Diabetes Prevention from Research to Reality: The U.S. National Diabetes Prevention Program

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The findings and conclusions in this presentation are those of the author and do not necessarily represent the views of the CDC.
The health of individuals is inseparable from the health of communities

(Healthy People 2010)

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Principle I: Diabetes Risk Must Match Program Cost

What Are Our Chances of Developing Diabetes?

- **Lifetime Risk** – from birth till death
  - About 1-in-3 or 33%
    (Narayan KMV, et al. JAMA 2003;290:1884-1890)

- **Annual Risk** – adults
  - About 1%
### Principal II: Program Must Be Effective

<table>
<thead>
<tr>
<th></th>
<th>Placebo</th>
<th>Metformin</th>
<th>Lifestyle</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Annual Incidence of diabetes</strong></td>
<td>11.0%</td>
<td>7.8%</td>
<td>4.8%</td>
</tr>
<tr>
<td><strong>Relative reduction</strong> (compared with placebo)</td>
<td>----</td>
<td>31%</td>
<td>58%</td>
</tr>
<tr>
<td><strong>Number needed to treat</strong> (to prevent 1 case in 3 years)</td>
<td>----</td>
<td>13.9</td>
<td>6.9</td>
</tr>
</tbody>
</table>

*The DPP Research Group, NEJM 346:393-403, 2002*

### Lifestyle Intervention Trials
(All participants had pre-diabetes)

- Pan et al. (1997)
- Tuomilehto et al. (2001)
- DPP Research Group (2002)**
- Kosala et al. (2005)
US Research Studies that Have Translated the DPP Trial Lifestyle Intervention

- 13 studies
- Core sessions ranged from 16 to 6
- Mean sessions attended
  - 16 sessions (9-14)
  - 12 sessions (7-9)
  - 11 sessions (8)
- Weight Loss: 6% - 2.7%
  - The more sessions attended the greater the wt. loss

Principal III: Program Must Be Economically Sustainable

DPP Lifestyle Program Summary of Benefits:

- Treating 100 high risk adults (age 50) for 3 years…
  - Prevents 15 new cases of Type 2 Diabetes
  - Prevents 162 missed work days
  - Avoids the need for BP/Chol pills in 11 people
  - Adds the equivalent of 20 perfect years of health
  - Avoids $91,400 in healthcare costs

2 DPP Research Group. Diabetes Care. 2003 Sep;26(9):2693-4
Principal III:
Program Must Be Economically Sustainable

Q. How much should the lifestyle intervention cost in order to save money?

<table>
<thead>
<tr>
<th>Age</th>
<th>Year</th>
<th>Usual Care</th>
<th>If they get the DPP</th>
<th>Costs avoided each year</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>1</td>
<td>$2,496</td>
<td>$2,228</td>
<td>$268</td>
</tr>
<tr>
<td>51</td>
<td>2</td>
<td>$2,514</td>
<td>$2,217</td>
<td>$297</td>
</tr>
<tr>
<td>52</td>
<td>3</td>
<td>$2,556</td>
<td>$2,207</td>
<td>$349</td>
</tr>
<tr>
<td>53</td>
<td>4</td>
<td>$2,546</td>
<td>$2,254</td>
<td>$292</td>
</tr>
<tr>
<td>54</td>
<td>5</td>
<td>$2,567</td>
<td>$2,235</td>
<td>$332</td>
</tr>
</tbody>
</table>

A. About $300 per year

Principal IV:
Program Must Be Available

2,686 YMÇAs
57% of U.S. households are located within 3 miles of a YMCA

No public health impact without availability to high risk population

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Prevention of Type 2 Diabetes
The Community – Clinic Partnership Model

- Insurers, Employers
- Informed Population
- Strong Community Organizations
- Healthy Public Policy
- Supportive Environments
- Total Population
- Pre-diabetes
- Diabetes
- Complications

National Diabetes Prevention Program

Goal:
- Systematically scale the translated model of the Diabetes Prevention Program (DPP) for high risk persons in collaboration with community-based organizations that have necessary infrastructure, health payers, public health, academia, and others to reduce the incidence of type 2 diabetes in the United States.
Four Key Levers

(1) Training the work force that can implement the program cost effectively

(2) Implementing a recognition program that will contribute to assuring quality, lead to reimbursement, and allow CDC to develop a registry of programs for public reporting

(3) Intervention delivery sites that will build the infrastructure and some will provide a “laboratory” for additional refinement of this prevention system

(4) Increasing referrals and utilization of the prevention system through health marketing and other strategies
Current Status of the U.S. National Diabetes Prevention Program

- CDC contracted with Emory University to establish the Diabetes Training and Technical Assistance Center (DTTAC) and currently developing Master Trainer curriculum and unifying Lifestyle Coach curriculum – expected final drafts Nov/Dec 2010
- CDC currently developing the criteria for program recognition – expected final draft Sept 2010
  - Initiating steps for single data collection platform for program reporting

Y-USA and UnitedHealth Group (UHG) inaugural participants in the National Diabetes Prevention Program
- CDC and Y-USA announced 11 model sites
- Y-USA and UHG announced 6 model sites
- CDC contracted with MACRO – formative PR/marketing work
- Webcast from Diabetes Translation Conference
  http://preventtype2diabetes.nologyinteractive.com/