Health System/Community Collaboration for Diabetes Management and Prevention

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Disclosure

Dr. Wesson has a portion of his salary paid through BSWH as a consultant for Tricida, Inc.
Enhancing Population Health Through Successful Diabetes Management Requires that we:

- Develop community-based infrastructures for appropriate nutrition + physical activity that is adjunctive to traditional medical care
- Acquire the skills for effective collaborations between health systems and community-based institutions to leverage this infrastructure
- Overcome the mistrust of health systems in many underserved, largely ethnic minority, communities
Objectives

- Recognize the challenge of sustaining proper nutrition and increased physical activity as management strategies for diabetes.
- Describe how health system collaborations with community-based institutions enables integrating lifestyle changes with medical care.
- Identify how health system/community collaborations can identify pre-diabetes and enable intervention to prevent progression.
What is the value of adjunctive, community-based “wellness” care? A 1-year pilot trial

66 consecutive DM2 patients new to clinic given option for standard clinic care vs. integrated care clinic (ICC)

All given standard DM2 medical care + lifestyle recommendations but ICC patients had warm handoff to CHW for community-based wellness

Primary outcome was HbA1c after 1 year

Our HWC Model

Dr. Andrea Harris, BSW HWC Director of Programs

BSW HWC Model for Community Integrated Value Based Care

Medical Care

Primary Care
Pharmacy Referral
Social Worker
Chronic Disease Management
Diabetes Education
Technology
Publication
Outcome Measures

Dallas Parks & Recreation
Healthy Cities

Physical Activity
Fitness

Nutrition

Nutrition Counseling
Farm Stands
Faith-Based Partnerships
Community Health Workers
Components of Healthcare

Medical Care

Physical Activity

Nutrition
Health and Wellness Center “Value Chain”

BSW HWC Clinic → Nutrition Education → Nutrition Provision → Increased Physical Activity

Enabled by:

Partner Churches → BSW Health System → Dallas Park & Recreation

Wesson and Kitzman. *Health Affairs* 37:543-550, 2018
BSW Health Wellness Center is a public/private partnership of BSWH + Parks/Rec + Area churches
Level 3 Family Medicine Clinic, Primary Care Medical Home

Dr. Lydia Best, BSW HWC Medical Director
Nutrition Education and Provision: BSW HWC
Farm Stands and Teaching Kitchen

- BSW HWC at Juanita J. Craft Rec Center
- Anita Martinez, Cummings, and Samuel Grand (City of Dallas) Rec Centers
- Three Partner Churches
- ~10,000 visits between 06/17 and 06/18
Increased Physical Activity: Sit and Fit
Increased Physical Activity: Aerobic and Isometric
Increased Physical Activity: Aerobic, Inside and Out
6-weel walking program developed by the Arthritis Foundation

In addition to HWC our Rec Center, we have signed up 3 additional Rec Centers, 1 Senior Center, and 20 of our 31 partner churches

Goal is 1500 participants

Dr. Winfred Parnell, BSW HWC Post-Doctoral Fellow
ICC patients had a greater absolute and % decrease in HbA1c

Dr. Aisha Montgomery, BSW HWC Post-Doctoral Fellow

Clinical (Medical) care makes a comparatively small contribution to desirable health outcomes.

Univ of Wisconsin, Population Health Institute, *Different Perspectives for Assigning Weights to Determinants of Health*. Feb, 2010
Progressive layering of inputs yields progressively more and better health outcomes in DM2

Adapted from Garber, et al. Endocrine Practice 25:69, 2019
The Growing Prevalence of Diabetes

Evident Diabetes

“Incubating” Or Pre-diabetes

BaylorScott&White

HEALTH AND WELLNESS CENTER
AT JUANITA J. CRAFT RECREATION CENTER
DALLAS
Structured Weight Loss Interventions as a component of pre-diabetes management

**Weight loss for obese, pre-diabetic individuals reduces the risk for transition to diabetes**

Garber, et al. Endocrine Practice 25:69, 2019

**Obese individuals recognize the serious health implications of obesity but are reluctant to ask health professionals for weight reduction help**


**AA women are the least responsive US demographic to weight loss strategies**

Delta NIRI food frequency survey, then 16 weekly DPP sessions by trained church member

Physical activity survey, then 150-200 minutes/week “power walk” goal

6-month curriculum, follow up 4 months after end of curriculum, 10 months after entry

Dr. Heather Kitzman, BSW HWC Director of Research

### General Data (Means) for the Participant Cohort

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Ethnicity (B/H/W)</th>
<th>Male/Female</th>
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<tr>
<td>48.8</td>
<td>220/0/0</td>
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<table>
<thead>
<tr>
<th>Weight (Kg)</th>
<th>BMI</th>
<th>Waist (cm)</th>
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<tr>
<td>100.1</td>
<td>36.7</td>
<td>105.2</td>
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Participant Outcomes at 10 months

Estimated Personnel Costs for 6-month Weight Loss Interventions ($$)

Venita Owens, BSW HWC Chief Operating Officer

Integration of community-based wellness with primary care has comprehensive outcomes

Individual Patients

Health System
Health system performance varies by locale

Overall health system performance varies greatly among states

Better performance

Worse performance

States are arranged in rank order from left (best) to right (worst), based on their overall 2018 Scorecard rank.

commonwealthfund.org

May 2018
Improving Traditional Clinic Health Care Alone did not Reduce Utilization of Expensive Health Care Resources

- FQHC improved individual patient outcomes but did not reduce ED or IP utilization
  
  Kahn, et al. Rand Corp for CMMS, 2017

- Health system partnership with non-health community improved health outcomes
  

- Health system pop health partnership with local churches reduced ED and IP utilization
  
  Wesson and Kitzman, et al. Health Affairs 37:543, 2018
Lifestyle Interventions Have Advantages Over Traditional Clinical Care

Lifestyle changes including weight reduction for obese patients reduced transition from pre-diabetes to diabetes

Garber, et al. Endocrine Practice 25:69, 2019

Lifestyle interventions more effectively than metformin reduced DM2 incidence in high risk individuals

Diabetes Prevention Program Research Group. NEJM 346:393, 2002

Lifestyle modifications achieve similar weight reduction among obese patients and at lower cost vs. usual care

A value chain of resources is needed to improve population health

Faith Based Partnerships
Community Health Workers
Virtual Health Fairs
Diabetes Education
Diabetes Prevention

Community Partnerships
Community Outreach
Joint Effort with City of Dallas
Parks and Recreation

Community Care Clinic
Access to Care
Health Screening
Health Coaches
Nutrition Counseling

Farm Stands
Cooking Demonstrations
Community Garden

21% REDUCTION IN ED VISITS

37% DECREASE IN INPATIENT ADMISSIONS

Effect of Population Health Strategies on ED and IP Encounters after Engagement

![Bar chart showing the comparison of ED and IP encounters before and after engagement, with a p-value of <0.05 for the difference between the two groups.]

Effect of Population Health Strategies on ED + IP Encounters after Engagement

% of ED Encounters for the indicated disease categories

*CVD
*Metabolic

Before
After

*p < 0.05 vs. Before

Population Health Strategies Reduced System Costs

Cost Change

-60 -50 -40 -30 -20 -10 0

ED costs IP costs

Successful Service Delivery and Research in Underserved Communities Requires First Establishing Trusted Agency

- Distrust of health systems is high in underserved communities
- Need functional relationships with trusted community-based *Institutions*
- Must collaborate as equal partners

Wesson and Kitzman, Acad Med 93:839, 2018
Enhancing Population Health Through Successful Diabetes Management Requires that we:

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