Innovative Approaches to Care in a Changing Environment:
Insights from the National Diabetes Education Program

Sunday, June 15, 2014
Introductions

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Chair, NDEP Executive Committee
Chief, Division of Endocrinology
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Disclosures

I have been an investigator and/or consultant without any direct financial benefit under contracts between my employer (the University of North Carolina) and the following companies: Amylin Pharmaceuticals, Inc.; Andromeda; Astellas; AstraZeneca; Bayhill Therapeutics, Inc.; Boehringer Ingelheim; Bristol-Myers Squibb Company; Catabasis; Cebix, Inc.; CureDM; Diartis Pharmaceuticals; Elcelyx Therapeutics, Inc.; Eli Lilly and Company; Exsulin; Genentech; GI Dynamics; GlaxoSmithKline; Halozyme Therapeutics; F. Hoffmann-La Roche, Ltd.; Intarcia Therapeutics; Johnson & Johnson; Lexicon; LipoScience; Macrogenics; Medtronic MiniMed; Merck; Metabolic Solutions Development Co.; Metabolon, Inc.; Metavention; Novan; Novo Nordisk A/S; Novella Clinical; Orexigen Therapeutics, Inc.; Osiris Therapeutics, Inc.; Pfizer, Inc.; PhaseBio Pharmaceuticals Inc; Quest Diagnostics; Rhythm Pharmaceuticals; Sanofi; Spherix, Inc.; Takeda; Tolerx; Transpharma Medical Ltd.; TransTech Pharma; Veritas; Verva.

I am a consultant to PhaseBio Pharmaceuticals, Inc. and have received payments, reimbursement for travel and stock options for that effort.
• **Implementing Behavior Change Strategies in the Clinic and Communities**
  Marti Funnell, MS, RN, CDE

• **A Changing Healthcare Environment and Practice Transformation**
  Kevin Peterson, MD, MPH

• **Joining Forces: How Partnerships Can Make a Difference**
  Linda Siminerio, RN, PhD, CDE
  Chair-elect, NDEP

• **NIDDK and CDC Activities: Implications for NDEP**
  Judy Fradkin, MD
  Ann Albright, PhD, RD
National Diabetes Education Program

• U.S. Department of Health and Human Services program jointly sponsored by:
  – National Institutes of Health
  – Centers for Disease Control and Prevention
  – and over 200 public and private partners

• NDEP’s goal is to reduce the burden of diabetes and prediabetes by facilitating the adoption of proven approaches to prevent or delay the onset of diabetes and its complications.
Conclusions

Although there were improvements in risk-factor control and adherence to preventive practices from 1999 to 2010, tobacco use remained high, and almost half of U.S. adults with diabetes did not meet the recommended goals for diabetes care.
NDEP National Diabetes Survey (NNDS): History and Purpose

• First conducted the NNDS in 2006 to meet the need for more specific and timely diabetes-related information

• NNDS later conducted in 2008 and 2011
  – Age range was widened based on research that showed rate of type 2 diabetes was increasing at younger ages

• Next survey planned for 2014
  – Focus on self-management behaviors, self-care, perceived risk
NNDS: Knowledge of Diabetes (Ages 45+)

* Statistically significant difference for years 2008–2011 and 2006–2011
† Statistically significant differences for years 2006–2011
NNDS: Health Professionals

Majority report following health professional’s advice to lower risk for disease

• Health professionals still an important source of advice on lowering risk for disease, including diabetes.
• Advice that most followed were to reduce fat intake, take aspirin, lose weight.
• Following their health professional’s advice did not necessarily lead to significant changes in their lifestyle: physical activity.
NDEP Activities: Core Principles

- **Target Audience:** Current & new partners and intermediaries
- **Address Health Disparities:** Audiences with higher burden of diabetes & risk for diabetes
- **Service Leadership:** Lead by collaborating with partners to meet their organization’s diabetes goals and objectives
- **Catalyst:** Limit role of producing materials & resources
- **Curate:** Solicit, collect, collate, and curate
Goal: NDEP’s goal is to reduce the burden of diabetes and prediabetes by facilitating the adoption of proven approaches to prevent or delay the onset of diabetes and its complications.

Strategy 1: Behavior Change
Share model programs and resources to develop and sustain a healthy lifestyle with a focus on prevention and/or management.

Strategy 2: Clinical Setting
Share tools, resources and programs that help improve effectiveness in diabetes management and prevention interventions.

Strategy 3: Community Setting
Share tools and resources to improve health outcomes for people with diabetes and people at risk.
Implementing Behavior Change Strategies in the Clinic and Communities

Martha Funnell, MS, RN, CDE
Chair, Diabetes HealthSense Task Group
Associate Research Scientist, Department of Medical Education, University of Michigan Medical School
Disclosures

• Advisory Boards: Eli Lilly, Halozyme Therapeutics, Bristol-Myers Squibb/AstraZeneca Diabetes, Hygeia Inc., GlaxoSmith Kline, Johnson & Johnson, Animas/Lifescan, Omada Health; Bayer Diagnostics
What do we know about behavior?
Behavior is not the problem… Behavior is a symptom.
Ecological model of health behavior

Individual

- DAWN2 (n=8,596; 17 countries)
- Diabetes-related distress reported by 44.6%, but only 23.7% reported that their healthcare team asked how diabetes impacted their life.¹
- Other studies show prevalence of 18-35% and an 18 month incidence of 38-48%.²

Individual

- Diabetes-related distress has a significantly higher prevalence and incidence than clinical depression, and is significantly more persistent over time.
- Different “conditions”; over 70% of type 2 adults with high distress are NOT clinically depressed.
- Distress is more consistently linked to diabetes management (diet, exercise) and glycemic control (A1C) than depression.

Diabetes HealthSense

These validated patient survey tools work to assess patient and health care professional attitudes, wishes, and needs in diabetes management, a vital and valuable part of patient-centred quality of care improvement.

http://www.dawnstudy.org/News_and_activities/dialogue_tools.asp
DAWN2 (n=2,057; 17 countries)

DAWN2 found that diabetes impacts the lives of adult family members, resulting in substantial burden and distress.

- Supporting a family member perceived as a significant burden by 35.3%; 61% reported high levels of distress.
- The level of burden and distress among family members is a barrier to their effective involvement.

Focus on Diabetes

To begin, complete the interface overview below.

When you are ready to begin the course, choose 'Lesson 1: What is diabetes?' from the lesson menu.

http://spock.fcs.uga.edu/ext/food/focus/
Diabetes runs in my family.

I manage my diabetes — and I am teaching my family how to prevent it.

If you have type 2 diabetes, your mother, father, brother, sister, and children are at risk. Talk to your family about your diabetes so they can take steps to prevent it now. Order a free booklet, Your GAME PLAN to Prevent Type 2 Diabetes, from the National Diabetes Education Program for your loved ones.

For more information, visit www.YourDiabetesInfo.org
or call 1-888-695-NDEP (63357); TTY: 1-866-569-1162.

NDEP is jointly sponsored by NIH and CDC
with the support of more than 200 partner organizations.

http://ndep.nih.gov/am-i-at-risk/family-history/index.aspx#main
New Beginnings Discussion Guide

• Use in small groups
• People with diabetes
• Family members
• Support coping and behavior change

www.cdc.gov/diabetes/ndep/new-beginnings.htm
Goals of New Beginnings

Help African Americans with diabetes:

• Manage the emotional impact of diabetes
• Build positive, supportive family relationships
• Develop behavioral skills:
  – Goal setting
  – Problem solving
  – Improved self-efficacy
  – Health literacy
What’s New & Improved?

• Shorter and more flexible
• New stories and story formats
• More focused on behavioral outcomes
• Activities address multiple learning styles
• New implementation support resources
  – Planning and evaluation tools
  – Training podcasts (CE available)
Evaluation

• Promotion will start in April
• Evaluation will assess reach, satisfaction, and use
  – Web metrics
  – Survey of diabetes and other educators
• For more information: Alexis Williams at awilliams15@cdc.gov.
Relationship: Health Care Professional

- DAWN2 (n=4,785; 17 countries)
- Between 61.4 and 92.9% of healthcare professionals felt that people with diabetes needed to improve various self-management activities.
- Healthcare professionals also noted
  - Need to improve healthcare organization
  - Address emotional problems
  - Improve self-management among people with diabetes

Patient Engagement

- 8 in 10 people want their health care provider to listen to them, but just 6 in 10 say it actually happens.
- Less than half of people say their provider asks about their goals and concerns for their health.
- 9 in 10 people want their providers to work together as a team, but just 4 in 10 say it actually happens.

Patient Engagement

“Most people with diabetes are not actively engaged by their healthcare professionals to take control of their condition; education and psychosocial care are often unavailable.”

– 48.8% had received formal diabetes education; 81.1% found it helpful

For Health Care Professionals:

- Ensure that the patient receives adequate self-management education and support.
- Set collaborative goals based on the patient’s personal goals, culture, values and environment.
- Review lab and other data at each visit.
- Share the decision-making and be open-minded to the patient’s choices.
- Revisit and revise goals at each visit.
- Encourage participation in community programs.
- Recognize that the behaviors involved in managing and preventing diabetes are dynamic and multidimensional.

Set goals

• Collaborate with patient in thinking creatively about how to achieve those goals.¹
• Collaborate with patient to create a specific plan to change behaviors and achieve goals.²
• Create I-SMART behavioral experiments.³

¹ Bodenheimer, California HealthCare Foundation, 2005.
www.YourDiabetesInfo.org/HealthSense
Community

Road to Health Toolkit

• A toolkit on primary prevention of type 2 diabetes designed for community health workers/promotores

www.cdc.gov/diabetes/ndep/road-to-health.htm
National Diabetes Prevention Program

- CDC authorized by Congress
- Consortium
- Build national infrastructure
- Local delivery of evidence-based lifestyle change program
- Based on NIH-led DPP research study

www.cdc.gov/diabetes/prevention
Engaging Healthcare Providers to Test and Refer

- Credible and detailed information
- From trusted source
- Referral process is easy and quick
- Low/no cost programs convenient to patients
National Diabetes Prevention Program Educational Resources

- Communication tools for healthcare providers
- Algorithms for testing and referring
- Referral form
- Communication resources to give patients

www.CDC.gov/diabetes/prevention/
Submit a Resource

NDEP seeks to identify research articles, tools and programs that help people with diabetes and those who care for them—including family members and support persons, health care professionals, teachers and community health workers—in self-management efforts that contribute to improved health outcomes.

Resources included in Diabetes HealthSense must clearly address how to implement a change in behavior, be accessible to the public, and contain limited or no advertising of commercial products.

If you know of a resource that might support this initiative, please complete the submission form. Hardcopies of resources can be mailed to:

NDEP Diabetes HealthSense Submissions
c/o Hager Sharp
1030 15th Street, NW, Suite 600E
Washington, DC 20005
A Changing Healthcare Environment and Practice Transformation

Kevin Peterson, MD, MPH
Professor, Family Medicine and Community Health
Director, Center of Excellence in Primary Care
University of Minnesota
Disclosures

• I have provided advice to Janssen Scientific and Boehringer-Ingelheim Pharmaceuticals and have received payment and reimbursement for travel.
• I have developed educational curriculum for The Endocrine Society and the Annenberg Center for Health Sciences and have received payment and reimbursement for travel.
2008 World Health Organization Report

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<th>Country</th>
<th>Overall</th>
<th>DALE* Rank</th>
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<td>4</td>
</tr>
<tr>
<td>Japan</td>
<td>10</td>
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<tr>
<td>UK**</td>
<td>18</td>
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<td>Canada</td>
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<td>35</td>
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<tr>
<td>US</td>
<td>37</td>
<td>72</td>
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</tbody>
</table>

* Disability Adjusted Life Expectancy
** Countries where diabetes is no longer the leading cause of blindness in adults

Payment Reform Imperative

- Improve Population Health
- Enhance Patient Experience
- Reduce Cost
Opportunities for saving

70% of people

30% of people

Cost

80%

20%

Preventive Services
Vaccines, healthy lifestyle, blood pressure management

Ambulatory Care
Physician visits

Emergency Room Care
Diagnostic imaging, testing, ambulance transportation

Chronic Disease
Diabetes, congestive heart failure, pneumonia

Accident & Catastrophe
Work injury, car accident

Cost: $400/person/year
Saving's Opportunity: $0/person/year

Cost: $800
Saving's Opportunity: $400

Cost: $10,000
Saving's Opportunity: $2,000-$4,000

Healthcare Reform Environment

- Top priorities for increasing effectiveness:
  - Patient-centered care
  - Chronic care management
  - Reduction of racial and ethnic disparities
  - Improved access to primary care
  - Information to support patient and physician decision making
Health Care Delivery 66 years ago (1948)

- At the end of WW2, England formed the National Health Service
- A General Practitioner provided care for 2000-5000 patients per year
- The focus of care was on acute disease

The Transformation of Medical Practice
• Increased complexity
• Changing reimbursement models
• Evolving interprofessional team care
• ACO, patient centered outcomes
• Clinical decision support

• Care coordination
• EHRs and meaningful use
• Genomics, metabolemics
• Biometrics, home monitoring
• Social media, FB, Twitter, etc.
• eHealth, mHealth, pHealth
• Apps, wearable technology
Population Health Management

• An approach to healthcare that aims to improve the health of everyone in a clinical practice… even if a person hasn’t been seen in the office in two years!
• Successful practices know who their patients are, and regularly mine the data to ensure they receive the care they need.
Practice Transformation for Physicians and Health Care Teams

- Engage Leadership and Assess Your Practice
- Provide Evidence-Based Care
- Use Information Systems
- Improve Practice Quality
- Use Clinical Decision Support
- Practice Team-Based Care
- Enhance Patient-Centered Interactions
- Improve Patient Care Coordination

www.YourDiabetesInfo.org/PracticeTransformation
As the leader of an interprofessional team – enhance your leadership skills

- Decide how to decide
  - Facilitative versus hierarchical
  - Promoting a culture of change
  - Translate it into clear goals reflected in policies, procedures, and the business and financial plan
  - Resource allocation
- Identify Needs and Set Priorities
- Aligning Payment Policies with Care
- Provides practice assessment tools and systems for supporting change
Engage Leadership and Assess Your Practice

This section helps users to review the tasks that effective leaders can undertake to ensure the successful transformation of a practice into a patient-centered medical home (PCMH). The process of self-assessment to assess needs and develop priorities stimulates communication, helps to organize and monitor improvements, and identifies needed resources. Eight change concepts are presented that practices need to embrace to effectively transform into a PCMH. Access to resources and program assessment tools is provided. A table presents optimal patient clinical outcomes aligned to best practices by provider and appropriate reimbursement for care.

- Review Leadership Tasks
- Identify Needs and Set Priorities
  - How Self-Assessment Can Help
  - Key Changes to Transform into a PCMH
- Program Assessment Tools
- Develop a Team
- Resources
- References
- Align Payment Policies with Care
- Strategies to achieve clinical outcomes

Practice Team-Based Care
Develop a strong interprofessional team

• Toolkits, videos, and measures for identifying improvement strategies, dividing of roles, and setting goals
  – Benefits of the team in Patient-centered Care
  – What Makes a Team?
  – Team Development
  – Examples of Key Elements of Team Building
  – Resources
  – References
Team-Based Diabetes Care: Role of Diabetes Educator

- Of all diabetes-related primary care visits
- 14.3% include diet or nutrition counseling
- 10% include exercise counseling
- 3.6% include weight reduction counseling
- PCPs typically provide advice on risk reduction rather than training in diabetes self-management
- Arrange for accessible diabetes self-management education and medical nutrition therapy

## Team building – clearly defined roles

<table>
<thead>
<tr>
<th>Level</th>
<th>Staff</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MA/Lab Technician</td>
<td>Download meters, treat hypoglycemia, lab tests</td>
</tr>
<tr>
<td>2</td>
<td>LPN</td>
<td>+ Height/weight/meter training, injection training</td>
</tr>
<tr>
<td>3</td>
<td>RN</td>
<td>+ Work-ups, 1:1 education</td>
</tr>
<tr>
<td>4</td>
<td>CDE</td>
<td>+ Insulin adjustments per protocol-delegation/teach class</td>
</tr>
<tr>
<td>5</td>
<td>NP, CNS, PA, BC-ADM, PharmD</td>
<td>+ Sign prescriptions/order, labs, referrals, coordinates education/clinic/research</td>
</tr>
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Health Literacy

The ability to obtain, process, and understand basic health information and services needed to make appropriate health decisions.

Nearly 9 out of 10 adults have difficulty using everyday health information that is routinely available.

Major causes include:
- Communication skills of lay persons and professionals
- Lay and professional knowledge of health topics
- Culture
- Demands of the healthcare and public health systems
- Demands of the situation/context

Patient Care Coordination
Supporting the health of everyone in the practice

• Referral and Transitions
  – Care coordination toolkit
• Improving Communications
  – Address Health Literacy and Numeracy Issues
• Developing community partnerships
  – Nine steps
Evidence-Based Care is Quality Care

- Trusted scientific broker
- Performance based reimbursement
- Quality measures reflect existing EBM guidelines
  - American Academy of Family Physicians
  - American Association of Clinical Endocrinologists
  - American College of Physicians
  - American Diabetes Association
  - American Geriatrics Society
  - American Heart Association
  - Indian Health Service
  - The Endocrine Society
  - U.S. Preventive Services Task Force
  - Veterans Affairs/Department of Defense
- Systematic reviews, journals
  - Guidelines change when evidence changes

Clinical Decision Support

- Diabetes prevention
- CV disease risk management
- Diabetes management
- Major clinical research

1. Clinical information systems
2. Community resources
3. Lesson plans, fact sheets, education
4. Practice redesign
5. Self-management tools
Improve Practice Quality

- **Transform Practices to Improve Care**
  - Ensure Commitment
  - Establish an Improvement Team
  - Identify Gaps and Set Goals
  - Use the Plan-Do-Study-Act (PDSA) Cycle
  - Examples, Resources, and References

- **Use Evaluation Strategies**
  - Principles of Using Data
  - Differences Between Quality Improvement and Clinical Research

- **Incorporate Diabetes Programs and Accreditation**
  - Diabetes Recognition Programs
  - Education and Nutrition Services
  - Diabetes Certification, Accreditation, Recertification, Competencies, and Continuing Education
Multiple resources for problem solving

• Most practices do not meet consistently, and when they do, those meetings rarely involve the entire practice. Trial NCT00414986 (Epic)
  – Plan-Do-Study-Act (PDSA) is an established quality improvement methodology for implementing effective solutions to a specific problems.
  – Reflective Adaptive Practice (RAP) is a facilitated process promoting regular practice meetings with representation to involve the entire practice in identifying and solving problems.

Information Systems

- Every practice needs a diabetes registry
- Population Health management
- What a Registry Can Do
  - Evaluating Registries
  - EHRs and Meaningful Use
  - Networked and Interactive Systems
  - Resources
- Medicare Incentive Payment Programs for Providers
  - Physician Quality Reporting System (PQRS) System
  - Medicare’s Physician Feedback/Value-Based Modifier Program
Patient-Centered Interactions

Information Technology

EBM Guideline Groups

Medical Team*

Clinical Quality Manager

Care Coordinator

Patient Advisory Groups

Medical Team: Physician, Nurse, Resident, Student, Medical Assistant

Community/Family

Insurance Company (P4P)

Quality Organizations

Pharmacy

Senior Leadership

Patient Educators
Enhance Patient-Centered Interactions

- Dimensions of Patient-Centered Care

- Develop a Patient-Centered Medical Home Key Changes to Transform
  - New Payment Approaches

- Provide Patient Education and Support
  - Stages-of-Change
  - Self-efficacy and Patient Education
  - Self-Management Strategies

- Address Health Literacy and Numeracy
  - Using Stories in Healthcare

- Building Cultural Competency
Establish a Routine

1. Align Leadership
2. Develop Communication Plan
3. Develop Common Knowledge Base
   - Simple insulin regimens
   - Address cost
   - Print instructions
   - Nurse involvement
   - Chart review
4. Implement Process Change
5. Check Back

Coach for Improvement

Quick Start Insulin Program

1. Basal insulin kept on site → 2. Training on site → 3. Patient provided with written instructions → 4. Repeat visits increase the tempo of change

Glargine 10 unit start • Increase by 2 units every other day if fasting glucose above 130 mg/dL on both days

Lessons from the Pioneer ACOs

• Your culture is everything you promote and everything you tolerate
• Leadership is critical—financial rewards are not necessary, change can be driven by strong moral and social incentives
Diabetes Education Resources

• National Diabetes Education Program
  – www.YourDiabetesInfo.org

• NDEP Practice Transformation for Physicians and Health Care Teams
  – www.YourDiabetesInfo.org/PracticeTransformation

• ADA online “Find a Diabetes Education Program”

• AADE “Find an Educator”
  – www.diabeteseducator.org
  – Free online course for staff on Fundamentals of Diabetes Care
  – Find an educator
Joining Forces: Working with Our Partners

Linda Siminerio, RN, PhD, CDE
Chair-elect, Executive Committee
National Diabetes Education Program
Disclosures

• Research support: Becton-Dickinson
What Our Partners Want From NDEP:

• Support from NDEP to facilitate and promote:
  – Behavior change
  – Clinical setting models and strategies
  – Community engagement
Can NDEP be all things to all constituents?
focus
Work with our PARTNERS by:

- Engaging PARTNERS to develop resources
- Sharing resources and tools with PARTNERS
- Relying on PARTNERS to implement and evaluate
Engaging experienced PARTNERS in the field

www.YourDiabetesInfo.org/PracticeTransformation
Engaging experienced PARTNERS in the field

www.YourDiabetesInfo.org/HealthSense
Engaging PARTNERS who work with people with diabetes

- **New Beginnings Guide** (African Americans)
- **Living A Balanced Life Toolkit** (American Indians/Alaska Natives)
- Collaboration:
  - Expertise on audience
  - Ensuring relevance
  - Expand reach

www.cdc.gov/diabetes/ndep/new-beginnings.htm
www.cdc.gov/diabetes/ndep/living-a-balanced-life.htm
Engaging health organization

PARTNERS

• Pharmacy, Podiatry, Optometry and Dentistry Partnership Activities (PPOD)
  – “traditional” health care providers and PPOD professionals

• Range of providers collaborated on Guide
  – Access to expertise
  – Access to audiences
  – Consistent messages
  – Better final product

www.cdc.gov/diabetes/ndep/ppod.htm
Sharing with health organizations

PARTNERS

• ADA Partnership Activities
  – Provides organizational expertise and input in the development of (and updates to) NDEP’s *School Guide*
  – Incorporates the *School Guide* as part of its "Safe at School" initiative
  – Cross-promotion

www.diabetes.org/safeatschool
Sharing with national government program PARTNERS

- The National DPP uses NDEP’s *Your GAME PLAN to Prevent Type 2 Diabetes* materials as supplemental resources to support the core lifestyle training curriculum.

*www.cdc.gov/diabetes/prevention*

Sharing ........... with state agencies

CDC-funded State Health Departments

• NDEP provides
  – Science-based, tested materials and tools
  – Training and technical assistance

• State Health Departments provide
  – Promotion and reach
  – Expertise
  – Tailoring to state context and populations
Eureka! An evaluation culture has finally been grown in the lab!

Now if only we could figure out how to grow it in the real world.

Hey look, these guys are forming a subcommittee!
No, wait, they’re just disputing the results.
Assess diabetes educators’ experience and satisfaction with NDEP’s Diabetes HealthSense:

- Input on evaluation plans and instruments
- Access to AADE’s membership
- Recruitment of evaluation sites and participants
- Contributions to final reports and/or evaluation manuscripts
Support for Clinical Trials

- D2d Vitamin D and Type 2 Diabetes Ancillary Study.
- Use of NDEP patient education materials as part of intervention.
- Opportunity to obtain evaluation measures via pre- and post-tests.

www.d2dstudy.org

PARTNER in Clinical Trials

• GRADE Study
• Use of NDEP patient education materials as part of intervention
• Opportunity to obtain evaluation measures via pre- and post-tests.
  – Key information, such the A1C test and diabetes management strategies
  – Self efficacy to engage in healthy behaviors
  – Prior formal diabetes education

https://portal.bsc.gwu.edu/web/grade

We need YOU as our PARTNER

- Stakeholder Groups
- Task Groups
- News & Notes
- NDEP Webinars
- Social Media

http://ndep.nih.gov/partners-community-organization
NIDDK Activities: Implications for NDEP

Judith Fradkin, MD
Member, NDEP Executive Committee
Director, Division of Diabetes, Endocrinology, and Metabolic Diseases
National Institute of Diabetes and Digestive and Kidney Diseases,
National Institutes of Health
Disclosures

• Nothing to disclose
NIDDK Clinical Studies: Diabetes

Normal → Pre-diabetes ↔ Type 2 Diabetes → Complications

Normal → Auto-immunity ↔ Type 1 Diabetes → Complications

Auto-immunity

Diabetes Prevention Program

DPPS

rise

GRADE

TODAY

Look AHEAD

TEDDY

Type 1 Diabetes TrialNet

Type 1 Diabetes

Diabetes Control & Complications Trial

EBIC
Clinical trials network aimed at performing multicenter trials for prevention of and early intervention in type 1 diabetes
Centers for Diabetes Translation Research (P30)

- **Purpose:** enhance the efficiency, productivity, effectiveness and multidisciplinary nature of diabetes translation research.
NIDDK Diabetes Research Dissemination (R34/ R18) Program

• Designed to advance “bedside to practice” research
• Efficacy findings are often not implemented in real world practice and communities
• Supports research to close the gap between research and actual dissemination and implementation
  – Retain effectiveness
  – Potential for scalability and sustainable outside of tightly controlled research settings and populations
• Much of the current portfolio focuses on community based settings and delivery outside of the healthcare setting
Example of Success
NIDDK Funded R34/R18

- Test the DPP lifestyle intervention YMCA delivered in the YMCA
- 2011: Congressional legislation established the CDC-led National Diabetes Prevention Program
- Already provided services to thousands of individuals
NIDDK Diabetes Translational Research Future Directions

• Capitalize on time of dramatic change in healthcare and healthcare infrastructure

• Address gaps in the translation portfolio
  – Focus on healthcare delivery and improving healthcare practice
  – Support research to meaningfully inform diabetes related clinical decision making and health policy
NIDDK Future Directions

• Continued Focus:
  – High risk populations/ reducing health disparities
  – Generalizability and scalability to “real world” context and practice
  – Potential for sustainability outside of research period
  – Cost relative to benefit

• Shift in focus: Healthcare Delivery
  – Evaluation of Natural Experiments in Healthcare
  – Pragmatic Trials in Healthcare
Evaluation of Natural Experiments in Healthcare
PAR-13-365 (R18)

• Escalating rates of diabetes and healthcare costs occur against a time of dynamic change for healthcare in the U.S.
• Intent of changes: improve health outcomes and reduce costs
• Limited evidence about how well these changes in healthcare work to improve diabetes or of their benefit relative to costs
• Research Goals:
  – Support rigorous evaluation of “natural experiments” in healthcare
  – Identify what works for whom in actual clinical practice with diverse populations, and/or patients with multiple co-morbidities
  – Provide data to more rapidly inform clinicians, healthcare systems, employer/purchasers, and policy makers
Evaluation of Natural Experiments in Obesity

- PAR 12-257: Time Sensitive Obesity Policy and Program Evaluation (R01)
  - Trans-NIH initiative released August 2012
  - Partners: NCI, NICHD, NIA, and OBSSR
  - Accelerated review/award process

- Non-time sensitive “companion” FOAs:
  - PA-13-110, Obesity Policy Evaluation Research (R01)
  - PA-13-100, School Nutrition and Physical Activity Policies, Obesogenic Behaviors and Weight Outcomes (R01)
Pragmatic Research in Healthcare

• Solicit pragmatic research designs--evaluate the effectiveness of interventions or therapies in research that maximizes the applicability of the trial’s results to routine care conditions
  – Test novel, practical, and cost efficient healthcare based strategies to improve health outcomes
  – PAR-13-366: (R18)
  – PAR-13-367: (R34)

• Research must:
  – Be integrated into existing healthcare settings
  – Leverage existing resources within these practices
    • Minimal intervention staff/infrastructure expenditures
Type 2 Translation
(R18)

National Diabetes Education Program

A program of the National Institutes of Health and the Centers for Disease Control and Prevention
CDC Activities: Implications for NDEP

Ann Albright, PhD, RD
Member, NDEP Executive Committee
Director, Division of Diabetes Translation
Centers for Disease Control and Prevention
Disclosure

• Disclosed no conflicts of interest
CDC Research and Translation
RESEARCH
Key Elements In Public Health Research for Population-targeted Interventions

• Surveillance of quality and systems of care
• Effectiveness of health systems approaches to improve diabetes care and outcomes
• Natural experiments of the impact of health policies coming from health systems, communities, and public policies
NEXT-D  Natural Experiments in Translation for Diabetes 2010-2015

5 Year Goals and Intended Impact

- Identify, prioritize, (and in some cases, reject) major population-targeted policies to prevent and control diabetes.
- Provide new model for high impact policy research for diabetes prevention and control through rigorous designs applied to natural experiments
- Enhance capacity of research groups, trainees, and collaborators to conduct influential diabetes policy research
Studies

- Impact of employer-mandated switch to high-deductible health plans (Harvard)
- Effectiveness of employer-based detection, outreach, and incentives for primary prevention and post-partum glucose screening (Kaiser)
- Effects of health plan coverage of diabetes prevention programs (Northwestern)
- Use of electronic records with decision support for prevention (St. Luke’s-Roosevelt Hospital, NYC)
- Effects of health plan to reduce out-of-pocket costs and improve outreach to patients (UCLA)
Surveillance of Diabetes in US Children and Adolescents: SEARCH for Diabetes in Youth Study
Overview

- Multi-center observational study
- 2000 to present – 5-year cycles
- Objectives:
  - Assess prevalence, incidence, trends of diabetes in youth <20 years by age, sex, race/ethnicity, type
  - Develop framework for DM classification based on etiology
  - Inform development of sustainable surveillance for diabetes in youth
  - Determine prevalence and incidence of and risk factors for micro- and macro-vascular complications and acute complications
  - Document natural history, clinical course, quality of care and quality of life youth
## Youth Currently Under Surveillance

<table>
<thead>
<tr>
<th>Center</th>
<th>Annual #</th>
</tr>
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<tbody>
<tr>
<td>California</td>
<td>792,188</td>
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<tr>
<td>Colorado</td>
<td>1,405,205</td>
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<tr>
<td>Native American Sites</td>
<td>91,542</td>
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<td>Ohio</td>
<td>558,911</td>
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<tr>
<td>South Carolina</td>
<td>1,182,077</td>
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<tr>
<td>Washington</td>
<td>966,045</td>
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<td><strong>TOTAL</strong></td>
<td><strong>4,904,426</strong></td>
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Prevalence of Diabetes per 1,000 by Type, Age Group and Race/ethnicity, 2009
Future Plans: SEARCH Cohort Study

• Determine burden and clustering of diabetes-associated acute and chronic complications in youth with T1D and T2D

• Explore independent factors and pathways contributing to increased burden and clustering of complications in youth with T2D compared to those with T1D

• Determine independent risk factors/pathways associated with greater burden and clustering of complications, independent of other known risk factors
TRANSLATION
Translation and Implementation of Evidence-Based Strategies

• CDC funds state health departments, American Indian Tribes, and national organizations to:
  – Implement evidence-based strategies proven to be effective for people with and at risk for diabetes
  – Report measurable outcomes to demonstrate impact
  – Address diabetes disparities
Focus of Public Health Interventions - 4 Domains

1. Epidemiology, surveillance and evaluation to inform and monitor
2. Environmental approaches that promote health
3. Health system interventions to improve access, delivery, and use of preventive services
4. Community-clinical linkages for prevention and management of chronic diseases
National Diabetes Prevention Program Updates

National Diabetes Prevention Program

COMPONENTS

Training: Increase Workforce
Train the workforce that can implement the program cost effectively.

Recognition Program: Assure Quality
Implement a recognition program that will:
- Assure quality.
- Lead to reimbursement.
- Allow CDC to develop a program registry.

Intervention Sites: Deliver Program
Develop intervention sites that will build infrastructure and provide the program.

Health Marketing: Support Program Uptake
Increase referrals to and use of the prevention program.

www.cdc.gov/diabetes/prevention
Recently Released FOAs from CDC

• Advance the nation’s chronic disease prevention and health promotion efforts
  – Address one or more leading risk factors for major causes of death and disability in the US: tobacco use, poor nutrition, and physical inactivity
  – Some address key health system improvements and community supports to help Americans prevent and manage their chronic conditions

• See www.cdc.gov/chronicdisease/features/funding-opportunity-announcements.htm
We Need You!

• Share resources and materials
• Identify gaps in resources available
• Identify partners interested in engaging the diabetes community, those at risk for diabetes and their families

Questions?

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