Webinar Logistics

• All lines are muted

• Two ways to ask questions during Q&A period:
  1. Type your question into the question section and we will read your question aloud.
  2. Click the “raise hand” icon and we will call your name and unmute your line allowing you to ask your question.
Presenters

Linda M. Siminerio, R.N., Ph.D., C.D.E.
Executive Director, University of Pittsburgh Diabetes Institute
Professor of Medicine, University of Pittsburgh

Joanne Gallivan, M.S., R.D.
Director, National Diabetes Education Program
National Institutes of Health
The Changing Role of the Diabetes Educator: Diabetes Education and U.S. Health Care

Linda M. Siminerio, R.N., Ph.D., C.D.E.
Executive Director
University of Pittsburgh Diabetes Institute
Professor of Medicine
University of Pittsburgh
Objectives

- Describe the evolution of diabetes education.
- Discuss the current state of health care and diabetes education.
- Summarize the future direction and opportunities for diabetes educators.
- Discuss questions from the participants and provide answers.
My First Diabetes Patient
6-Drop Method

1. Testing:
   a. Fill test tube with 5 drops of urine.
   b. Rinse test tube.

2. Drop one tablet into test tube and watch while complete boiling takes place. Do not shake test tube during boiling. Ignore sediment that may form in the bottom of the test tube. Ignore changes after the second waiting period.
3. At the end of this 15-second waiting period, shake test tube gently to mix contents. Compare color of liquid to Color Chart which appears on the block that most closely matches the color of the liquid.

<table>
<thead>
<tr>
<th>1/4%</th>
<th>1/2%</th>
<th>3/4%</th>
<th>1%</th>
<th>2% or more</th>
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</table>
EXCHANGE LISTS for Meal Planning
The “Not-So-Good Old Days”
SMBG Consensus Report Coalition for Clinical Research, 2008

- Research on the performance of SMBG in T2DM is needed
- Protocols assessing SMBG performance in T2DM must provide BG goals and how to respond to BG data
- Treatment algorithms in T2DM may include a dietary, exercise, and/or medication intervention

Education Revolution

• Education may not be an efficacious therapeutic intervention in most adults
• Cognitive (knowledge) scores increased in the education group – not A1C
• Study results demonstrate that effects of education are of limited value if they do not lead to permanent changes in attitudes and motivation

Health Care Outcomes Continuum

Immediate Outcomes

Learning Knowledge Skill Acquisition

Intermediate Outcomes

Behavior Change

Post-Intermediate Outcomes

Improved Clinical Indicators

Long Term Outcomes
Diabetes Control and Complications Trial


Affordable Care Act
The Forces on Diabetes Education

- Prevention
- Preventing hospital readmissions
- Processes to improve primary care
- Need for health disciplines to practice at their highest level
- Specialist services reduced
- Technological approaches a recurring theme
Diabetes educators are urged to:

1. Gain insight about health care trends to thrive in the workplace of the future.
2. Promote the evidence concerning the benefits of diabetes education.
3. Work to increase physician referrals.
4. Acquire needed competencies for the workplace of the future.

Self-Management Education: The Evidence

- Improves A1C by 0.76%\(^1\)
- Is effective and cost-saving\(^2\)
- Team-based care best predictor of improved glycemia\(^3\)
- Access to a nurse associated with improved outcomes\(^4\)
- Technological approaches are showing promise\(^5, 6\)


Educator challenges: Lessons from the “almost extinct” American Bald Eagle

- Challenges
  - Numbers of patients increasing
  - Hospital-based programs are closing
  - Numbers of those receiving education are small

Re-Inventing Our Educators
Educator Solutions: Lessons from the American Bald Eagle

- Focus on primary care
- Consider educator as central resource for hospital staff, business and insurers
- Empower educator to support therapeutic management (approved physician protocols)
- Educator role with technology – e.g. telemedicine
Education Services in UPMC Database

• Those who received education:
• All patients studied $n=12,745$ (100%)
  • DSME only $n=1,512$ (12%)
  • MNT only $n=0$ (0%)
  • DSME and MNT $n=672$ (5%)
  • Neither DSME or MNT $n=10,561$ (83%)

Risk Factors, Co-Morbid Conditions, Participation and Physician Referrals to a Rural DSME Program

Diabetes Patients
N=265

Patients who never received DSME (65%)
(n=162)

Never received a referral (76%)
(n=123)

Those who received referral
(n=72)
83% attended DSME

Proportion of Diabetes Patient Behavioral Risk Factors (n=162)

<table>
<thead>
<tr>
<th>Risk Factors</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>Current smoker</td>
<td>17%</td>
</tr>
<tr>
<td>Hypertension</td>
<td>85%</td>
</tr>
<tr>
<td>Hyper-lipidemia</td>
<td>78%</td>
</tr>
<tr>
<td>BMI ≥ 30 kg/m²</td>
<td>65%</td>
</tr>
<tr>
<td>&gt; 2 risk factors</td>
<td>92%</td>
</tr>
</tbody>
</table>

Ruppert, K., Uhler, A., Siminerio, L. Examining Risk Factors, Co-Morbid Conditions, Participation and Physician Referrals to a Rural DSME Program, Diabetes Educator.
Educator Opportunities
Who Can Provide DSMS in Primary Care?

- **OBJECTIVE:** Compare DSMS approaches and determine who can be most effective in helping patients maintain/improve clinical outcomes, self-care behaviors, distress, and satisfaction following DSME delivered in primary care.

- **RESULTS:**
  - Significant improvement in A1C, empowerment, aspects of self-care, and distress following DSME at 6 weeks.
  - Educator DSMS group best sustained improved A1C while those in the other DSMS groups maintained glycemic improvements but began to show trends toward worsening.
  - Participants maintained improved glycemia, lipid, weight, and self-care behaviors and reductions in distress throughout the delivery of DSMS interventions regardless of DSMS supporter.

- **CONCLUSIONS:**
  - Findings reaffirm the critical role of educators but suggest that others may serve as DSMS supporters. Results suggest that DSME delivered in primary care is effective and multiple DSMS agents are reasonable.

Comparative Effectiveness of Peer Leaders and Community Health Workers in DSMS

**OBJECTIVE:** Compare peer leader (PL) vs a community health worker (CHW) telephone outreach intervention in sustaining improvements in HbA1c over 12 months after a 6-month DSME program.

**RESULTS:**
- PL group achieved a reduction in mean HbA1c (8.2–7.5%, P < 0.0001) that was maintained at 18 months.
- CHW group also showed a reduction in HbA1c (7.8 vs. 7.3%, P = 0.0004) post-6 month DSME;
- Only the PL group maintained improvements achieved in blood pressure at 18 months. At the 18-month follow-up, both groups maintained improvements in waist circumference, diabetes support, and diabetes distress, with no significant differences between groups.

**CONCLUSIONS:**
- Both low-cost maintenance programs led by either a PL or a CHW maintained improvements in key patient-reported diabetes outcomes, but the PL intervention may have additional benefit in sustaining clinical improvements beyond 12 months.

2014 Statistics Total US CDEs 18,401

- Pennsylvania 12.7 mil people

- 8% with diabetes = 1mil people

- 796 PA CDEs = 1,323 patients per CDE

http://www.ncbde.org/documents/statecount0112.pdf
## Benefits of Diabetes Education in Primary Care

<table>
<thead>
<tr>
<th>Diabetes Education (0-6 weeks)</th>
<th>Community Medicine</th>
<th>FQHC</th>
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<tbody>
<tr>
<td></td>
<td>Median Change [p-value]</td>
<td>Median Change [p-value]</td>
</tr>
<tr>
<td>HbA1c (%)</td>
<td>0.6 [.0001]*</td>
<td>1.1 [.0001]*</td>
</tr>
<tr>
<td>SBP (mm/Hg)</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>DBP (mm/Hg)</td>
<td>2.5 [.005]*</td>
<td>3.6 [.02]*</td>
</tr>
<tr>
<td>HDL (mg/dL)</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>LDL (mg/dL)</td>
<td>8.5 [.04]*</td>
<td>11 [.01]*</td>
</tr>
<tr>
<td>tChol (mg/dL)</td>
<td>8.7 [.05]*</td>
<td>13.3 [.009]*</td>
</tr>
</tbody>
</table>

SBP=Systolic Blood Pressure; DBP=Diastolic Blood Pressure; HDL=High-Density Lipoprotein; LDL=Low-Density Lipoprotein; tChol=Total Cholesterol; NS=No Significant Change * p< .05

Elements of Glucose-to-Goal:

- Strengthen DE relationships with primary care practices
  - Increase utilization of DEs across the UPMC Health System.
  - DEs become a more visible member of the medical home.
- Use EMR resources to proactively identify diabetes patients
  - Use data to identify patients at high risk.
  - Adopt a more aggressive approach by reaching out to patients.
- Empower DEs to take the lead (with physician oversight) in helping patients manage their diabetes
  - Relieve provider workloads.
  - Realize a team approach by coordinating patient care with PCMH care managers, PharmDs, etc.
  - DEs can work with a patient’s physician to help design a personalized plan of care.
Glucose-to-Goal: Process Steps

1. Identify practices in community
2. Meet with practices to determine methods for identifying high risk patients, (e.g. A1C, BP)
3. Use EMR resources to proactively identify diabetes patients
   – Use data to identify patients at high risk
   – Adopt a more aggressive approach by reaching out to patients
4. Establish method for communication/ schedule for program
5. Deliver program
6. Bill for DSME
7. Refer to DSMS
8. Collect and report data
Reimbursement – No Cash COW!
What to do

1. Educators collect data for recognition
2. Seek Recognition Approval
3. Develop an agreement with practice(s)
4. Bill through practice -- return revenue to the hospital program
The Effectiveness of Nurse- and Pharmacist-Directed Care in Diabetes Disease Management: A Narrative Review

Mayer B. Davidson*

Charles R. Drew University, UCLA School of Medicine, USA

Abstract: People with diabetes have a marked increase in morbidity and mortality. The American Diabetes Association has recommended a multiphase, evidence-based process and outcome measures to improve diabetes care. However, these are not uniformly implemented in a consistent manner. There have been no national data to assess the implementation.
Inpatient Diabetes Education Is Associated With Less Frequent Hospital Readmission Among Patients With Poor Glycemic Control

• **OBJECTIVE:** To explore the relationship between inpatient diabetes education and hospital readmissions in patients with poorly controlled diabetes. IDE was conducted by a certified diabetes educator or trainee.

• **RESULTS:**
  – Patients who received DE had a lower frequency of readmission within 30 days than did those who did not (11 vs. 16%; \( P = 0.0001 \)). This relationship persisted after adjustment for socio demographic and illness-related factors.
  – IDE was also associated with reduced readmissions within 180 days, although the relationship was attenuated.
  – Further analysis determined that higher HbA1c was associated with lower frequency of readmission only among patients who received a diabetes education consult.

• **CONCLUSIONS:**
  – Formal IDE was independently associated with a lower frequency of all cause hospital readmission within 30 days; this relationship was attenuated by 180 days. Prospective studies are needed to confirm this association.

Take home message

• Is it reasonable to think that education can be done by a diabetes educator during a hospital stay?

• Educators can serve as:
  1. Resources for hospital unit nurse
  2. Train inpatient staff on new therapies and protocols
Meet Roxy Fenn, R.N. ... a girl with two feet on the ground. Will she find love or disaster as a high-flying Jet Set Nurse?
Comparison of Diabetes Education Through Telemedicine Vs in Person

• OBJECTIVE: To determine whether diabetes education can be provided as effectively through telemedicine technology as through in-person encounters with diabetes nurse and nutrition educators.

• RESULTS:
  – Problem Areas in Diabetes scale scores improved significantly with diabetes education (p .05).
  – Behavior change goals did not differ between groups.
  – HbA1c improved from 8.6 1.8% at baseline to 7.8 1.5% immediately after education and 7.8 1.8% at 3 months.

• CONCLUSIONS: Data suggest that telemedicine can be successfully used to provide diabetes education to patients.

Telemedicine for Reach, Education & Treatment (TREAT)

- PCPs and patients satisfied (100%)
- Mean A1C reduction – 2.0% (p=.02)
- Significant improvements in Problem Assessment in Diabetes (PAID), Empowerment and Self-Care scores

TREAT Outcomes

- PCPs and patients satisfied (100%)
- Mean A1C reduction – 2.0% (p=.02)
- Significant improvements in Problem Assessment in Diabetes (PAID), Empowerment and Self-Care scores

From Medical Home

To Insurer
Leveraging Education and Diabetes Support (LEADS)

- Practice-Based Care Managers (PCMH)
- Health Management & Lifestyle Coaches
- Senior Care Coordinators
- Diabetes Educators
- Transition Coordinators
- Direct Member Support
Educators

• Provide training
• Serve as resource – the diabetes EXPERT
• Collaborate on patient-specific needs
• Explore and develop new programs and materials
• Initiate and train on new processes and technology
• Connect with providers and community resources
Landscape for Diabetes Education Survey

- Increase in pharmacist representation
- Significant increase of multiple locations
- Many patients receive < 10 hours DSME
- Newly dx not receiving DSME within 6 mos. (only 16%)
- Pre-diabetes education – 78%

Evaluation of a Primary Prevention Program Delivered by Diabetes Educators

• **OBJECTIVE:** Determine if individuals at risk for DM who participate in an intervention delivered by diabetes educators in existing diabetes self-management education community based programs can reduce risk factors.

• **RESULTS:**
  – Mean overall weight loss was 11.3 lb (5.1%, \( P < .001 \)); in addition, significant decreases were noted in fasting plasma glucose, low-density lipoprotein cholesterol, triglycerides, and blood pressure.

• **CONCLUSIONS:**
  – Group Lifestyle Balance program delivered by diabetes educators was successful in reducing risk for diabetes and cardiovascular disease in high-risk individuals. Furthermore, diabetes educators, already integrated within the existing health care system, provide yet another resource for delivery of primary prevention programs in the community.

“If you don’t like change, you are going to like irrelevance even less.”
Related Resources from the National Diabetes Education Program

Joanne Gallivan, M.S., R.D.
Director, National Diabetes Education Program
National Institute of Diabetes and Digestive and Kidney Diseases
National Institutes of Health
Practice Transformation for Physicians and Health Care Teams

www.ndep.nih.gov/PracticeTransformation
Diabetes HealthSense

http://www.ndep.nih.gov/HealthSense
Webinar Slides and Evaluation

• Webinar Series Webpage
  – www.ndep.nih.gov/Webinars
• Presentation Slides
• Webinar Evaluation
• Certificate of Completion for Webinar Attendees
  – ndep@hagersharp.com