Dean Health System

Diabetes Care Improvement Project

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Operations, Vice President

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Diabetes Task Force, Team Leader

Intermountain Health Care Mini-ATP
June 2004
Dean Health System Today

- 500 physicians
- 4200 employees
- 61 care delivery locations
- 55 outreach locations
- $800 million in revenues
- 229,000 Dean Health Plan enrollees
The Vision

- Create the ideal health care experience at Dean Medical Center for patients with Diabetes Mellitus

- Follow Care Guidelines of the Wisconsin Diabetes Control Program
# Essential Diabetes Mellitus Care Guidelines - Wisconsin

Care is a partnership between the patient, family, and the diabetes team: primary care provider, diabetes educator, nurse, dietitian, pharmacist, and other specialists.

Abnormal physical or lab findings should result in appropriate interventions.

For further details and references on each specific item, please refer to the published documents and implementation tools in the full-text guidelines available on the Internet at [https://health.wisconsin.gov/health/diabetes/dmglcguidelines.htm](https://health.wisconsin.gov/health/diabetes/dmglcguidelines.htm) or call (608) 266-6371.

<table>
<thead>
<tr>
<th>Concern</th>
<th>Care/Test</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Recommendations</strong></td>
<td>Diabetes focused visit</td>
<td>Type 1: every 3 months; Type 2: every 3 - 6 months</td>
</tr>
<tr>
<td></td>
<td>Review management plan, problems &amp; goals</td>
<td>Every 3 - 6 months (or more often based on patient complications)</td>
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<tr>
<td></td>
<td>Assess Physical Activity/Calories/Wt/Growth</td>
<td>Each focused visit; revise as needed</td>
</tr>
<tr>
<td><strong>Glycemic Control</strong></td>
<td>Review meals &amp; frequency of low blood sugar</td>
<td>Each focused visit</td>
</tr>
<tr>
<td></td>
<td>Self-blood glucose monitoring, set &amp; service goals</td>
<td>Every 3 - 6 months</td>
</tr>
<tr>
<td></td>
<td>HbA1C - goal &lt;7.0% or &lt;6% above threshold</td>
<td>Every 3 - 6 months</td>
</tr>
<tr>
<td><strong>Kidney Function</strong></td>
<td>Urine for microalbumin: if higher than 30 mg/24 hours, start ACE inhibitor (unless contraindicated)</td>
<td>Type 1: begin with puberty or after 5 yrs' duration, then yearly; Type 2: at diagnosis, then yearly</td>
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<tr>
<td></td>
<td>Creatinine clearance &amp; proteinuria</td>
<td>Yearly after microalbumin &gt;30 mg/24 hour at diagnosis and as indicated</td>
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<tr>
<td><strong>Cardiovascular</strong></td>
<td>Smoking status</td>
<td>Each focused visit</td>
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<tr>
<td></td>
<td>Lipid profile:</td>
<td>At diagnosis, then yearly if abnormal; follow National Cholesterol Education Program (NCEP) guidelines; Dyslipidemia: if abnormal, follow NCEP guidelines</td>
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<tr>
<td></td>
<td>Adult goals:</td>
<td>At diagnosis, then yearly if abnormal; follow NCEP guidelines</td>
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<tr>
<td></td>
<td>HDL &gt;45 mg/dl (goal)</td>
<td>LDL &lt;100 mg/dl (optional goal)</td>
</tr>
<tr>
<td></td>
<td>Blood pressure</td>
<td>Each focused visit</td>
</tr>
<tr>
<td></td>
<td>[Goal: &lt;130/80]</td>
<td>Age &gt;40 years</td>
</tr>
<tr>
<td></td>
<td>[Evidence of diabetic nephropathy: goal &lt;120/75]</td>
<td>Age &gt;40 years</td>
</tr>
<tr>
<td><strong>Eye Care</strong></td>
<td>Dilated eye exam by an ophthalmologist or optometrist</td>
<td>Type 1: if age &gt;10 yrs, within 5 yrs of onset, two yearly; Type 2: at diagnosis, then yearly or in alternate years at the discretion of the ophthalmologist or optometrist</td>
</tr>
<tr>
<td><strong>Oral Health</strong></td>
<td>Oral health screening</td>
<td>Each focused visit; if diabetes, refer for dental exam every 6 months (every 12 months if indicated)</td>
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<tr>
<td><strong>Foot Care</strong></td>
<td>Inspect feet, with shoes and socks off</td>
<td>Each focused visit; stress need for daily self-exam</td>
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<tr>
<td></td>
<td>Comprehensive lower extremity exam</td>
<td>Yearly</td>
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<tr>
<td><strong>Pregnancy</strong></td>
<td>Assess contraception, discuss family planning, discuss medications for teratogenicity</td>
<td>At diagnosis &amp; yearly during childbearing years</td>
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<tr>
<td></td>
<td>Fertility counseling</td>
<td>3 - 6 months prior to conception</td>
</tr>
<tr>
<td><strong>Self Management Training</strong></td>
<td>By diabetes educator, preferably a CDE</td>
<td>At diagnosis, then every 6 - 12 months or more as indicated by the patient’s status</td>
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<tr>
<td></td>
<td>Curriculum to include the 10 key areas of the national standards for diabetes self-management education</td>
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<tr>
<td><strong>Medication Therapy</strong></td>
<td>By a registered dietician, preferably a CDE</td>
<td>Type 1: at diagnosis, then every 3 - 6 months; Type 2: at diagnosis, then every 6 - 12 months; or more often as indicated by the patient’s status</td>
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<tr>
<td></td>
<td>To include doses defined by the American Diabetic Association’s Nutrition Practice Guidelines</td>
<td></td>
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<tr>
<td><strong>Immunizations</strong></td>
<td>Influenza</td>
<td>Per ACIP (Adults Immunization and Immunization Practice) Immunization Practice Guidelines</td>
</tr>
<tr>
<td></td>
<td>Pneumococcal</td>
<td>Per ACIP</td>
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</tbody>
</table>

These guidelines were developed to provide guidance to primary care providers and are not intended to replace or prejudice clinical judgment.

Note: These are the 2006 Guidelines; they are currently in the process of being updated for 2004.

DCP April 2001
Conceptual Model

Prevention → Detection → Treatment

Ambulatory Care

- Glycemic Control
  - Microalbumin
  - Lipid Mgmt
    - Freq of Testing
    - Control

Kidney Function

- Cardiovascular
  - Eye Care
  - Foot Care

Pregnancy

- Self Management Training
- Medical Nutrition
- Immunizations
- Oral Health

HbA1c

Freq of Testing

- incr % of pt w/ <7%
- incr % of pt w/ >9%
- decr % of pt w/ >9%
Conceptual Model

Ambulatory Care

Glycemic Control

Kidney Function

Cardiovascular

HbA1c

Freq of Testing

Microalbumin

Freq of Testing

Lipid Mngt

Freq of Testing

Control

incr % of pt w/ <7%

decr % of pt w/ >9%

incr % 2 tests/yr
Goals by 12/31/04:

- 10% increase - twice annual testing for A1c
- 10% increase - patients with A1c below 7%
- 10% decrease - patients with A1c >9.0%
- 10% increase - annual LDL-C testing
- 10% increase - patients with an LDL-C below 100mg/dl
- 20% increase - annual screening for nephropathy
Diabetes Improvement Project: The Process

- Define the population
- Identify clinically meaningful and measurable outcomes
- Automate the process
- Decision support
- Patient satisfaction survey
- Provider satisfaction survey
- Implement at a pilot site
- Modify as necessary
- Implement system-wide
## DHS DM Population

<table>
<thead>
<tr>
<th>DX Subgroup</th>
<th>#</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>2x DM dx</td>
<td>9897</td>
<td>72%</td>
</tr>
<tr>
<td>1x DM dx</td>
<td>2973</td>
<td>22%</td>
</tr>
<tr>
<td>2 Gluc &gt;200</td>
<td>373</td>
<td>3%</td>
</tr>
<tr>
<td>HbAlc ≥ 6.5%</td>
<td>466</td>
<td>3%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>13,709</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

October 2003
DHS Baseline Data

% of Patients with Annual Testing

- 2+Dx of DM: 55%
- 1Dx of DM: 50%
- TwoGlucose≥200: 50%
- HbA1c≥6.5: 55%
- Totals: 48%

Legend:
- % with 1 or more LDL tests
- % with 2 or more HbA1c tests

Oct. 2003
DHS Baseline Data

% of Patients by HbA1c Control Level

- 2+Dx of DM
- 1Dx of DM
- Two Glucose >=200
- HbA1c >=6.5
- All Groups

- 9 or greater
- 8 to <9
- 7 to <8
- <7

Oct. 2003
Refining the Population

Linking the patients to a PCP

- Patient reported PCP
- Imputation based on encounters
- Physician confirmation sign off list
Patient Reminder Letters

*Letter from personal physician*

- Orders in the lab
- Instructions for having lab drawn
- Schedule diabetes-focused visit
- Educational insert
Decision Support

- EMR template for diabetes-focused visit
- Diabetes treatment algorithm based on HbA1c
- Patient assessment tool
- Web-based searchable reference source with patient education component
**Did change result in improvement?**

<table>
<thead>
<tr>
<th>Month</th>
<th># of Patients with HbA1c Results</th>
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<tbody>
<tr>
<td>Jan-02</td>
<td></td>
</tr>
<tr>
<td>Feb-02</td>
<td></td>
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<tr>
<td>Mar-02</td>
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<td>Apr-02</td>
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<td>May-02</td>
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<td>Jun-02</td>
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<td>Jul-02</td>
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<td>Aug-02</td>
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<td>Sep-02</td>
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<td>Oct-02</td>
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<td>Nov-02</td>
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<td>Dec-02</td>
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<td>Jan-03</td>
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<td>Aug-03</td>
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<td>Sep-03</td>
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</tbody>
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**Total # of IM Diabetic Patient HbA1c Tests per Month**

- Jan-02: 400
- Feb-02: 600
- Mar-02: 800
- Apr-02: 1000
- May-02: 1200
- Jun-02: 1400
- Jul-02: 1600
- Aug-02: 1800
- Sep-02: 1600
- Oct-02: 1400
- Nov-02: 1200
- Dec-02: 1000
- Jan-03: 800
- Feb-03: 600
- Mar-03: 400
- Apr-03: 600
- May-03: 800
- Jun-03: 1000
- Jul-03: 1200
- Aug-03: 1400
- Sep-03: 1600

Reminder Letters sent out 7/24- 8/28 to 1002 Patients without labs since 12/2/02.
% of IM Diabetes Patients with at least one HbA1c Test

- Jan-Jun 2002: 69%
- Jul-Dec 2002: 71%
- Jan-Jun 2003: 72%
- Jul-Dec 2003: 77%

Reminder letters sent out July 2003
Employer Perspective

% of IM Diabetes Patients with Last HbA1c Test Value by Control Level

- Jan-Jun 2002: 32%
- Jul-Dec 2002: 38%
- Jan-Jun 2003: 44%
- Jul-Dec 2003: 33%

6 month Period

% of Patients

- ≤7.0%
- >9.0%*

Reminder letters sent out July 2003

*include not tested
Patient Satisfaction Survey

- Mostly positive comments
- Areas for improvement:
  - Access to diabetes nurse specialists
  - More frequent contact with diabetes care provider for: foot care, lab result discussion, answering questions
  - More information on: sick day guidelines, hyperglycemia, hypoglycemia, glucose meters, diabetes medications, dietary information
Provider Satisfaction Survey

- Patient education materials
- Decision support tools
- Access to the diabetes program
- Care team approach