Preventing Type 2 Diabetes in West Virginia: Sustaining and Scaling the National Diabetes Prevention Program

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West Virginia Public Health Symposium
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Program Objectives

• Define the problem of diabetes and prediabetes
• Describe the diagnostic criteria for prediabetes
• Describe the evidence base for the prevention of Type 2 diabetes
• Describe state-level efforts to increase access to and use of the National Diabetes Prevention Program
• Describe methods and results of a pilot prevention program among Bureau for Public Health employees
Why Should We Care About Prediabetes?

WE FIRST NEED TO UNDERSTAND THE BIG PICTURE
**Diabetes/Prediabetes Diagnostic Criteria**

<table>
<thead>
<tr>
<th></th>
<th>Normal</th>
<th>PreDiabetes</th>
<th>Diabetes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fasting</strong></td>
<td>65-99 mg/dl</td>
<td>100-125 mg/dl</td>
<td>126 mg/dl or more</td>
</tr>
<tr>
<td><strong>OGTT</strong></td>
<td>140 mg/dl or less</td>
<td>141-199 mg/dl</td>
<td>200 mg/dl or more</td>
</tr>
<tr>
<td>2 hours post glucose challenge **</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td><strong>A1C</strong></td>
<td>&lt; 5.7%</td>
<td>5.7–6.4%</td>
<td>≥6.5%</td>
</tr>
</tbody>
</table>

**Impaired Fasting Glucose**

**Impaired Glucose Tolerance**

Healthy People • Healthy Places
What is Fueling the Epidemic of Type 2 Diabetes?

- Approximately 80%-90% of people with type 2 diabetes are overweight or obese.
- In the United States, approximately 69% of adults are considered overweight or obese.

**Obesity** is the primary risk factor for developing **Type 2** diabetes.
The Burden of Diabetes in the U.S.

26 million with Diabetes (~8%)

79 million with Prediabetes
(35% of adults over age 20)

Boyle et al. 2010 Population Health Metrics 8:29
CDC National Diabetes Fact Sheet 2011
CDC. Awareness of Prediabetes. MMWR 62(11);209-212

Healthy People · Healthy Places
The Diabetes Belt


Healthy People · Healthy Places
The Burden of Diabetes in WV

240,626 with diabetes (12%)

465,900 with prediabetes (96,377 adults indicate having been told)

Economic Impact of Diabetes

• Annual cost of diabetes in US is an estimated $245 billion (2012)
  • Direct and indirect medical costs,
  • disability,
  • lost work,
  • and premature death
• Care for people with diagnosed diabetes accounts for more than 1 in 5 health care dollars in the U.S
• Annual 2009 Cost of Care
  • General Population, No Diabetes - $4,400
  • All Persons with Diabetes (average) - $11,700
    • Persons with Diabetes only - $7,800
    • Persons with Diabetes and Complications - $20,700


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Risk Increases with Age


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Other Risk Factors

• Family history
• History of GDM
• Prediabetes
• Being overweight/obese
• Low levels of physical activity
• Adults with hypertension and other cardiovascular risk factors
Type 2 Diabetes is Largely Preventable

DIABETES PREVENTION RESEARCH
Major Diabetes Prevention Studies

• Finland, China, U.S., India and Japan
  – All randomized controlled trials

• Long-term outcomes with lifestyle intervention:
  – Finnish Diabetes Prevention Study: 43% reduction 3 years post
  – Da Qing Study: 43% reduction 14 years post
Diabetes Prevention Program Research Study

- Large RCT
- Conducted over 3 years
- Led by the National Institutes of Health
- 27 clinical centers
- Over 3200 participants
  - overweight
  - prediabetes
- 45% from minority groups
Diabetes Prevention Research Trial

158,777 screened

OGTT

3819 randomized

Lifestyle (1079)
Metformin (1073)
Placebo (1082)
Thiazolidinedione (585)

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Results Were Striking

- **Lifestyle (1079)**
  - 5% weight reduction
  - 58% risk reduction

- **Metformin (1073)**
  - 3% weight reduction
  - 31% risk reduction

- **Placebo (1082)**
  - Diabetes Rate 11%/year

- **Thiazolidinedione (585)**
  - D/C
  - 24% risk reduction


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### Diabetes Prevention Program Outcomes Study

Original DPP: Type 2 diabetes risk reduction at 10 yrs

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Original DPP</th>
<th>Follow-Up DPP after 10 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lifestyle Intervention vs. Placebo</td>
<td>58%</td>
<td>34%</td>
</tr>
<tr>
<td>Metformin vs. Placebo</td>
<td>31%</td>
<td>18%</td>
</tr>
</tbody>
</table>

The Diabetes Prevention Program in Practice

TRANSLATING THE RESEARCH
Translating the DPP to Groups in Community Settings

• Similar levels of weight-loss have been obtained in community based programs that deliver curriculum in a group setting:
  - Deploy Research Study
  - Montana Diabetes Prevention Program
  - I CAN Prevent Diabetes Sites in Minnesota
  - YMCA-led classes with DPCA

Lancet, 2009 374:1677-1686
Diabetes Educator, 2009 35:209-223
On the Cutting Edge 2013 33(4):
HELP PD Results

• Largest translation of the DPP
• Demonstrated ROI of $2,227 over two years vs. the cost of usual care
• Reduced costs associated with:
  – Hospitalizations
  – ER Visits
  – Outpatient procedures
  – Prescriptions

The National DPP

• Authorized by the ACA
• CDC-Recognition Program
• Organizations who show capacity
• May be:
  – Non-profits and CBOs
  – Corporations & businesses (worksites)
  – Faith-based organizations
  – Health care facilities
  – Fitness & wellness centers
  – Educational institutions

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Curriculum and Structure

• 22 session intensive lifestyle change program

• Delivered over 10-12 months

• Community and organizational levels

• Group setting (10-16 participants)

• Facilitated by trained lifestyle coach(es)

• Based on principles of healthy eating, physical activity and behavior modification
The Diabetes Prevention Program in West Virginia

- STATE-LEVEL EFFORTS
- BPH EMPLOYEE PROGRAM
Trained Coaches

• Division of HP&CD trained 65 coaches 12/12
• WV has 72 trained coaches in total (15-20 active)
• Survey 9/13: 65% response rate
• 76% are permitted to facilitate as part of their current job
• 45% would consider contract/consultant work
• Primary barriers are lack of:
  – Time
  – Referrals
  – Funding for materials
  – Funding for marketing
Raising Awareness Among Health Care Providers

- Presentations at conferences, meetings and individual health centers
- Presentation to FQHC CEO’s (WVPCA)
- WVPCA Clinical Quality Leadership Team
- Webinar for primary care center staff (WVPCA)
- Utilization of EMR data to identify at-risk patients (WVU OHSR)
  - published article in *Perspectives in Health Information Management* (Fall, 2013).

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Developing and Implementing Systems of Referral

• Established service agreement with 3 pilot partnerships
• Provided assistance with developing processes that are integrated into their current delivery system
• Encouraged the development of feedback mechanisms to communicate with referring provider

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Increasing Referrals

• Some health centers referring:
  • Ritchie Regional Health Center
  • New River Health Association
  • Belington Clinic
  • Ebenezer Medical Outreach

• Some are recognized to offer the program:
  • Shenandoah Valley Medical System
  • Cabin Creek Health Systems
### PCMH (2011) and Meaningful Use 2

<table>
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<th>Criteria for PCMH and Meaningful Use</th>
<th>National DPP</th>
</tr>
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<tbody>
<tr>
<td>Document Self-management abilities for patients/families</td>
<td>✓</td>
</tr>
<tr>
<td>Use EMR to identify patient-specific education resources and provide to more than 10% of patients</td>
<td>✓</td>
</tr>
<tr>
<td>Provide self-management tools (for patient to record self-care results) to patients/families</td>
<td>✓</td>
</tr>
<tr>
<td>Develop and document self-management goals in collaboration with patients</td>
<td>✓</td>
</tr>
<tr>
<td>Provide Educational Resources or assist in Self-Management</td>
<td>✓</td>
</tr>
<tr>
<td>Counsel patients/families to adopt healthy behaviors</td>
<td>✓</td>
</tr>
<tr>
<td>Maintain current resource list on five topics or key community services areas of importance to practice’s population</td>
<td>✓</td>
</tr>
<tr>
<td>Offer opportunities for health education and peer support</td>
<td>✓</td>
</tr>
<tr>
<td>Track referrals provided to patients</td>
<td>✓</td>
</tr>
</tbody>
</table>
Partner with Agencies to Recommend that Program be Offered as a Covered Health Benefit for Public Employees

- Met with Office of the Insurance Commissioner
- Met with a variety of insurers
- MOU with PEIA and WVU Extension Service
- Pilot program with state employees
  - Approval of BPH Commissioner
Media Campaign

• Partnership with Change the Future WV
• Launching in early December
• Running until March
• Radio, TV, Print, Outdoor Boards, On-line
• Targeted toward:
  – 45+, overweight, sedentary
  – women with history of GDM
CDC-Recognized Organizations in WV

- Belington Wellness Center
- Berkeley County Health Department
- Brooke County Health Department
- Cabell-Huntington Health Department
- Cabin Creek Health Systems
- Chertow Diabetes Center at Marshall University
- Diabetes Learning Center of Mon General Hospital
- Hancock County Health Department
- Hancock County Senior Services
- Kanawha-Charleston Health Department
- Mid-Ohio Valley Health Department
- Potomac Valley Hospital
- Shenandoah Valley Medical System, Inc.
- Viridian Health Management
- West Virginia Bureau of Senior Services
- West Virginia University Extension Service
Diabetes Prevention Programs in West Virginia
(40 as of 10/30/13)
Diabetes Prevention Program Locations

• Barbour
  – Belington: Belington Wellness Center

• Berkeley
  – Martinsburg: Berkeley County Health Department

• Cabell
  – Huntington: HIMG
  – Huntington: Ebenezer Medical Outreach

• Calhoun
  – Minnora: West Fork Senior Center Nutrition Site

• Fayette
  – Fayetteville: United Methodist Church

• Greenbrier
  – Rainelle: Rainelle Medical Center
  – Lewisburg: Greenbrier County Health Dept.

• Hancock
  – New Cumberland: Hancock County Senior Services (2 programs)

• Harrison
  – Clarksburg: United Hospital Center

• Jackson
  – Ripley: Hardman’s Hardware

• Kanawha
  – Clendenin: Clendenin Health Center
  – Charleston: Kanawha Valley Senior Services
  – Elkview: Elkview Community Center
  – South Charleston: SC Recreation Center
  – Charleston Arbors

• Monongalia
  – Morgantown: Mon General Hospital (3 programs)

• Pleasants
  – St. Mary’s: Pleasants County Senior Center (2 programs)

• Ritchie
  – Harrisville: Ritchie Regional Health Center

• Roane
  – Amma: Amma Senior Center
  – Spencer: Westbrook Health Services
  – Spencer: Hardman’s Hardware
  – Spencer: Curves

• Wirt
  – Elizabeth: Elizabeth United Methodist Church
  – Elizabeth: Wirt County WIC Office
  – Elizabeth: WVU Extension Service Office

• Wood
  – Mineral Wells – Coldwater Creek (4 programs)
  – Parkersburg: Mid-Ohio Valley Health Department
  – Parkersburg: YMCA
  – Parkersburg: Westbrook Health Services
  – Parkersburg: Library
  – Vienna: Pleasantview Towers
  – Vienna: Elder Beerman
BPH Employee Program

METHODS AND RESULTS
Methods

- 16 month timeframe
- Permission from BPH Commissioner
- 2-day training (University of Pittsburgh)
- Information sessions
- Risk Screening
- Enrollment
- Curriculum delivery (September, 2012-May, 2013)
Methods

• 22 sessions
• Didactic and interactive learning  
  – Nutrition, physical activity, behavior modification
• Make-up sessions
• Data – body weight, physical activity
• Weekly records (food intake and physical activity)
• Participant survey
Results

• 92% completion
• Mean attendance: 18.4 sessions
• 92% lost weight
• Mean weight loss = 5.6%
• 54% (7) achieved at least 5% weight loss
• 39% (5) exceeded 7% weight loss goal
• 23% (3) achieved physical activity goal
• Attendance = results
Survey Results

- Participation during the workday
- Increased self-reported productivity, morale and satisfaction with employer
- Increased ability to live a healthy lifestyle
- 100% positive recommendation
- Health insurance reimbursement/premium reduction
Discussion

• Identification, recruitment and retention is possible

• Need additional support/resources for physical activity

• Bringing the program to the worksite and allowing employees time to participate during the work day is vital
Recommendations

- Buy-in and support from leadership
- Offer the program at no cost (financial or time)
- Work with a TPA
- Systematic identification of those at risk
  - Prospective (screening)
  - Retrospective (data mining)
- Comprehensive marketing campaign/strategy
Conclusion

Implementation of diabetes prevention programs in state government and other worksites may result in significant reductions in Type 2 diabetes and considerable cost-savings to employers, insurers and the health care system.
In Summary

• Public health efforts must turn to primary prevention focusing on those at highest risk
• West Virginia is well-positioned to scale The National Diabetes Prevention Program
• Providers should identify those at-risk and refer to available programs
• Buy-in and support from top leadership to bring the program to state employees
• Buy-in and support from employers and insurers to ensure sustainability

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Resources

- CDC Prediabetes Risk Screening Tool:
  - [http://www.wvdiabetes.org/Portals/12/PrediabetesScreeningTool.pdf](http://www.wvdiabetes.org/Portals/12/PrediabetesScreeningTool.pdf)

- CDC’s Diabetes Prevention Website

- National Diabetes Education Program (NDEP)

- Medicare Part B Coverage of Diabetes Screening

- Centers for Disease Control

- American Diabetes Association
  - [http://professional.diabetes.org/CPR_search.aspx](http://professional.diabetes.org/CPR_search.aspx)
Contact Information

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