Welcome!
Mobile Health, Community Health Workers, or Both for the Care of Type 2 Diabetes Patients with Medicaid

Michelle Magee, MD
MedStar Health Diabetes, Research & Innovation Institutes
Georgetown University School of Medicine

Gail Nunlee-Bland, MD\(^1\); Richard Katz, MD\(^2\)

\(^1\)Howard University School of Medicine; \(^2\)George Washington University School of Medicine
Disclosures

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Introduction

• Minorities with type 2 diabetes (DM), especially African-Americans whom are insured by Medicaid have an excessive burden of illness as well as low self-management knowledge & skills
Introduction: Barriers to Diabetes Care Management

- Engagement between patient and healthcare team
- Attainment of Healthcare Effectiveness Data & Information Set (HEDIS) goals:
  - A1c measurements
  - Eye, foot, kidney exams
  - Lipid testing and goal
  - Blood pressure testing and goal
  - ASA
- Medication adherence
- Distress related to diabetes
- Superficial focus on wellness goals with minimal support from healthcare team
  - Exercise
  - Nutrition details
  - Smoking cessation
- Rarely address
  - Appointments - care team access
  - Pharmacy access
  - Medication adjudication – renewals - coordination
  - Social needs- food, housing, etc.
Strategies to Close Gaps in Diabetes Care

• mHealth
  – using mobile technology (your phone) and ‘apps’ to support diabetes care

• Community Health Workers
  – support patients and their providers to help improve health and well-being
Objectives:
We compared addition to usual diabetes care of 3 strategies to improve diabetes care management for Medicaid recipients,
• mHealth alone,
• CHW alone, or
• mHealth + CHW
# Diabetes Wellness + Health Goals

<table>
<thead>
<tr>
<th>Wellness Behaviors</th>
<th>Health Goals</th>
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<tbody>
<tr>
<td><strong>1</strong> Self monitor glucose ≥1/week (avg)</td>
<td>8 Retinopathy screen past year</td>
</tr>
<tr>
<td><strong>2</strong> Weight control: BMI &lt; 28 or down &gt; 5% past yr or weight loss program</td>
<td>9 Renal function screen past year</td>
</tr>
<tr>
<td><strong>3</strong> Exercise &gt;20 minutes 3x/week</td>
<td>10 Foot screen in past year</td>
</tr>
<tr>
<td><strong>4</strong> Not smoking or in cessation program</td>
<td>11 Lipid testing in past year</td>
</tr>
<tr>
<td><strong>5</strong> Good medication adherence</td>
<td>12 A1c testing in past 6 months</td>
</tr>
<tr>
<td><strong>6</strong> Self-monitor blood pressure ≥1/week (average) (* if hypertensive)</td>
<td>13 ≥ 1 diabetes care visit in past year</td>
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<tr>
<td><strong>7</strong> Taking aspirin (* if recommended by MD)</td>
<td></td>
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Secondary Endpoints

- ↓ HbA1c
- # HEDIS goals met
- ↓ Healthcare utilization
- ↑ Medication adherence
- ↓ Diabetes distress
- mHealth utilization
- Patient and healthcare team satisfaction
Study Design

Randomization (like flipping a coin)

Medicaid  
Type 2 diabetes  
A1c > 8%  
Missing >2/13  
wellness/clinical  
goals  
N= 166

Group 1  
mHealth Alone  
N = 56

Group 2  
CHW Alone  
N = 56

Group 3  
mHealth + CHW  
N = 54
Methods: mHealth
VOXIVA: Care4life System

• Personalized to provide:
  – Diabetes education and motivation messages
  – Glucose+Weight+Exercise +BP goals and logs
  – Medication reminders-adherence tracking
  – Appointment reminders

• Content:
  – Aligned with ADA clinical guidelines
  – Licensed from ADA

Education
With clean hands, use the lancet device to poke the fleshy side of the fingertip, slightly off center from the middle of the tip (hurts less).

Medication Adherence
7am med reminder: Sometimes you might feel overwhelmed. Remember to take it one day at a time. Focus on what you can do today.

Glucose monitoring
Time to check your BEFORE meal glucose. Reply with your BEFORE meal glucose reading (e.g. 125).

Goal tracking
Did you meet your goal of exercising at least 3 days last week? Reply with the number of days you exercised last week (e.g. Reply 3).
Methods: Community Health Workers

• Conduct home and/or off-site visits requested by patients and healthcare team. A minimum of 2 in the first 2 months

• Conduct weekly check-in calls or clinical meetings for patients based on interest/need/request

• Review C4L monthly report with CHW+C4L subjects

• Provide C4L reports and feedback to participants’ health care providers
# Results: Baseline Characteristics

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Overall (n=166) Mean (Std Error)</th>
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<tr>
<td>Age (yrs)</td>
<td>52.9 (0.76)</td>
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<tr>
<td>Female % (N)</td>
<td>72.3 (120)</td>
</tr>
<tr>
<td>Black % (N)</td>
<td>90.9 (151)</td>
</tr>
<tr>
<td>Unemployed % (N)</td>
<td>70.5 (117)</td>
</tr>
<tr>
<td>Public insurance % (N)</td>
<td>98.8 (164)</td>
</tr>
<tr>
<td>BMI</td>
<td>36.7 (0.69)</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
</tr>
<tr>
<td>7-8th grade</td>
<td>30.1 (50)</td>
</tr>
<tr>
<td>High school</td>
<td>58.4 (97)</td>
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Study Findings

• Few dropouts over 1 year (94% completed)
• Missing average of 7 Wellness/Clinical goals at baseline
• Improved by 1.4 goals ($p<0.0001$) with no significant difference between the 3 groups
• A1c improved by -1.3% overall
• More patients in the C4L plus CHW got to an A1c < 8%
• Easy/Hard goals to improve were identified
What else did the study show?

Patients in all groups had:
- Less hospital admissions
- Less urgent visits to the doctor

Patients using C4L mHealth tool reported:
- Less diabetes-related distress, and that it was
- Easier to take care of themselves
- Easier to track blood sugars and blood pressure
- Diabetes and blood pressure better controlled
Conclusions

• mHealth and CHWs, alone and together, improve patient achievement of wellness and health goals
• mHealth and CHW improve A1c, with best results when both mHealth and CHWs used by patient
• mHealth and CHW are potentially valuable additions to chronic care management of type 2 diabetes among Medicaid patients and should be added to our medical system options
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