Diabetes Self-Management Education: It Takes All of Us

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Objectives

- Define the role of the diabetes educator and indicate how he/she is essential to the interprofessional diabetes care team
- Indicate the impact of the changing health care environment on diabetes educators
- Explain role of technology to maximize reach in DSMES
- Discuss ways to increase provider referral and patient-initiated access to DSMT services
A Diabetes Educator Delivers So Much More Than Education
Evolving Our Specialty

Changes ranked positive by diabetes educators:

- 79% say we should focus more on new technologies
- 83% think it’s a good idea to expand services to other chronic diseases
- 80% support elevating the role of educators into specialists with defined scope of practice
Vision for our Specialty

To drive optimal outcomes through the integration of diabetes clinical management, education, prevention and support.
Evolving Our Specialty

Changes ranked positive by diabetes educators:
say we should focus more on new technologies
think it's a good idea to expand services to other chronic diseases
support elevating the role of educators into specialists with defined scope of practice
Strategies Supporting the Vision

Person-Centered

Advocating for equity to person-centered care.

So that every individual with diabetes and cardiometabolic conditions has access to a diabetes educator.

Quadruple Aim

The optimization of diabetes care delivery for the quadruple aim.

Impacting quality, cost, and both patient and provider experience.

Behavioral Health

The promotion and integration of behavioral health.

Expand behavioral health competencies to promote holistic well-being.
Strategies Supporting the Vision

<table>
<thead>
<tr>
<th>Technology</th>
<th>Related Conditions</th>
<th>Integration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes Educators will be technology experts and data interpreters; trainers and consultants in order to drive care.</td>
<td>Diabetes, hypertension, obesity and cardiac diseases are not isolated disease states. Ed will claim our expertise in these areas of care.</td>
<td>Driving the integration of diabetes clinical management, self-management education, prevention and support.</td>
</tr>
</tbody>
</table>

Educators ensure that person centered care plans incorporate self-management education & on-going support. People with diabetes and cardiometabolic conditions benefit when health delivery is holistic and seamless.
Future Models of Care Emerging

- Fee-for-service to value-based care
- Community retail clinics
- Telemedicine
- Population health management
Population Health
The Diabetes Educator’s Evolving Role

<table>
<thead>
<tr>
<th>Traditional Model</th>
<th>Emerging Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYSTEM</td>
<td></td>
</tr>
<tr>
<td>Reactive</td>
<td>Proactive</td>
</tr>
<tr>
<td>Fee for service</td>
<td>Value-based</td>
</tr>
<tr>
<td>Pay for volume</td>
<td>Pay for quality</td>
</tr>
<tr>
<td>Entire population</td>
<td>Population stratified by risk</td>
</tr>
</tbody>
</table>
Population Health
The Diabetes Educator’s Evolving Role

<table>
<thead>
<tr>
<th>Traditional Model</th>
<th>Emerging Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUCATORS</td>
<td></td>
</tr>
<tr>
<td>Multidisciplinary team</td>
<td>Integrated teams</td>
</tr>
<tr>
<td>Unplanned, episodic care</td>
<td>Standardized, yet individualized care</td>
</tr>
<tr>
<td>Referral needed</td>
<td>Automatic trigger for referral</td>
</tr>
<tr>
<td>Educators primarily working in DSMES</td>
<td>Working in expanded roles; examples include care coordination, administration</td>
</tr>
</tbody>
</table>
## Population Health

The Diabetes Educator’s Evolving Role

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</thead>
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<tr>
<td><strong>PERSONS WITH DIABETES</strong></td>
<td></td>
</tr>
<tr>
<td>Limited to face-to-face interaction</td>
<td>Utilization of virtual health care</td>
</tr>
<tr>
<td>Limited benefit and utilization</td>
<td>Care as desired</td>
</tr>
<tr>
<td></td>
<td>Care delivered according to 4 critical times to see a diabetes educator^6</td>
</tr>
</tbody>
</table>

^6 Care delivered according to 4 critical times to see a diabetes educator.
The care system is in the community where the individual lives, learns, works, plays and prays.
Risk Stratification

1. Whole population
2. People identified with diabetes getting usual preventative care
3. People with moderate risk obtaining self-management skills
4. People at very high-risk receiving care management
The diabetes population

Low risk

- Require routine diabetes care, preventive services such as age appropriate screenings, immunizations, dental care, general health counseling plus any acute issues

Moderate Risk

- Require same as all PWD or
- Require risk specific care management and self-management education

High risk

- Require same as low and moderate risk
- Require more intense/frequent care management and care coordination

T. Pearson, Innovative Healthcare Designs ©
People with Type 2 Diabetes >18 yo

- **Low Risk**
  - A1c < 8 and LDL < 100 and BP < 140/90
  - Usual care and ensure preventive services
    - Clinic visit Q 3-6 months
    - Annual DSMES review

- **Moderate Risk**
  - A1c < 8 and LDL > 100 and/or BP > 140/90
  - PharmD work with patient on med adjustments – Treat to Target approach
  - CDE provide DSMES as needed

- **High Risk**
  - A1c > 8
  - CDE work with patient to review Tx plan and adjust meds/therapy/DSMES as needed – Treat to Target approach

- **Unknown Risk**
  - All 5 risk measures out of target and/or no labs in last 12 months
  - MA calls patient in for appt and updated labs and patient is re-stratified based on results

Example of risk stratification and tasks with accountability

T. Pearson, Innovative Healthcare Designs ©
Risk Stratification of the Diabetes and Prediabetes Population

CASE STUDY
Mr. Smith is a 58-year-old Hispanic man with type 2 diabetes that was diagnosed after the age of 50 years old.

1. BMI < 25 – family history and race/ethnicity risk
   - No risk

2. BMI is 35.5. Diagnosed with diabetes and started on Metformin 1000 mg
   - Low risk

3. Received DSMES and MNT. Metformin increased to 1500mg BID based on elevated SMBG results and A1C of 8.8%
   - Moderate risk

4. Recently became pregnant with twins.
   - High risk

1. Whole population
2. People identified with diabetes getting usual preventive care receiving initial DSMES
3. People with moderate risk obtaining DSMES and care management
4. People at very high risk receiving intensive management, DSMES and MNT
Risk Stratification of the Diabetes and Prediabetes Population

1. Whole population
2. People identified with diabetes getting usual preventive care receiving initial DSMES
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4. People at very high risk receiving intensive management, DSMES and MNT

CASE STUDY

Mrs. Gonzalez is a 34-year-old Hispanic female with type 2 diabetes who was diagnosed within the last 10 years.

1. Whole population
2. People identified with diabetes getting usual preventive care receiving initial DSMES
3. Postpartum diabetes care management with DSMES and MNT
4. Recently become pregnant with twins.

Care needs pre-pregnancy visits, education return to yearly assessment/reflection needs.
FOUR CRITICAL TIMES TO ASSESS, PROVIDE, AND ADJUST DIABETES SELF-MANAGEMENT EDUCATION AND SUPPORT

AT DIAGNOSIS

ANNUAL ASSESSMENT OF EDUCATION, NUTRITION, AND EMOTIONAL NEEDS

WHEN NEW COMPLICATING FACTORS INFLUENCE SELF-MANAGEMENT

WHEN TRANSITIONS IN CARE OCCUR
Technology is Transforming Health Care

- Artificial Intelligence
- Medical Decision Making
- Digital Health
- Remote Monitoring
- 3D Printing
- Smart Medications
- Virtual Reality + Classrooms
Technology Survey

**Comfort Level with Technology**

- Very Uncomfortable: 7%
- Somewhat Uncomfortable: 18%
- Somewhat Comfortable: 25%
- Very Comfortable: 42%
Technology Survey

- **93%** Interested in learning new technology
- **85%** Do not have a central resource
- **91%** Will learn & recommend technology
What is DANA?

DANA is a robust, always-current destination where members can participate in a variety of areas:

• **Products:** Research and review the latest technology products, devices and mobile apps

• **Education:** Access tech-focused continuing education and device training

• **Innovation:** Participate in innovation-shaping research and learn the latest news

• **Resources:** Search a repository of curated evidence-based research and information
In the **products section**, Educators can search a number of technology product categories.
Products section,

- all products in a specific category
- technical specifications for the product
- find information about any product quickly and efficiently
Summary: Emerging Areas for Diabetes Educators Focus

• Population health, its framework, organization and community focus
• Establish themselves as the expert and specialist
• Understand and participate in clinical quality and population health structure for the diabetes population
• Embrace, learn about, and utilize current and emerging technologies in diabetes care delivery including
  • decision support
  • clinical information systems
  • DSMES
  • ongoing monitoring of quality performance and communications
Summary: Emerging Areas for Diabetes Educators Focus

• Implement standardized stratification strategies
• Lead health care system workforce training
• Design targeted interventions and reassessment for people at various levels of risk
• Partner with key stakeholders in the community
• Actively advocate improvements in diabetes care and issues
• Get involved in professional associations, departments of health, and other community groups nationally and locally
MedStar Diabetes Boot Camp
Conception & Background

• Championed by the CMO

• 18 month period to gather input from system stakeholders including patients

• Integrated into the MedStar Health strategic and in population health plan
Transitioning Model of Care
Challenges of Diabetes Care Management

- Reaching A1C Goals*
- Access to DSMES/Lack of DSMES**
- Therapeutic Inertia***
- Medication Adherence
- Provider time for Patient Encounters

***17-3 Medical Care. 2017 55(4 0.,
MedStar Health
Type 2 Diabetes Population Stratification

All Patients with Diabetes

T2DM Outpatients

A1C >9%
MedStar Diabetes Pathway Boot Camp

Visits 1 and 2
- In person “human engagement”
- DM assessment
- DSMES/MNT
- DM Rx management
- Realtime BG meter

Virtual Clinic Visits
- Daily BG review
- Virtual visits
- Rx intensification & mngt
- DSME
  - Care integration.

Discharge to Primary Care

Provider support
MedStar Diabetes Boot Camp
Key Innovative Features

• Smart meter (cellular enabled)
• Virtual Clinic (Command Center)
• CDEs (RD, RN, PharmD, NP) medication management based on approved medication algorithm
• Ongoing DSMES
MedStar Diabetes Boot Camp
Inclusion Criteria

• Adults with T2DM

• A1C ≥ 9.0%

• PCP/Endo willing to have patient enter the program

• Patient is able and willing to participate in the program

• Active and established patient in the MedStar System
MedStar Diabetes Boot Camp

Exclusion Criteria

- Active medical issues which would preclude patient concentrating on diabetes management
- High dose steroids
- Pregnant or planning pregnancy
- Patient and/or custodial caregiver unwilling and/or unable to participate in program-related activities
Visit One

Comprehensive Assessment with Focus on:

• Barriers to medication adherence
• Taking diabetes medications including insulin administration and medication storage
• Eating patterns and access to food
• SMBG
• Self care behaviors
Telcare trademark Real Time Blood Glucose Monitoring System

- Register and Train Patient on use of meter
- No additional charge for cell service
- No uploading of BG values required
- BGs go to HCP dashboard
Visit One - DSMES
Diabetes to Go: Know the Basics About your Diabetes Before You Go Home

• Know Your Diabetes Numbers: Sugar and A1C
• Know when your Blood Sugar is Low
• Know when your Blood Sugar is High
• When to call your Doctor or go to the ED
• Basic Meal Planning
• Checking your Blood Sugar
• Know your Diabetes Medications
**Boot Camp Medication Algorithm**

- Developed by MedStar Endos & CDEs with input from PCPs
- NP/CDE use PCP ordered DM medication management algorithm
- NP or Boot Camp MDs review and sign off on rx or medication titration
- Hard stops for NPs/ CDEs

<table>
<thead>
<tr>
<th>BG (mg/dL)</th>
<th>One agent</th>
<th>2-3 oral agents</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 100</td>
<td>Metformin</td>
<td>Add metformin OR DPP-4i OR GLP-1</td>
</tr>
<tr>
<td>100-180</td>
<td>Add metformin OR DPP-4i OR GLP-1</td>
<td>Add metformin OR DPP-4i OR GLP-1</td>
</tr>
<tr>
<td>&gt; 180</td>
<td>Titrating to higher M, add GLP-1 OR GLP-1</td>
<td></td>
</tr>
</tbody>
</table>

**Pre-existing Diabetes on Oral Anti-hyperglycemic Agents**

- If not already on metformin, add 500 mg po bid, unless contraindicated.
- If not already on GLP-1, add GLP-1.
- Titrating DPP-4i, add GLP-1.
- If starting insulin, add DPP-4i.
Diabetes Medication
Shared Decision Making

- Insurance coverage & cost
- Reduction in A1C
- Frequency
- Risk of hypoglycemia
- Weight change
- Main side effects
Visit Two in 1-2 Weeks
Visit Two with CDE

- Review use of BG meter and BG patterns
- Food intake/ meal planning
- Medication barriers and adherence
- Medication management
- DSMS Plan
- Warm Hand-off to the Virtual Clinic
MedStar Virtual Control Center
Managed by Nurse Practitioners

- Contacts patient via phone, text, email a minimum 1 time a week
- Review BG Patterns
- Medication Adherence Strategies
- Medication titrations
- DSMES
Monitoring of Telcare Dashboard

• Patient informed that Telcare dashboard is **Not** monitored 24/7

• Should contact PCP or go to ED when unable to contact Virtual Clinic

• Reviewed week days 8 AM – 4 PM

• Allows for teachable moments, problem solving and targeted education
Week 12

• Patient returns to PCP or Endo

• Recommendations sent to referring provider which may include follow-up with CDE and Endo (NP or physician).

• Follow on dashboard until 6 months

• Sustaining strategies
Boot Camp Combined Phase 1 & 2
Demographics

<table>
<thead>
<tr>
<th></th>
<th>Cases N=366</th>
<th>Controls N=366</th>
<th>p-val</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N(%)</td>
<td>N(%)</td>
<td></td>
</tr>
<tr>
<td>Age, mean(SD)</td>
<td>56.7 (10.6)</td>
<td>55.4 (12.6)</td>
<td>0.08</td>
</tr>
<tr>
<td>Female</td>
<td>225 (62)</td>
<td>233 (64)</td>
<td>0.52</td>
</tr>
<tr>
<td>White</td>
<td>49 (13)</td>
<td>53 (15)</td>
<td>0.67</td>
</tr>
<tr>
<td>AA</td>
<td>296 (81)</td>
<td>284 (78)</td>
<td>0.27</td>
</tr>
<tr>
<td>Hispanic</td>
<td>5 (1)</td>
<td>3 (1)</td>
<td>0.48</td>
</tr>
<tr>
<td>Insurance</td>
<td>6 (2)</td>
<td>5 (1)</td>
<td>0.37</td>
</tr>
<tr>
<td>Commercial</td>
<td>154 (42)</td>
<td>152 (42)</td>
<td></td>
</tr>
<tr>
<td>Medicaid</td>
<td>64 (18)</td>
<td>59 (16)</td>
<td></td>
</tr>
<tr>
<td>Medicare</td>
<td>134 (37)</td>
<td>128 (35)</td>
<td></td>
</tr>
<tr>
<td>Self-Pay</td>
<td>8 (2)</td>
<td>18 (5)</td>
<td></td>
</tr>
</tbody>
</table>
A1C Results

- **Baseline HgA1c**: 11.2%
- **3 Month HgA1c**: 9.9%

- **26% Drop**
- **12% Drop**

Pathway Patients (n=366) vs Matched Controls (n=366)

P-value for A1C reduction patients vs controls < 0.001
## Pre and Post Hospitalization data: Cases vs. Controls

<table>
<thead>
<tr>
<th>Metric</th>
<th>Cases</th>
<th>Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>30 day</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-</td>
<td>19</td>
<td>7</td>
</tr>
<tr>
<td>Post-</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Reduction</td>
<td>- 79%</td>
<td>+ 14.0%</td>
</tr>
<tr>
<td><strong>90 day</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-</td>
<td>39</td>
<td>12</td>
</tr>
<tr>
<td>Post-</td>
<td>9</td>
<td>19</td>
</tr>
<tr>
<td>Reduction</td>
<td>- 76.9%</td>
<td>+ 58.3%</td>
</tr>
</tbody>
</table>

* P value = 0.036 for cases vs control post-intervention

Confidential - for MedStar Internal Review Only
Risk for Acute Care Utilization at 90 days: Boot Camp Patients

• Overall risk for acute care utilization: 51%

• Risk for inpatient admissions: 77%

• Risk for ED visits: 38%

p < 0.001
DM Boot Camp Pilot and Spread

<table>
<thead>
<tr>
<th>2014-2015</th>
<th>Pilot at 3 hospital based ADA ERP program sites (n=98)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>Spread to total of 5 sites (n=268)</td>
</tr>
<tr>
<td>2017</td>
<td>Spread to a total of 7 sites</td>
</tr>
<tr>
<td>2018</td>
<td>Spread to a total of 8 sites and VNA</td>
</tr>
<tr>
<td>2019</td>
<td>Mobile CDE Hired and begin HTN Management Protocol</td>
</tr>
</tbody>
</table>
MedStar Self-Insured Patients

- MedStar Employees
- MedStar Family Choice Medicaid
- Medicare ACO
Conclusions

• The CDEs plays an integral role in population health.

• The CDE must be agile in the changing healthcare environment

• The technology enabled MedStar Diabetes Boot Camp has proven to be effective in reducing A1C and acute care utilization as compared to standard of care.

• Patients, referring providers and Boot Camp CDEs providers have expressed high satisfaction with the Diabetes Boot Camp program.
A Diabetes Educator Delivers So Much More Than Education