

# Health System/Community Collaboration for Diabetes Management and Prevention

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**BaylorScott&White**

HEALTH AND WELLNESS CENTER

AT JUANITA J. CRAFT RECREATION CENTER

DALLAS

# 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

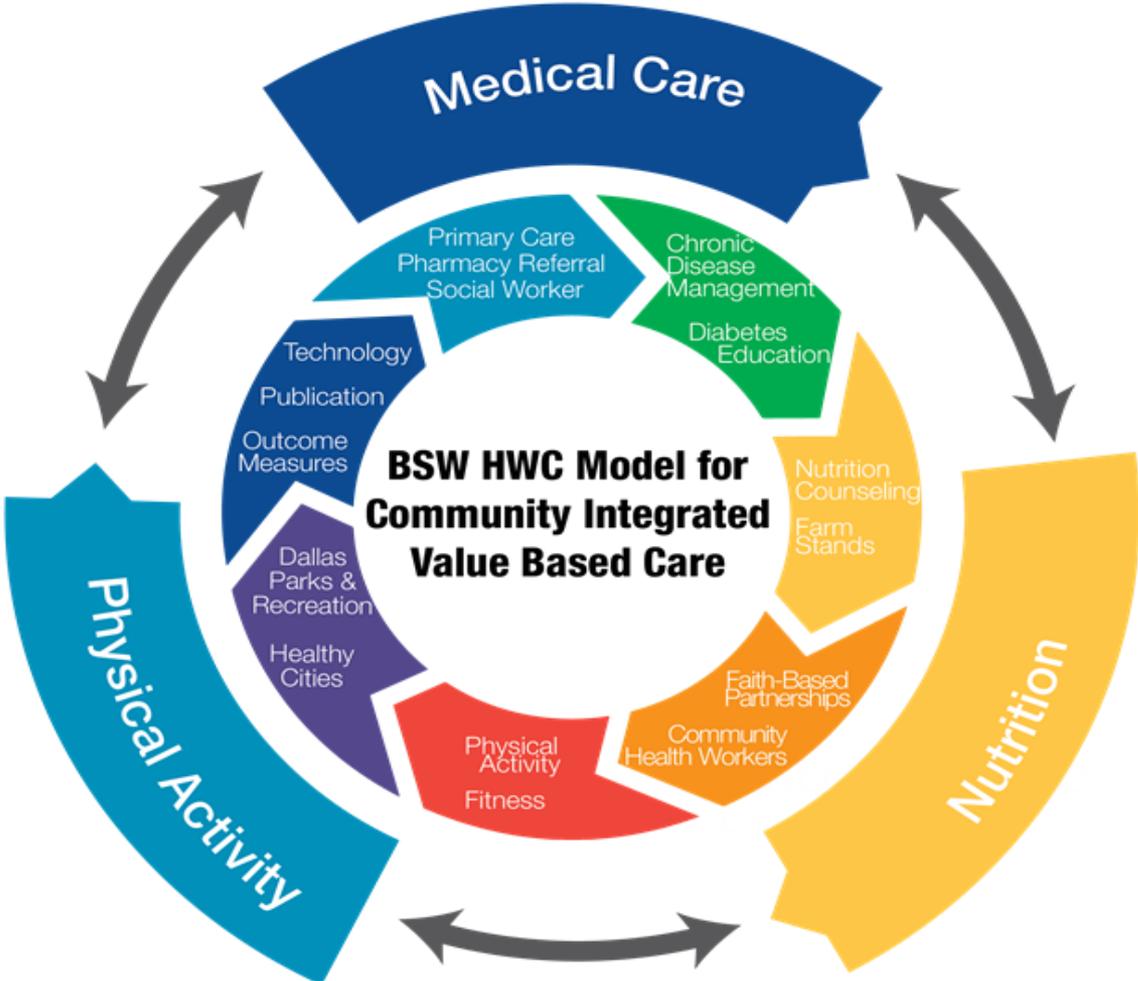
Primary outcome was HbA1c after 1 year

Montgomery A, et al. Society of Behavioral Medicine Annual Meeting, Washington DC, 2019 (Abstract)

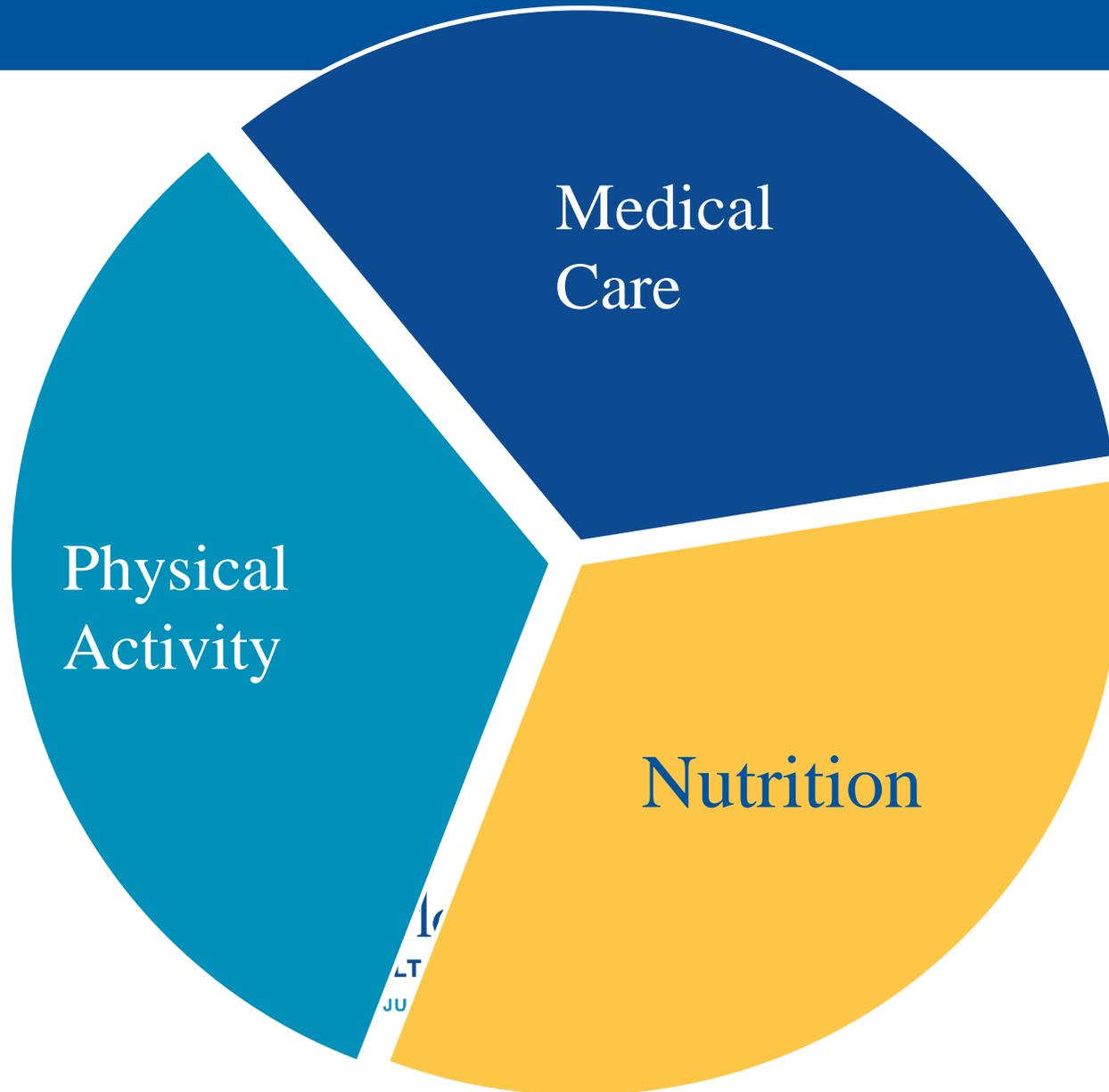
# Our HWC Model



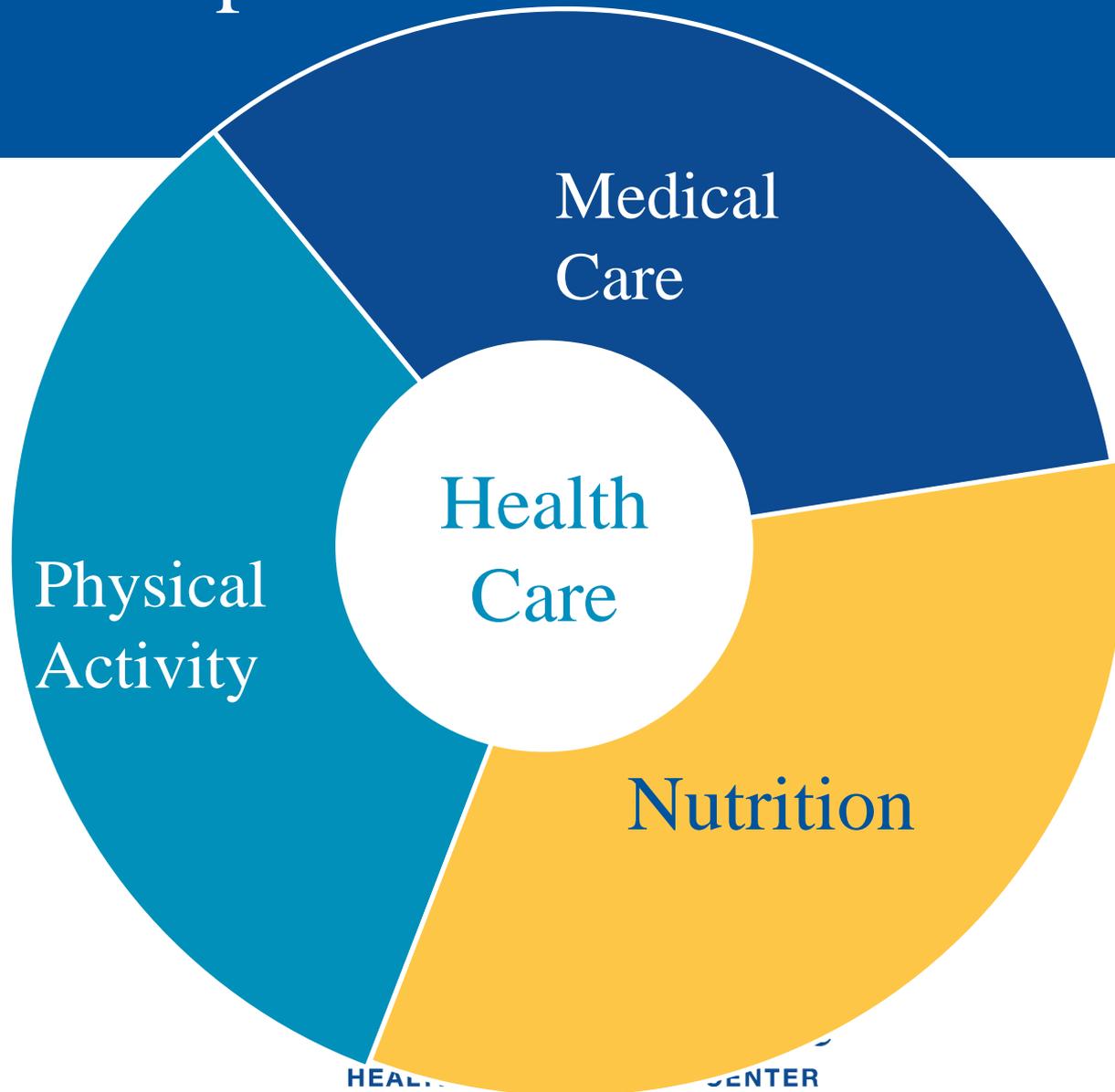
Dr. Andrea Harris,  
BSW HWC Director  
of Programs



# Components of Healthcare

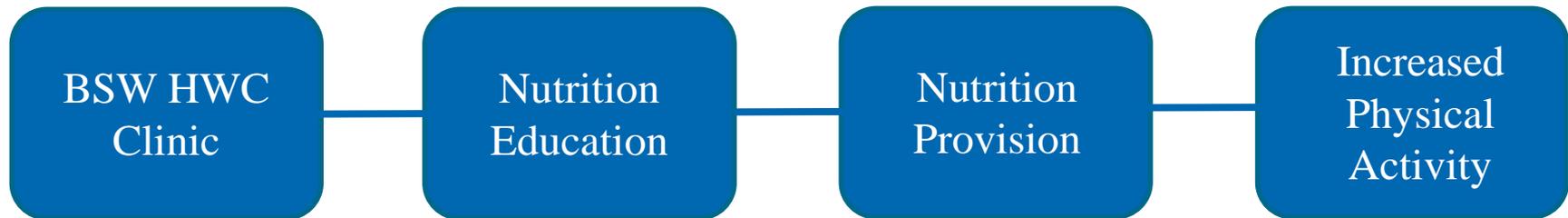


# Components of Healthcare



HEALTH CARE CENTER  
AT JUANITA J. CRAFT RECREATION CENTER  
DALLAS

# Health and Wellness Center “Value Chain”



Enabled by:



Wesson and Kitman. *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



# BSW HWC recently incorporated the CDC “Walk with Ease” into our Physical Activity Program



Dr. Winfred Parnell,  
BSW HWC Post-  
Doctoral Fellow

6-week walking program developed by the Arthritis Foundation

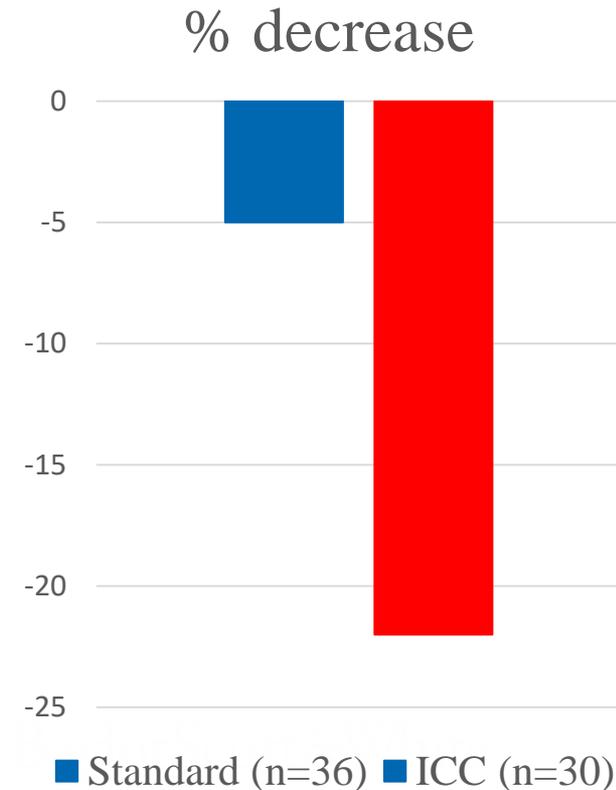
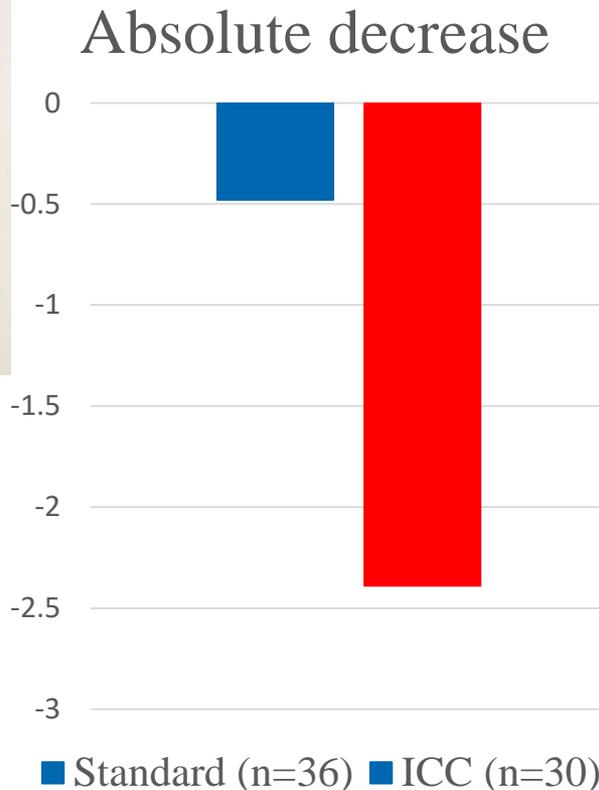
In addition to HWC our Rec Center, we have signed up 3 additional Rec Centers, 1 Senior Center, and 20 of our 31 partner churches

Goal is 1500 participants

# ICC patients had a greater absolute and % decrease in HbA1c

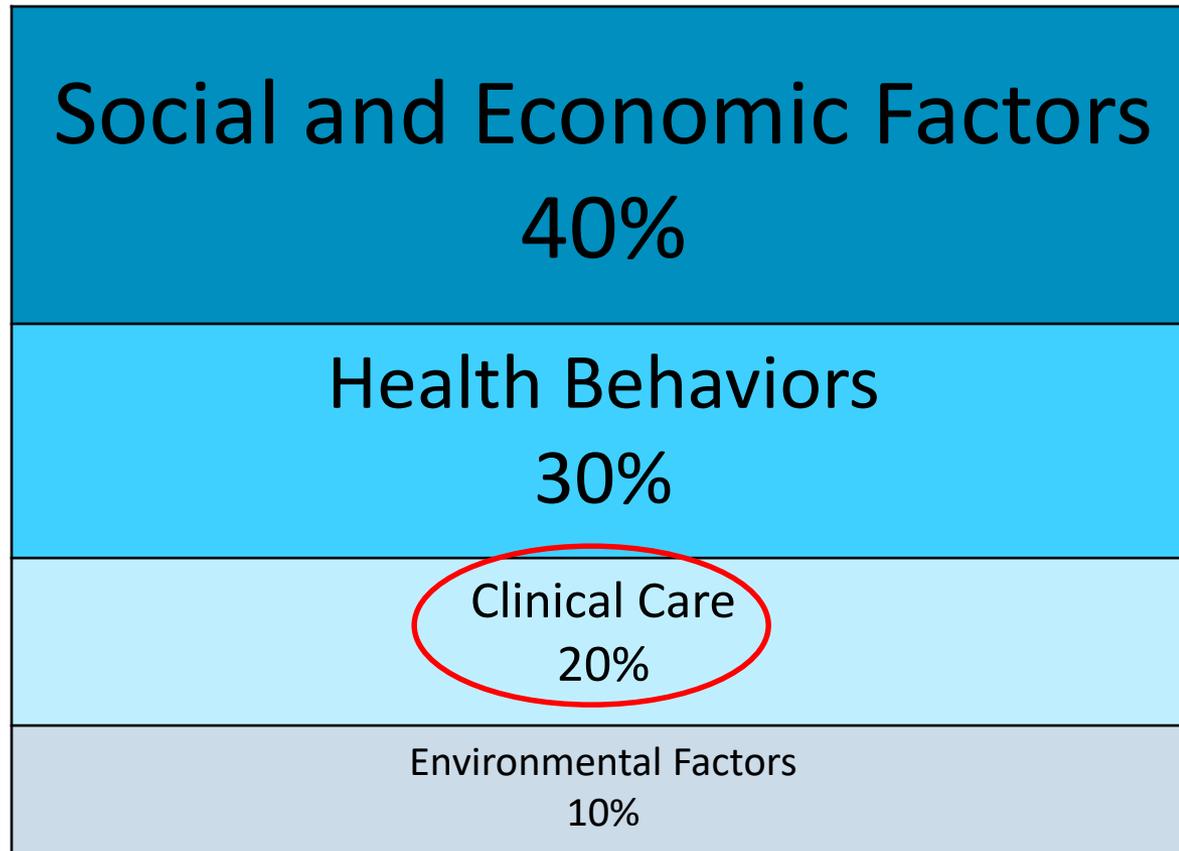


Dr. Aisha Montgomery,  
BSW HWC Post-  
Doctoral Fellow



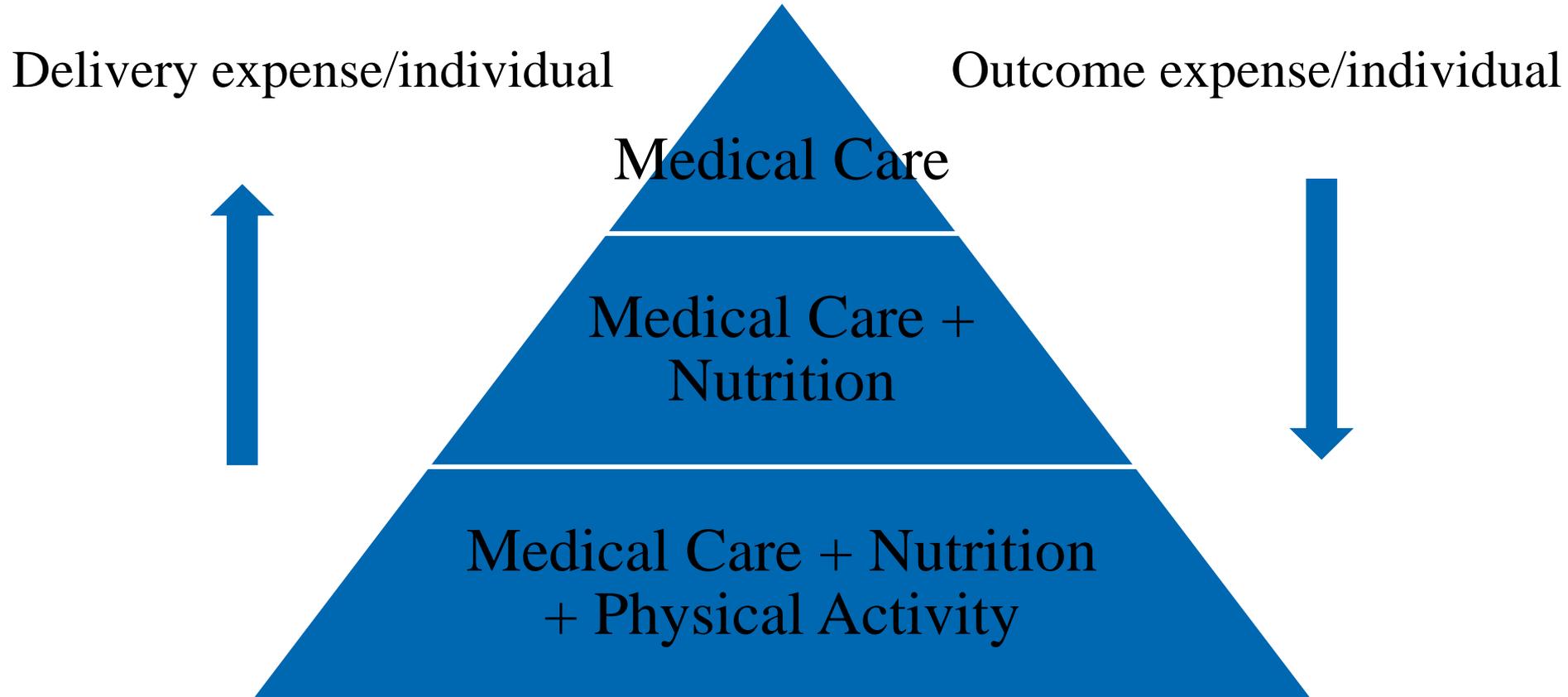
Montgomery A, et al. Society of Behavioral Medicine Annual Meeting, Washington DC, 2019 (Abstract)

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



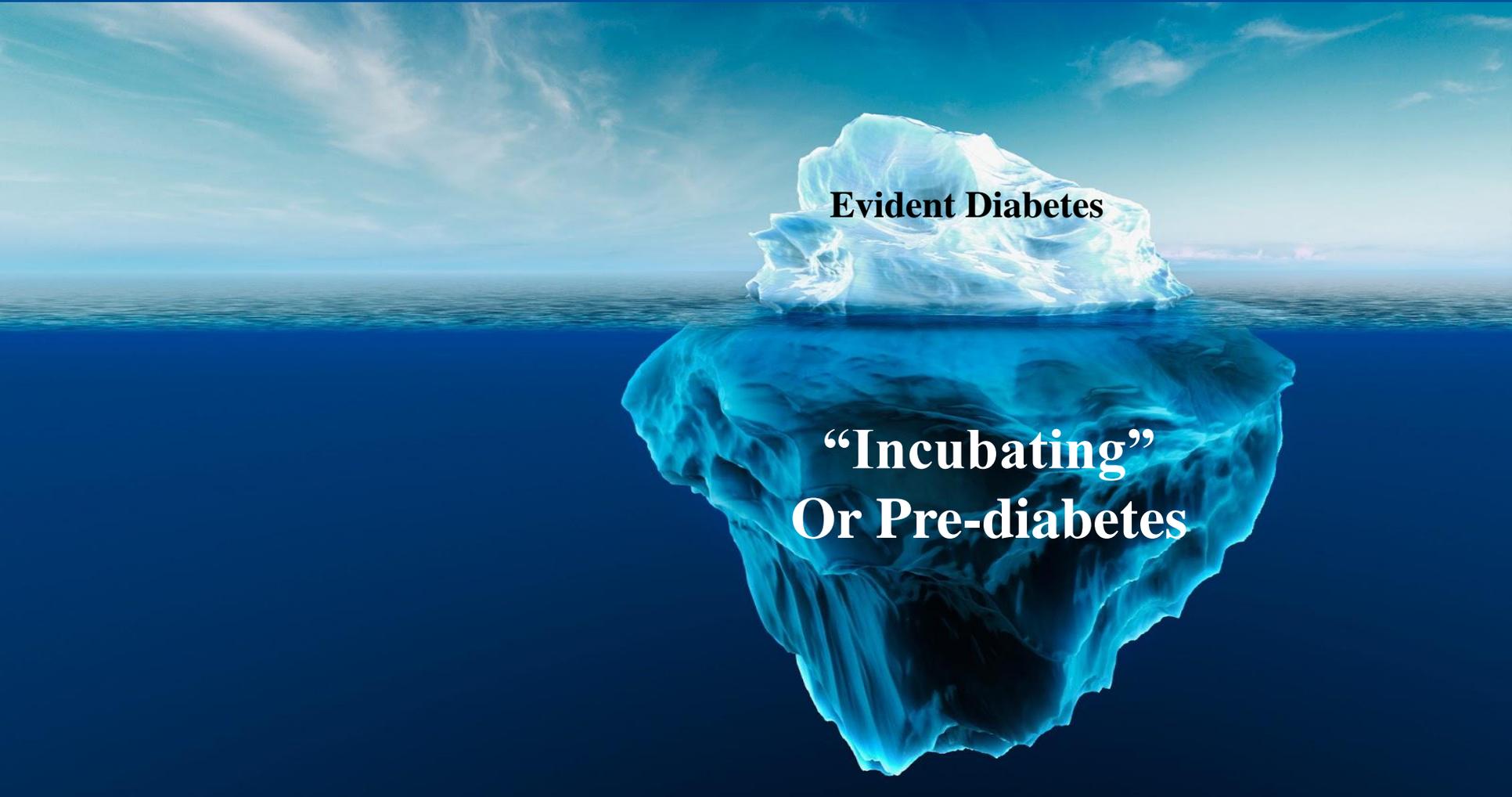
Univ of Wisconsin, Population Health Institute, *Different Perspectives for Assigning Weights to Determinants of Health*. Feb, 2010

# 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**

# 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

Caterson, et al. Diab Obes Met (2019) DOI: 10.1111/dom.13752

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

Kumanyika, et al. Obesity Reviews 15 (Suppl 4):204, 2014

# Pre-Diabetes Weight Reduction Interventions



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

Tan MT, Mamun A, Kitzman H, Dodgen L. Ethnicity and Disease 29:297, 2019.

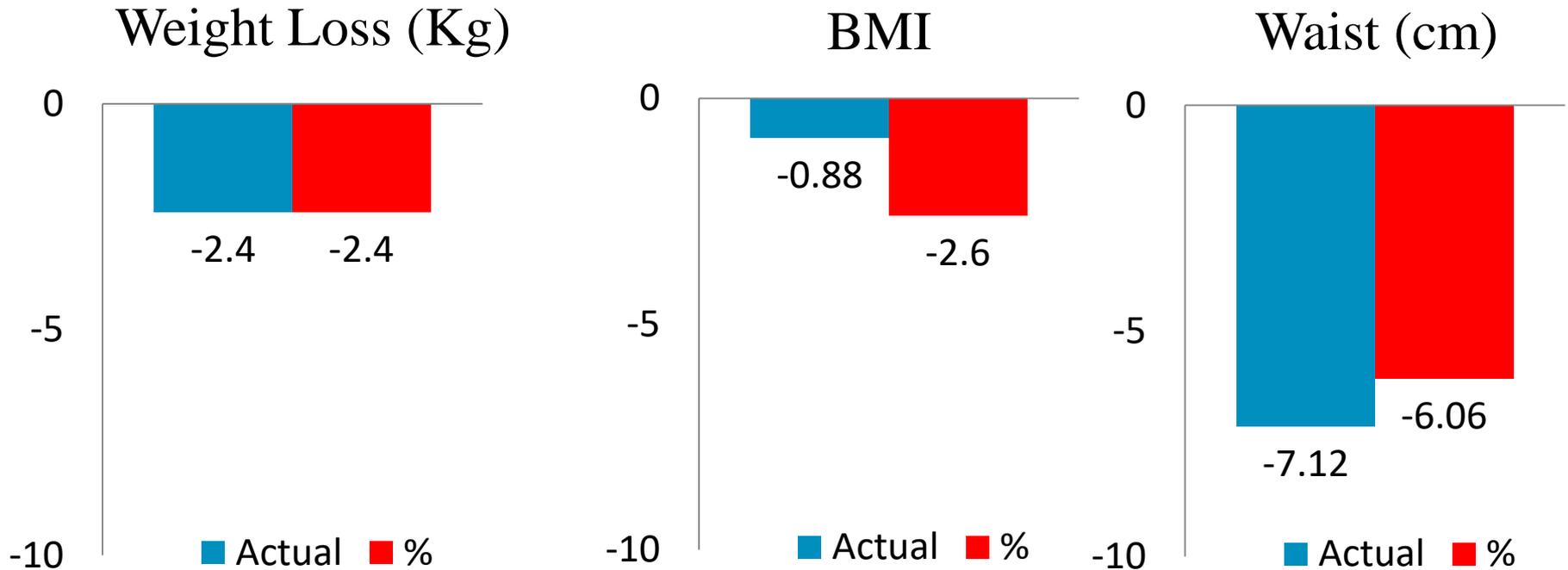
# General Data (Means) for the Participant Cohort

Age (years)	Ethnicity (B/H/W)	Male/Female
48.8	220/0/0	0/220

Weight (Kg)	BMI	Waist (cm)
100.1	36.7	105.2

Tan MT, Mamun A, Kitzman H, Dodgen L. Ethnicity and Disease 29:297, 2019.

# Participant Outcomes at 10 months

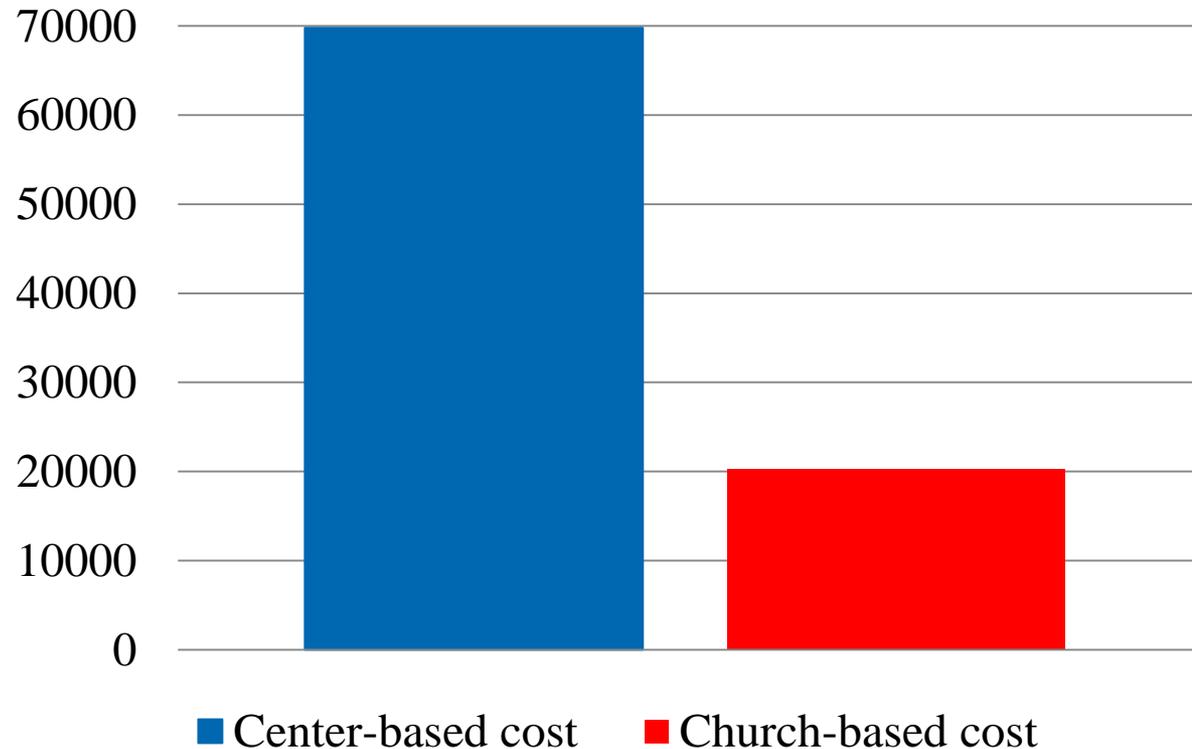


Tan MT, Mamun A, Kitzman H, Dodgen L. Ethnicity and Disease 29:297, 2019.

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



Venita Owens,  
BSW HWC Chief  
Operating Officer



Tan MT, Mamun A, Kitzman H, Dodgen L. Ethnicity and Disease 29:297, 2019.

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

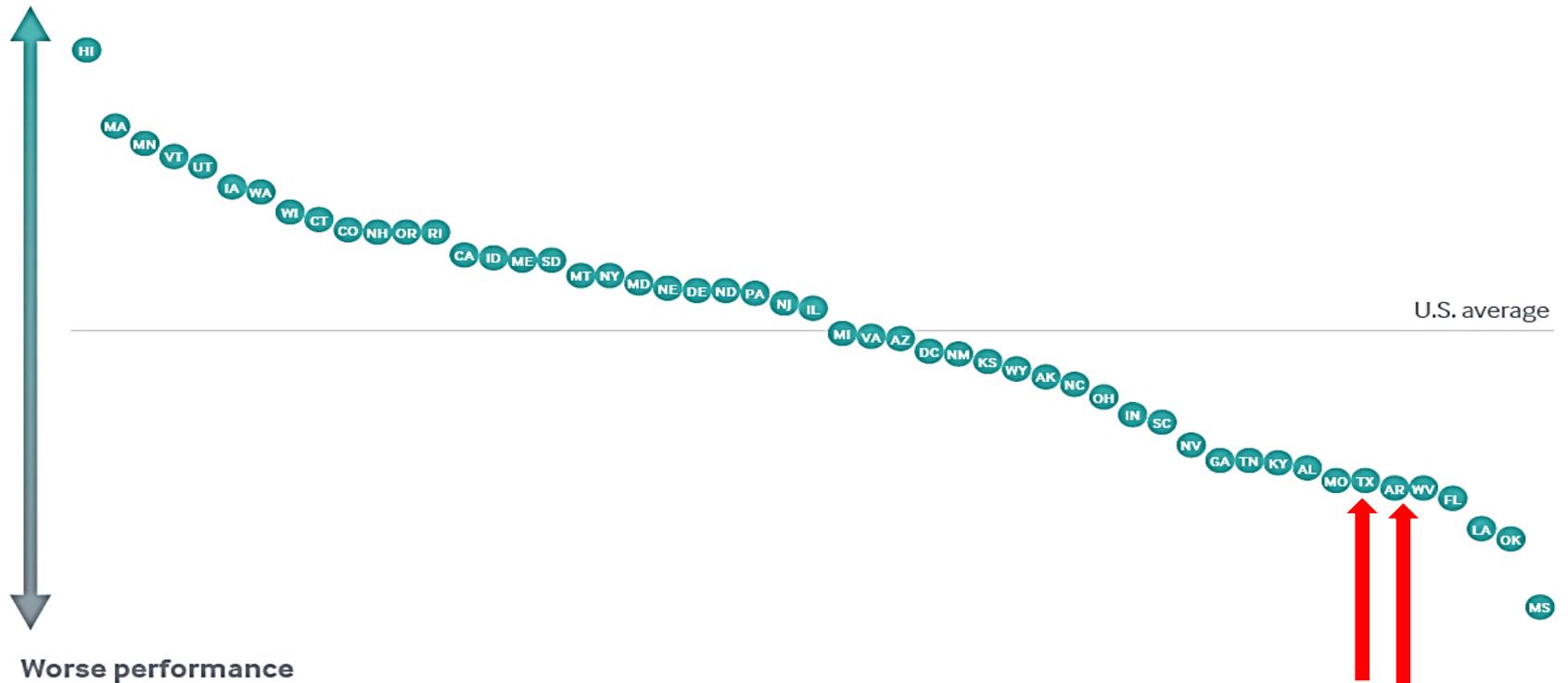
Individual Patients

Health System

# Health system performance varies by locale

## Overall health system performance varies greatly among states

Better performance



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

[commonwealthfund.org](http://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

Isham, et al. Health Affairs 32:1446, 2013

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

Wolf, et al. J Am Dietetic Assn 107:1365, 2007

# 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

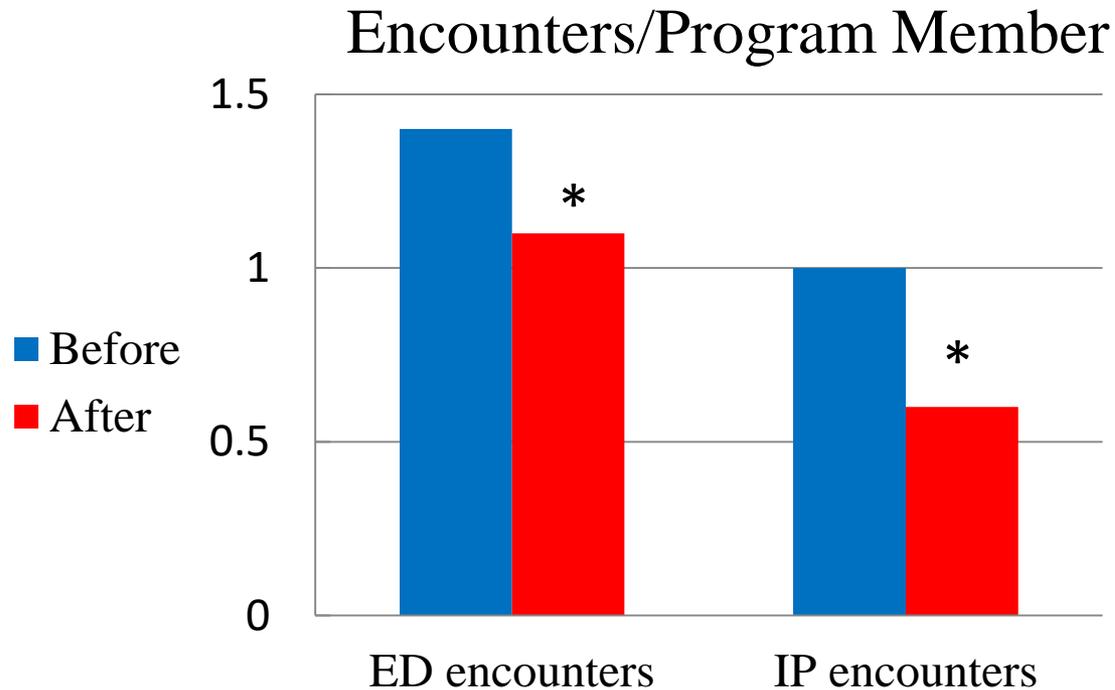
## MAKING AN IMPACT

**21%**  
REDUCTION  
IN ED VISITS

**37%**  
DECREASE IN  
INPATIENT  
ADMISSIONS

Wesson, Kitzman, et al., *Health Affairs*, 37:543, 2018.

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

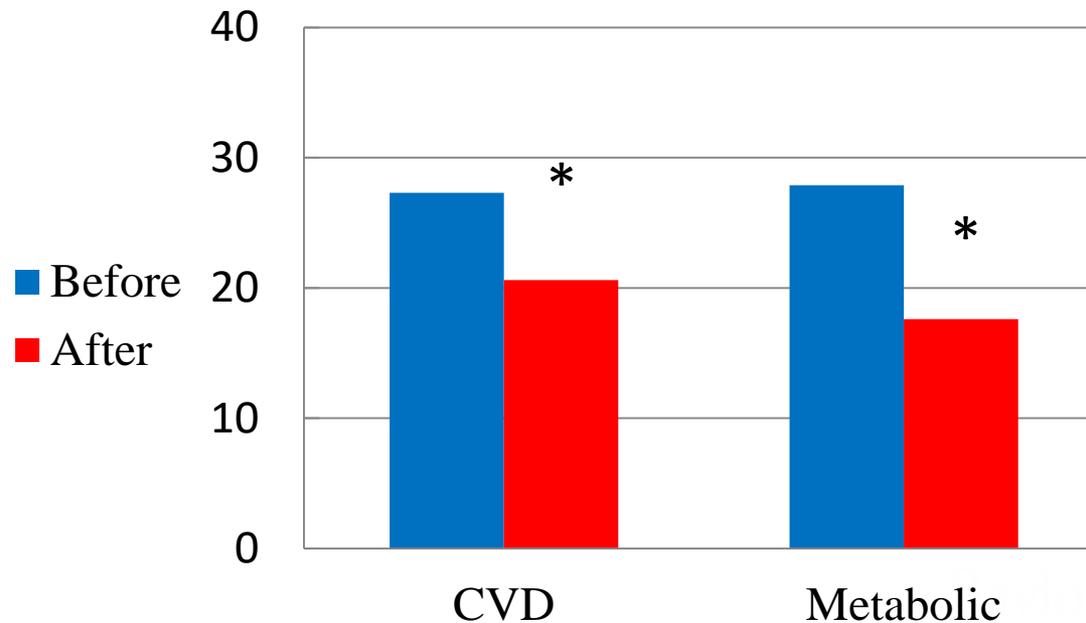


\*p < 0.05 vs. Before

Wesson, D., Kitzman, H., Halloran, K., Tecson, K. *Health Affairs*, 37, NO. 4 (2018): 543–550

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

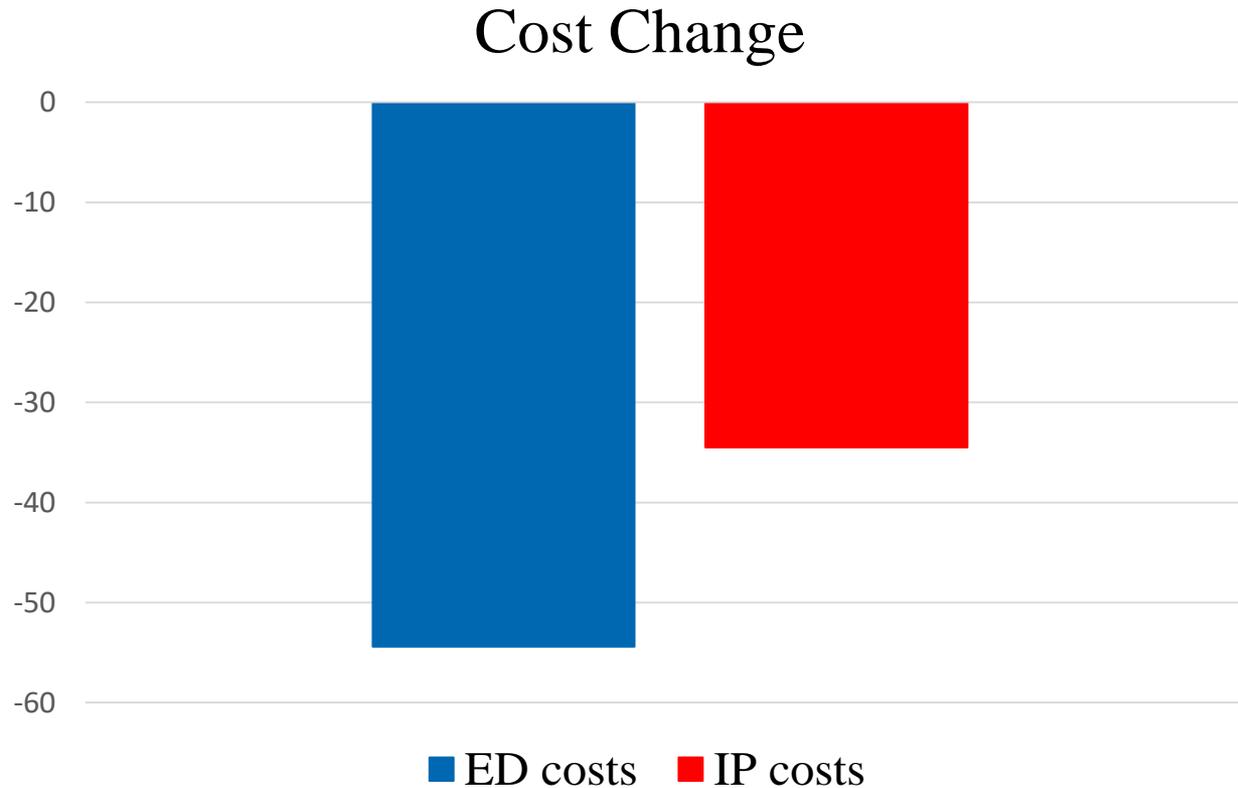
% of ED Encounters for the indicated disease categories



\* $p < 0.05$  vs. Before

Wesson, D., Kitzman, H., Halloran, K., Tecson, K. *Health Affairs*, 37, NO. 4 (2018): 543–550

# Population Health Strategies Reduced System Costs



Wesson, D., Kitzman, H., Halloran, K., Tecson, K. *Health Affairs*, 37, NO. 4 (2018): 543–550

# 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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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