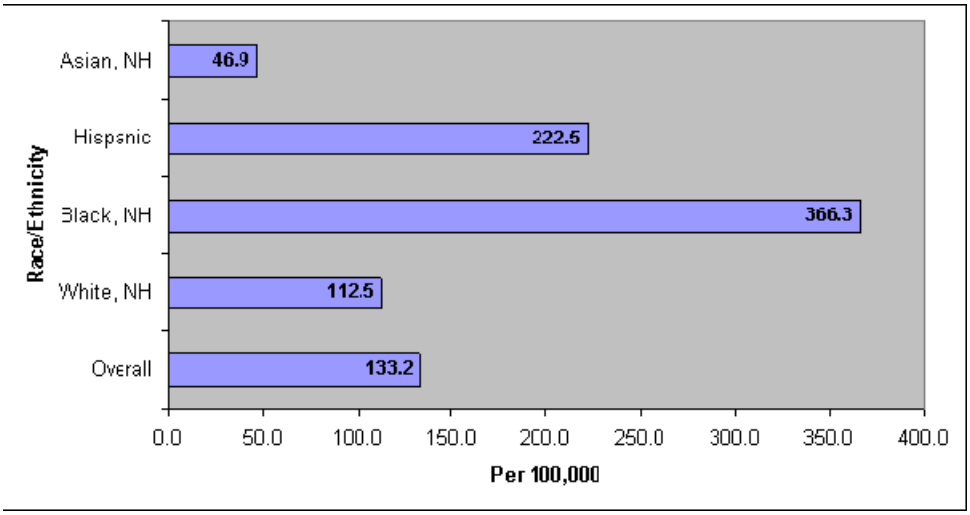
Figure 2. Diabetes Deaths, Massachusetts: 1999-2007



Hospitalizations

From 2004 through 2006, there were on average, 5,442 discharges each year where diabetes was the primary diagnosis. The age-adjusted hospitalization rate for diabetes as the primary diagnosis was 133.2 hospitalizations per 100,000 residents on average from 2004 through 2006. Rates were highest among Black, non-Hispanics with 366.3 hospitalizations per 100,000 residents on average from 2004 through 2006 (Figure 3).

Figure 3. Diabetes Hospitalization Rates by Race/Ethnicity, MA (2004 - 2006)



Source: Massachusetts Hospital Discharge Data, Mass. Division of Healthcare Finance and Policy.

Complications: Amputations, Blindness, Kidney Failure

- From 2002 to 2006, there were **9,921 diabetes-associated lower extremity amputations (LEA),** accounting for 70.2% of all LEAs performed in Massachusetts. (Source: Division of Health Care Finance and Policy, Uniform Hospital Discharge Data System)

- From 2001 to 2006, there were **1,495 new cases of blindness** caused by diabetes, accounting for 11.9% of all new cases of blindness in the state (n=12,523). (Source: Massachusetts Commission for the Blind Register)

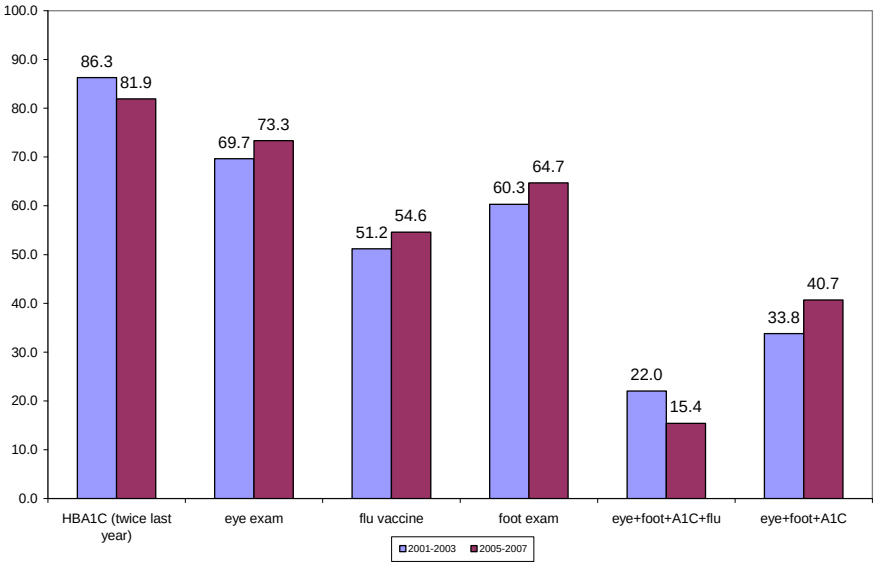
- From 1999 to 2006, there were **5,288 new cases of end-stage renal disease (ESRD)** caused by diabetes, accounting for 39% of all new cases in the state (n=13,558). (Source: End-Stage Renal Disease Network of New England)

Preventive Care

There are standard guidelines for what types of preventive care adults with diabetes should receive. The BRFSS collects data on several diabetes preventive measures including Hemoglobin A1c, eye exams, foot exams, and flu vaccine. BFRSS data show that Massachusetts has made incremental gains in adults with diagnosed diabetes receiving many of their preventive care services, namely eye and foot exams and flu vaccines (Figure 4).

Few residents report receiving all four of the recommended preventive care services tracked by BRFSS. For the years 2003-2005, only 15% of adults with diabetes reported receiving an eye exam, foot exam, two A1cs and a flu vaccine in the last twelve months (Figure 4).

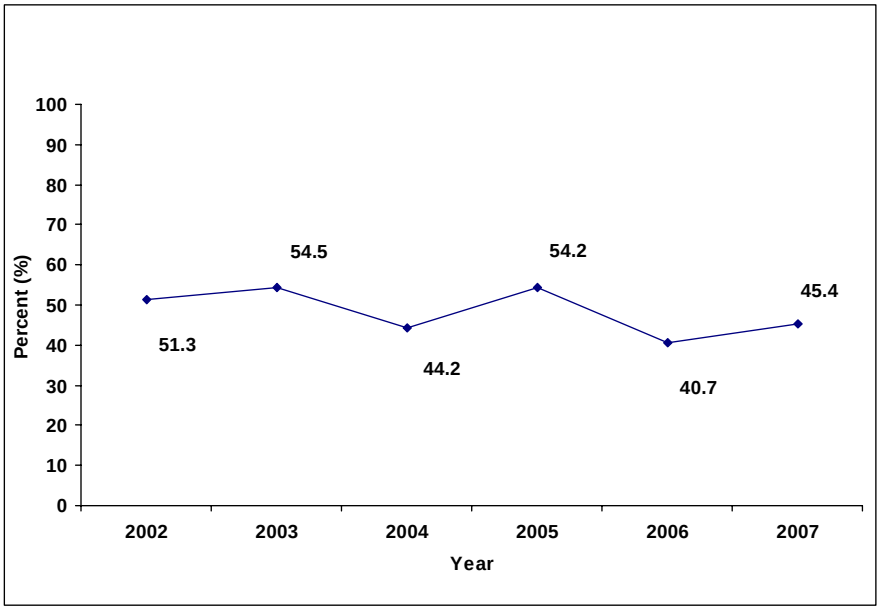
Figure 4. Percentage of Adults with Diabetes Receiving Recommended Preventive Care Services (2001-2003 and 2005-2007), Massachusetts



Note 1: Years shown are 2001 to 2003 and 2005 to 2007. 2004 is not shown because there is insufficient data for some of the indicators for reliable analysis.

Another important aspect of preventive care is diabetes self-management education. Among those with diabetes, less than half report having ever attended a class in diabetes management. While there were year to year fluctuations, the six-year average was 45.4%.

Figure 5. Percentage of Adults with Diabetes Who Self-Reported They Took a Class on How to Manage Their Diabetes (2002 - 2007)



Task Force Recommendations

Recommendation 1: Help providers adhere to the *Massachusetts Guidelines for Adult Diabetes Care* for patients with diabetes and pre-diabetes.

Both national studies and state data indicate that people with diabetes do not receive recommended levels of preventive care, leaving wide gaps between current recommendations and actual practice. Although numerous evidence-based models for implementing standards of care exist, the reality is that providers face many challenges in adopting these models. It is anticipated that identifying barriers, and educating providers about successful strategies being used in the state to overcome them, will result in improved diabetes care. In addition, linking performance improvement to continuing medical education credits could provide meaningful incentives to providers to implement best practices.

Education alone will not address this issue entirely; processes and systems that promote optimal care of diabetes must also be supported and implemented, especially the use of multidisciplinary teams, group classes, implementation of the Chronic Care Model, establishing a Medical Home, and chronic disease self-management.

The *Massachusetts Guidelines for Adult Diabetes Care* were developed in 1999. Updated every two years, the *Guidelines* are based on the American Diabetes Association (ADA) Clinical Practice Recommendations and approved by a workgroup convened by the Massachusetts Diabetes Prevention and Control Program, which includes all of the state's major health insurers. The *Guidelines* represent the minimum standards of care for all adults living with or at-risk for diabetes, regardless of insurer.

Action Steps:

1. **Identify best practices / models for delivering standards of care**

- Working through the National Committee for Quality Assurance (NCQA), obtain HEDIS data (see glossary) from all the state's health plans for the comprehensive diabetes care measure.
- Work with the Massachusetts Association of Health Plans (MAHP) and health plans to identify providers whose patients with diabetes are receiving comprehensive diabetes care, in order to identify best practices.
- Work with other organizations (including the Massachusetts Health Quality Partners (MHQP), MassPro, Massachusetts Medical Society (MMS) and the Institute for Healthcare Improvement) to help identify best practices and

analyze compliance with the *Massachusetts Guidelines for Adult Diabetes Care*.
- Identify local and national evidenced-based models for improving care for people with diabetes and other chronic conditions for possible statewide implementation. (MMS will take the lead on surveying/interviewing the identified best clinical practices regarding successful strategies in providing optimal diabetes care within the state.)

2. Identify barriers and best strategies to implementing standards of care at the provider, systems and societal levels

- Working with a number of agencies (i.e., DPH, MMS, ADA, Diabetes Coalition of Massachusetts (DCOM) and Diabetes Educators of Eastern Massachusetts (DEEM)), to survey diverse medical practices throughout the state on barriers and strategies.
- Use the Task Force Workgroup on Public Education's findings on patients' perceptions of barriers to care to inform provider education efforts.

3. Educate providers (entire health care team, including physicians, nurse practitioners, registered dietitians, certified diabetes educators, nurses, community health workers and medical assistants) on the *Guidelines*, best practices and ways to overcome barriers to *Guidelines* implementation

- Promote the use of one set of guidelines (the *Massachusetts Guidelines for Adult Diabetes Care*) as the minimum standards of care.
- Continue to disseminate and promote the *Massachusetts Guidelines for Adult Diabetes Care* and related tools
- Disseminate identified successful strategies to implementing the *Guidelines*
- Educate providers about high-risk populations (i.e., patients on second generation anti-psychotics[3])
- Assist providers in transforming systems of care to achieve improvements in clinical outcomes and in patient and provider satisfaction.
- Link required Continuing Medical Education (CME) credits for licensed professionals to performance improvement to encourage applying knowledge to practice, and promote CMEs related to diabetes care as a way to fulfill the "risk management" category requirements of continuing education
- Ensure links to community resources by educating providers about diabetes self-management education, chronic disease self-management, and other programs that facilitate healthy lifestyles (i.e., Mass in Motion, Walk Boston).

[3] 2004. Consensus Development Conference on Antipsychotic Drugs and Obesity and Diabetes. Diabetes Care, vol. 27, no. 2. (February): 596-601.

Recommendation 2: Implement systems changes that will facilitate a coordinated, multidisciplinary team approach to care.

Certain policy and systems changes will enhance diabetes care. For example, many people with diabetes cannot afford the cost of multiple medications, diabetes-related supplies (such as test strips), and referrals for specialty care, such as dilated eye exams. Eliminating or reducing financial barriers for patients would facilitate better self-management and adherence to medication and monitoring recommendations. Encouraging solo or small practices to form networks (virtual or otherwise) to be able to communicate with one another and/or share resources, could greatly benefit providers, particularly in rural or underserved areas of the state. Enabling all labs to accept standing orders would help patients get recommended lab tests and ensure that providers have access to lab results in a timely manner. Automatic calculation and reporting of glomerular filtration rates is a simple yet effective way of alerting providers to renal complications of diabetes.

Providers would benefit from other innovations. For example, insurers routinely send providers information on their patient panels and how well they are meeting the recommended guidelines for care. Requiring the various insurers to send these reports in a uniform and/or interoperable format would greatly facilitate the providers' ability to track their patients with diabetes.

1. **Encourage systems changes among laboratories, providers, and insurers to promote optimal care in accordance with the Guidelines.**

- Work with health plans and laboratories operating in Massachusetts to 1) identify key lab tests for which standing orders would improve patient outcomes, and 2) automatically estimate glomerular filtration rates.
- Establish regional networks for solo or small group practices within MA to create virtual or face to face collaboratives that would link providers with disease management resources, specialty care and provide practice coaches.

2. **Provide financial incentives for appropriate care.**

- Eliminate or reduce financial barriers for recommended preventive care (i.e., co-pays and deductibles for specialty care, test strips, medical nutrition therapy, diabetes self-management education, and chronic disease self-management).
- In conjunction with provider payment reform, link Guidelines implementation and best practices to outcome and performance measurement.

3. **Promote models of care that adequately reimburse providers for service that can best meet the needs of patients with complex health conditions such as diabetes.**

- Reimburse providers with programs that utilize community health workers to provide self-management support including outreach, education, navigation, referral, and ongoing follow up and support in order to engage diverse populations in self management of chronic disease.
- Use the EOHHS medical homes pilots incorporating a multidisciplinary team-based approach that includes community health workers to evaluate the true cost of providing comprehensive services.

4. **Increase the use of clinical decision tools such as diabetes registries and other IT tools that support providers proactively as well as when the patient is in a visit.**

- Ensure that providers have the ability to create their own disease registries as EMRs and medical homes are implemented across the state.
- Ensure interoperability or uniform format of health plans' registries given to providers.

Recommendation 3: Create a healthy workplace environment for preventing and managing diabetes resulting in measurable and improved outcomes for adults living with diabetes.

The impact of worksite wellness programs on Massachusetts adults and their families can be significant, considering 66% of adults, or 3.1 million people, are in the Massachusetts workforce.[4] Evidence has shown that there is a direct link between an organization's bottom line and the number of employees who have chronic diseases, mental health conditions, or other illnesses that impact their ability to perform their jobs.[5] When employers implement policies and environmental changes that support optimal employee health and well-being, they encourage employees to engage in healthy behaviors, thereby reducing the impact of chronic conditions.

There is increasing evidence that worksite wellness programs not only improve individual employee health but can also:

- reduce healthcare costs by 26%
- reduce workers' compensation claims by 30%
- reduce sick leave absenteeism by 28%[6]

Several scientific reviews indicate that worksite health promotion programs reduce medical costs and absenteeism costs. Thirteen different studies calculated benefit/cost ratios and all showed the savings from these programs to be much greater than their cost, with medical cost savings averaging $3.48 and absenteeism savings averaging $5.82 per dollar invested in the programs.[7]

According to the American Diabetes Association (ADA), the national cost of diabetes in the U.S. in 2007 exceeded $174 billion. This estimate includes $116 billion in excess medical expenditures attributed to diabetes, as well as $58 billion in reduced national productivity. The ADA estimates that the cost of diabetes in Massachusetts alone is $4.3 billion. People with diagnosed diabetes, on average, have medical expenditures that are approximately 2.3 times higher than for people without the disease. Approximately one in 10 health care dollars is attributed to diabetes. Indirect costs include those related to absenteeism, reduced productivity, and lost productive capacity due to early mortality. In fact, productivity losses associated with chronic diseases are four times the cost of treating chronic disease.[8]

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[4] U.S. Census Bureau, 2006. Current Population Survey (December).
[5] Chapman, Larry S. 2003. Meta-evaluation of worksite health promotion economic return studies. *Art of Health Promotion* Newsletter 6, no. 6 (January/February).
[6] Ibid.
[7] Aldana Steven G. 2001. Financial impact of health promotion programs: A comprehensive review of the literature. *American Journal of Health Promotion* 15, issue 5:296-320.
[8] American Diabetes Association. 2008. Economic Costs of Diabetes in the US in 2007, *Diabetes Care* 31, no. 3 (March): 596-615

Diabetes is not the only chronic disease impacting employees in the workplace. However, all employees benefit from the promotion of strategies to reduce or control diabetes because these same strategies can also reduce the risk of developing other chronic conditions such as obesity, heart disease, stroke, and high blood pressure. By focusing on modifiable risk factors (i.e. increasing physical activity, improving nutrition, and stress management) employers will be able to keep people healthy and provide high-risk populations resources to manage their conditions and reduce their risk of developing additional chronic diseases.

There are at least five areas that companies can consider in their business rationale to introduce a wellness program:

- Productivity and Performance
- Human Capital
- Sustainability
- Profitability
- Healthcare Costs

Action Steps

1. **Expand the "Working on Wellness Toolkit" developed by DPH to include a diabetes and pre-diabetes-specific module, which will include:**
   - the business case for diabetes prevention and management
   - recommended policies, programs and resources for employers

   The diabetes module will serve as a guide for identifying at-risk populations and developing policies and programs aimed at preventing and managing diabetes and will guide employers to:
   - Develop a supportive work environment so that employees with diabetes feel comfortable adopting and performing the behaviors that promote good diabetes control.
   - Coordinate all corporate diabetes prevention and control efforts to make them more efficient and accountable within the organization.
   - Provide encouragement and opportunities for all employees with pre-diabetes to adopt healthier lifestyles that reduce their risk for diabetes and other chronic diseases.
   - Negotiate the highest quality medical care for people who are diagnosed with pre-diabetes and diabetes.
   - Create links to interventions in the community to prevent or manage diabetes both inside and outside of the workday.
   - Educate employees about the importance of preconception counseling for women with diabetes or who are at-risk for diabetes.

2. **Expand the Working on Wellness Initiative to additional employers across the state.**

    - Provide training on diabetes-related interventions, utilizing the newly-created diabetes module, to a subset of the 23 pilot and Phase 2 Working on Wellness sites that have identified diabetes as a priority health risk.
    - Expand the Working on Wellness Initiative to provide training, technical assistance, resources, and education to new employer groups, such as schools and health care systems, in implementing worksite wellness initiatives utilizing the "Working on Wellness Toolkit".
    - Expand the Working on Wellness Initiative to provide training, technical assistance, resources, and education to new employer groups who are located in the same communities as the existing 23 sites.

3. **Work with employers to implement on-site flu vaccines for employees**

    - Increase awareness among worksites about the importance of encouraging their employees to get the flu shot
    - Partner with outside vendor to bring on-site flu vaccines to worksites across the state.

4. **Implement the Diabetes Primary Prevention (DPP) Intervention for DPH employees**

    - Build upon progress already made by the DPH Diabetes Prevention and Control Program at Massachusetts-based companies by offering the DPP intervention to DPH staff at 250 Washington Street in Boston. The DPP is an evidence-based lifestyle intervention aimed at increasing awareness of diabetes, and includes intensive training in nutrition, physical activity, and behavior modification. This intervention teaches employees to set realistic goals and adopt behaviors to achieve a healthy lifestyle and overcome barriers to delaying the onset of diabetes or reducing diabetes-related complications, and ultimately reducing costs.

5. **Track and endorse legislation and policies that expand coverage for people with pre-diabetes and diabetes to include lifestyle interventions that focus on diabetes prevention and management.**
    - For example, there are state and federal bills proposing a 50% tax credit for expenses companies incur when operating workplace initiatives.

Recommendation 4: Develop a high-level statewide public awareness and education campaign targeting high risk groups

Certain sub-populations in the Commonwealth are disproportionately affected by diabetes and pre-diabetes. For example while 7.4% of the general population are diagnosed with diabetes, many sub-groups have significantly higher rates including Hispanics, Blacks, older adults, residents earning less than $25,000 per year, residents having less than a high school education, the unemployed and individuals with serious mental illnesses.

Focus groups with consumers suggest a lack of understanding about diabetes, and, in general, a lack of appreciation of the seriousness of the disease. At the same time, anecdotal evidence suggests that members of high-risk groups have a fatalistic approach to the disease, and believe that complications are inevitable. In light of these issues, the Task Force is recommending a high-level statewide education campaign to raise awareness of diabetes and pre-diabetes and to educate people that the disease and related complications may be prevented.

Mass in Motion is the Department of Public Health's far-reaching public information campaign on wellness. Its goal is primarily the prevention of obesity and its related chronic diseases. There are also public education efforts undertaken by the American Diabetes Association on a national level and locally, many health centers have implemented creative education and outreach strategies for their populations. Public education efforts should be complementary to local initiatives targeting high-risk groups.

Action Steps

1. **Complete an inventory of existing diabetes awareness and education initiatives and assess their effectiveness with the goal of identifying best practices or benchmark campaigns.**

    - Share best practices and available resources with key stakeholders, by posting on website and perhaps holding a one day conference.

2. **Develop a central clearinghouse website that would provide easy access to information about diabetes and best practice approaches to awareness and education.**

3. **Implement a comprehensive communications strategy using a two-pronged approach: grass roots and media.**

    - Develop an overarching message that can be used to tie the messages about healthy diet, exercise, Mass In Motion, and diabetes prevention together.

- Employing the best practice approaches and utilizing available educational resources (i.e. ADA, CDC, NIH) develop a community outreach campaign with not just health care providers, but also houses of worship, non-profits, local shops, social service agencies to reach people at risk with messages on diabetes and healthy lifestyles.
- Develop TV, radio and print campaign with diabetes-specific message to reach a very broad audience - *Diabetes can affect anyone*. The task Force recommends a focus on the *"Many Faces of Diabetes."* Visual should include various people, young and old, from various high risk groups talking about how the disease affects them.
- Organize a public awareness event which will serve to kick off and energize a coordinated education campaign, and will leverage as much earned media coverage as possible.

4. **Develop a comprehensive approach to wellness for those with serious mental illness that includes education about the increased risk of diabetes in those with serious mental illness and the increased risk of depression in those with diabetes.**

Recommendation 5: Increase the number of patients with diabetes who receive diabetes self-management education (DSME) and medical nutrition therapy (MNT) in accordance with state guidelines.

People with diabetes are key partners in the improvement of care for this population. Patients who are engaged and educated have better health and less complications. Researchers from the Centers for Disease Control and New England Medical Center performed a meta analysis showing that patients who took part in self-management education saw an almost immediate improvement in glycemic control.[9]

Diabetes Self-Management Education

Because diabetes is such a complicated disease to manage, education is a necessary component of care. Areas covered should include:

- Diabetes disease process
- Nutrition
- Physical activity
- Medications
- Monitoring and using lab results
- Acute complications
- Complications prevention and recognition
- Goal-setting and problem-solving
- Psychosocial adjustment
- Preconception care, pregnancy, and gestational diabetes (if applicable)

The main goals of **Diabetes Self-Management Education (DSME)** are to provide patients with the management skills necessary to achieve optimal control of their diabetes, and to assist them in becoming effective, self-directed decision makers for their own diabetes care, health, and well-being. Without comprehending the relationship between blood glucose readings, meal planning, and physical activity, people with diabetes will be hindered in their ability to achieve optimal blood glucose control, and are at higher risk for long-term complications. According to the ADA "self-management education is understood to be such a critical part of diabetes care that medical treatment of diabetes without systematic self-management education is regarded as inadequate."[10]

Medical nutrition therapy (MNT) is an integral component of assisting patients in acquiring and maintaining the knowledge, skills, and behaviors to successfully meet the challenges of daily diabetes self-management.

The *2006 Nutrition Recommendations and Interventions for Diabetes*, published by the ADA, identifies three categories of medical nutrition therapy:

1. primary prevention to reduce the risk or delay the onset of diabetes

[9] Norris, Susan L., et al. 2002. Self-Management Education for Adults With Type 2 Diabetes: A meta-analysis of the effect on glycemic control. *Diabetes Care* vol. 25 no. 7 (July):1159-1171.

[10] American Diabetes Association. 2009. Third-Party Reimbursement for Diabetes Care, Self-Management Education, and Supplies. *Diabetes Care* vol. 32 (January):S85-S86.

2. nutrition management for blood glucose control
3. management and prevention in the treatment of co-morbidities.[11]

While DSME and MNT are evidence-based practices and are generally covered by major health insurers, there is uneven utilization of the benefit, especially among certain sub-groups. In the U.S., the age-adjusted percent of adults with diabetes who attended a diabetes self-management class was 57.7% in 2007 (up from 51.4% in 2000). Hispanics were much less likely to receive diabetes education, with only 44% in 2007, compared to 59% of Whites and 60% of Blacks.[12]

Action Steps

1. **Work with insurers to implement an evaluation program to identify patients who do not use DSME or MNT services.**

2. **Identify barriers that prevent people with diabetes from using DSME or MNT benefits.**

3. **Support education and outreach programs to increase the number of patients who receive DSME and MNT.**

4. **Evaluate ways that Community Health Workers can increase patients' use of these services.**

[11] American Diabetes Association. 2006. Nutrition recommendations and interventions for diabetes. *Diabetes Care* vol. 29 (September):2140-2157.
[12] Centers for Disease Control and Prevention, Age-Adjusted Percentage of Ever Attended Diabetes Self-Management Class for Adults Aged ≥ 18 Years with Diabetes, United States, 2000–2007. http://www.cdc.gov/diabetes/statistics/preventive/fy_class.htm.

Recommendation 6: Ensure that appropriate staffing levels, training programs and certification resources exist to provide the full range of services needed for patients with diabetes and pre-diabetes.

The Task Force fully supports diabetes education programs that can be implemented using patient-to-patient models, community health workers, and community-based education programs. (Reimbursement for these models is negligible and these programs are usually implemented using discretionary dollars or grant funding.)

In the current payment system, diabetes self-management education hinges on two related but different providers: certified diabetes educator (CDE) and the accredited diabetes education program.

DSME requirements vary by insurer. Some insurers require that DSME be provided by a CDE or they reimburse higher rates for their services. Other payors – most notably Medicare – do not require a CDE, but instead require programs to meet the *National Standards for Diabetes Self-Management Education*. (Currently, the two national organizations that provide such accreditation are the American Diabetes Association (ADA) and the American Association of Diabetes Educators (AADE).)

Becoming a CDE is a time-consuming process, requiring 1,000 hours of DSME experience, and current employment as a diabetes educator for a minimum of 4 hours per week at the time of application. (Certification is granted through the National Certification Board for Diabetes Educators.)

Becoming an 'accredited education program' for purposes of Medicare reimbursement is equally time-consuming and administratively burdensome, requiring a lot of documentation, formation of an advisory group, clarification of the target population, appointment of a DSME coordinator, written curriculum and an evaluation program.

Each of these provides avenues for patients to get necessary diabetes education and for providers to get reimbursed for those services; however the availability of each of these is inadequate to meet current demand. There are approximately 100 recognized education programs in Massachusetts, largely centered in Boston and its immediate suburbs. The majority of programs are operated by hospital systems.

There are approximately 215 certified diabetes educators in Massachusetts – one CDE for every 1,675 people with diabetes. Data is not available but anecdotal evidence suggests that there are few bilingual CDEs in Massachusetts.

Specialized, diverse, and culturally-appropriate CDEs and recognized education programs are needed to provide the level of outreach and education that improves the health of patients with diabetes.

Action steps

1. **Increase the number of CDEs in the state – especially those who are bilingual.**

    - Identify regions of the state with CDE shortages.
    - Facilitate training opportunities for nurses, dietitians, pharmacists and other health professionals.

2. **Increase the number and promote the expansion of services of accredited DSME programs in Massachusetts to improve reimbursement opportunities and increase access for patients.**

    - Identify underserved areas of the state and facilitate the ADA/AADE accreditation process of DSME programs
    - Facilitate regional utilization of existing or newly accredited programs among solo or small group practices.

Glossary of Selected Terms

Chronic Care Model: The Chronic Care Model summarizes the basic elements for improving care in health systems at the community, organization, practice and patient levels. These elements include self-management, decision support, clinical information systems, delivery system design, community linkages and health care organization. The Model was created by The Improving Chronic Illness Care program, supported by The Robert Wood Johnson Foundation, with direction and technical assistance provided by Group Health's MacColl Institute for Healthcare Innovation. http://www.improvingchroniccare.org/

Community health worker (CHW): a public health professional who applies his or her unique understanding of the experience, language and/or culture of the populations he or she serves in order to carry out at least one of the following roles:

- Bridging/culturally mediating among individuals, communities and health and human services, including actively building individual and community capacity
- Providing culturally appropriate health education, information, and outreach in community-based settings, such as homes, schools, clinics, shelters, local businesses, and community centers
- Assuring that people get the services they need
- Providing direct services, including informal counseling, social support, care coordination, and health screenings
- Advocating for individual and community needs

A CHW is distinguished from other health professionals because he or she:

- is hired primarily for his or her understanding of the populations he or she serves
- conducts outreach a significant portion of the time in one or more of the categories above. and
- has experience providing services in community settings.

Also known as a promotor/promotora, community health advocate, lay health educator, peer health educator, and community health outreach worker.

[Definition from the Massachusetts Department of Public Health]

Diabetes educator: A health professional, such as a registered nurse, registered dietitian, pharmacist, physician, physician's assistant, clinical psychologist, exercise physiologist, occupational therapist, physical therapist, optometrist, podiatrist, or social worker, who specializes in providing care and education to people with diabetes.

Certified: Diabetes educators may be certified by the National Certification Board for Diabetes Educators. The CDE credential indicates that individuals have met

standardized academic and experiential criteria. The certification examination is designed and intended solely for licensed, certified, or registered health care professionals who have defined roles as diabetes educators, not for those who may perform some diabetes-related functions as part of or in the course of other usual and customary duties. For information on both the CDE and the BC-ADM certifications, refer to http://www.diabeteseducator.org/ProfessionalResources/Certification.

[Definition from the US Centers for Disease Control, "Establishing a Community-Based DSME Program for Adults with Type 2 Diabetes to Improve Glycemic Control: An Action Guide"]

HEDIS: "Healthcare Effectiveness Data and Information Set"; a tool used by the vast majority (90%) of health plans to measure performance on important levels of care and service. It was developed by the National Committee for Quality Assurance (NCQA).

Hemoglobin A1c (HbA1c): A1c is a blood test that measures average blood glucose over time. Recommendations are to keep this value less than 7% to minimize the risks of complications from diabetes; also called *glycohemoglobin,* glycated hemoglobin, glycosylated hemoglobin, or A1c.

Medical Home: A community-based primary care setting which provides and coordinates high quality, planned, patient and family-centered health promotion, acute illness care, and chronic condition management. [Definition from Center for Medical Home Improvement, 2008]

Pre-diabetes: A condition where blood glucose levels are higher than normal but not high enough to be classified as diabetes. Pre-diabetes usually has no symptoms, but raises a person's risk of developing type 2 diabetes, heart disease, stroke, and eye disease.

Type 2 diabetes: A disease in which the body either makes too little insulin or cannot properly use the insulin it makes to convert blood glucose to energy.