Impact of Community Health Workers at Student-Led Clinics through the Spencer Fox Eccles School of Medicine at the University of Utah

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AGENDA

- COMMUNITY HEALTH WORKER ROLES
- IMPACT OF COMMUNITY HEALTH WORKERS IN URBAN AND RURAL SETTINGS
- UNIVERSITY OF UTAH STUDENT-LED CLINICS
- HEALTH IMPACT OF CHWS AT STUDENT-LED CLINICS
- FINANCIAL IMPACT OF CHWS AT STUDENT-LED CLINICS

COMMUNITY HEALTH WORKER ROLES

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What is a Community Health Worker?

- CHW play a vital role in improving health and well-being, especially in underserved communities

- CHWs, deeply connected to their communities through shared language, ethnicity, and experiences, serve as vital bridges to healthcare providers, guiding individuals in navigating the system effectively

- CHWs advocate for individual and community health needs, and help reduce health disparities.

- CHWs provide culturally appropriate health education and information, and help people manage chronic illnesses.

IMPACT OF COMMUNITY HEALTH WORKERS IN URBAN AND RURAL SETTINGS

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Study type	Characteristic of the population	Sample size	Description of the intervention / Role of CHW	Outcomes	Source of funding
Prospective, Pre-Post	Adults from rural geographic areas of the Midwest with diabetes and/or congestive heart failure (CHF)	277	CHW were part of a health team, led by a registered nurse (RN) serving as care manager in coordination with the patient's primary care provider. CHW provided linguistic and cultural translation for the health team and helped the patient understand and manage their condition, as well as set personal goals. They facilitated appointments and connected patients with community services. RN or CHW visited patients every 2 to 8 weeks based on need	Over 12 months, participants significantly improved BMI, physical activity and diet Rate of hospital admission decreased by 18% for patients with CHF, 49.2% for those with diabetes only, and 56.5% for patients with both conditions. However emergency department use increased. This was offset in terms of cost by the decrease in hospitalization. ROI was $1.36	None
Longitudinal, quasi-experimental	Medicaid recipients (mean age around 66) in three rural counties of Arkansas	919 (intervention) + 944 (control)	About 6 full-time CHW were employed through a community program to deliver home and community-based outreach for Medicaid eligible people with unmet long-term care needs	An average 23.8% reduction in Medicaid expenditure per participant per year for a calculated return of $2.92 per dollar invested in the program	Arkansas Department of Human Services, Division of Medical Services The Robert Wood Johnson Foundation Enterprise Corporation for the Delta Medicaid Administrative Funds University of Arkansas for Medical Sciences Center for Clinical and Translational Research
Pre-post	Adults 18–65 from 5 counties in southeastern Kentucky, who spoke English and had been diagnosed with diabetes	137	CHW made home visits to coach participants on diabetes management, reinforcing provided nurse education material. Participants were given a $25 gas card to go to the nurse group education sessions and $10 to complete CHW coaching sessions	Compared to baseline participants experienced higher empowerment ($p < .05$) measured better on self-care ($p < .01$) and reported higher diabetes knowledge ($p < .0001$). In addition, A1C dropped by .34 in 12 months ($p < .0001$)	Partnership between University of Kentucky Center of Excellence in Rural Health, the Kentucky Cabinet for health and Family Services Department of Public Health and the Anthem Foundation

Study type	Characteristic of the population	Sample size	Description of the intervention / Role of CHW	Outcomes	Source of funding
Secondary analysis of a feasibility study	Persons with diabetes (Type II) within a small rural county in Southeastern US. Predominantly African American	48	Participants were randomly assigned to either a nurse (RN) management via phone, or a face-to-face management with a CHW. Both RN and CHW focused on medication adherence, follow-up, self-management coaching, and referral to community resources	Patient activation measures (PAM) were similar at baseline, but CHW had higher PAM at 3-month. While both groups increased PAM, this was only significant in the CHW group (+8.57, $p < .01$), compared to +1.32)	The primary feasibility study was supported by South Carolina Clinical and Translational Research Institute at Medical University of South Carolina through a grant from the NIH National Center for Advancing Translational Sciences (NCATS). North Carolina Translational and Clinical Sciences Institute (NC TraCS) at University of North Carolina Chapel Hill which is supported by the National Institute of Health, and South Carolina Department of Health and Human Services
Quasi-experimental	Adult non-pregnant women from 4 rural North Carolina counties, which have low health indicators and outcomes	146	A 6-months curriculum-based weight management program. Peer circle leaders (CLs) facilitated small group discussions and activities. CLs chose the lengths and frequency of meetings based on the needs of participants, all adding up to 4 h/month	On average participants lost 3.3lbs ($p < .01$) and .56 BMI score ($p < .01$) and fruit consumption increased ($p < .05$). Vegetable consumption and physical activity increased but were not statistically significant	Centers for Disease Control and Prevention
Randomized Controlled Trial	Uninsured Women 40 and over, not pregnant and at least 2 months postpartum, in rural US-Mexico boarder area	101	In both arms women received postcard reminders for annual exam, with information on transportation. In the Promotora arm, women were visited at home 2 weeks later to address barriers to making an appointment as applicable	65% of participants in the promotora arm completed their physical compared to 48%. The CHW intervention was associate with a 35% increase in following up with the physical (RR = 1.35, 95% CI 0.95–1.92)	Unclear

Study type	Characteristic of the population	Sample size	Description of the intervention / Role of CHW	Outcomes	Source of funding
Pre-post	Adults in Rural Colorado	7,381 participants screened (4,743 identified at risk for CVD) Analysis population = 698	CHW screened participants and used theoretical frameworks to assess participants readiness to change They also used motivational interviewing to set goals with participants. Follow-up occurred via phone calls at 2 weeks and then as needed. Participants return within 3 to 12 months after screening for post-test	Improvement in diet, weight, blood pressure, lipids, and Framingham Risk Score, with the greatest effects among those with uncontrolled risk factors	Cancer, Cardiovascular and Pulmonary Disease grants program of the Colorado Department of Public Health and Environment Caring for Colorado Health Foundation Anschutz Family Foundation
RTC	Ohio Appalachian Women in need of Pap Smear	90	Lay Health Advisors addressed barrier to screening with two in-person visits (baseline and 10 months), two phone calls (1 and 5 months), and four mailed post-cards (2, 3, 6, and 7 months)	63.3% of women moved at least one stage toward completing Pap test by end of intervention	Grant # P50 CA10563, P30 CA016058, and UL1-RR025755
quasi-experimental	Rural Southeastern Georgia immigrant Hispanic/Latinx females, 21–65, who had not received a Pap Smear in the 2 years or more	90	Promotoras led curriculum guided activities including cancer knowledge pre-post test, and dialogue to explore barriers to screening, lasting 3 h and in groups of 7 participants. Control group participated in classes on nutrition	32% of participants in the intervention group received Pap test compared to 19% in the control group ($p = .178$). Cervical cancer knowledge increased in intervention group compared to control ($p < .04$)	National Cancer Institute Office of the Director
Retrospective pre-post cohort	Children and their caregivers	294	As part of the Childhood Asthma Project (CAP), trained CHW offered eight at home monthly visits to educate families about environmental triggers and reinforce medical treatment and care plans	Medication and device management significantly improved. Most behaviors (13/18) to reduce indoors triggers significantly improved. Admissions to Hospital and ED also significantly decreased	Research and Intramural Funding Program at the University of Washington School of Nursing Women's Health Nursing Research Training, National Institute of Nursing Research Leadership in Pediatric Pulmonary Care Training, Maternal and Child Health Bureau

HEALTH IMPACT OF CHWS

- **18% decrease** in hospital admission rates for patients with CHF
- **49% decrease** in hospital admission rates for patients with DM
- **13.5% decrease** in hospital readmission rates to general medicine
- **.34 - 2.4 point decrease** in A1C (time dependent)
- **75% increase** in physical activity (times per week)
- **35% increase** in following up on routine physical exams
- Increased health literacy (e.g., cervical cancer and diabetic care)

OVERALL HEALTH IMPACT OF CHWS

Interventions using CHWs were found to improve health outcomes including A1C, BMI, BP, cancer screening rates, medical adherence, quality of life, etc.

In addition to patient outcomes, several studies noted decreases in hospital admission and emergency department utilization.

FINANCIAL IMPACT OF CHWS

2018 study involving 277 patients involved in a 12-month CHW-centric program:

- **$495,131 (34.2% reduction)** = difference in total costs received for hospital readmissions
- **$47,759 (29.3% reduction)** = difference due to ED utilization
- **$214,221 (41.0% reduction)** = difference in total cost due to **203.4 inpatient days saved (48.5% reduction)**
- **$1,834** = average savings per diabetic patient with CHW
- ROI value realized **$1.37**

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FINANCIAL IMPACT OF CHWS

- **23.8% decrease in Medicaid expenditure = $2.92 ROI**
- In context of patients with cardiovascular disease:
- **$9.39 ROI** = Base risk male patient with CHW
- **$4.96 ROI** = Base risk female patient with CHW
- **$14.96 ROI** = At-risk male patient with CHW
- **$27.51 ROI** = At-risk female patient with CHW

UNIVERSITY OF UTAH STUDENT-LED CLINICS

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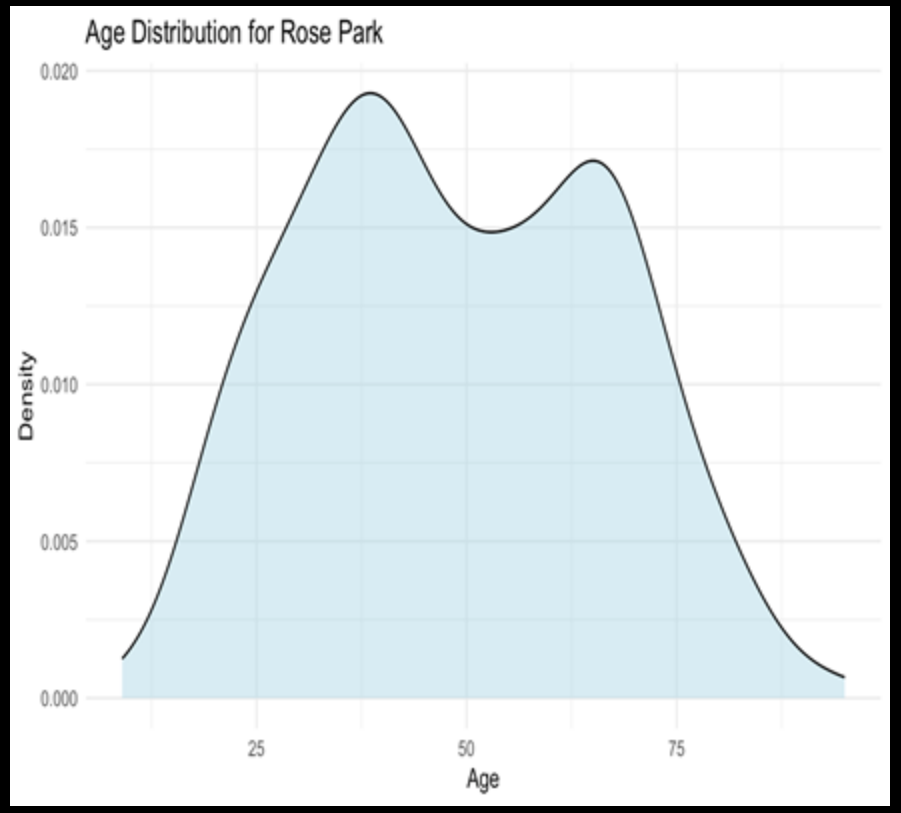
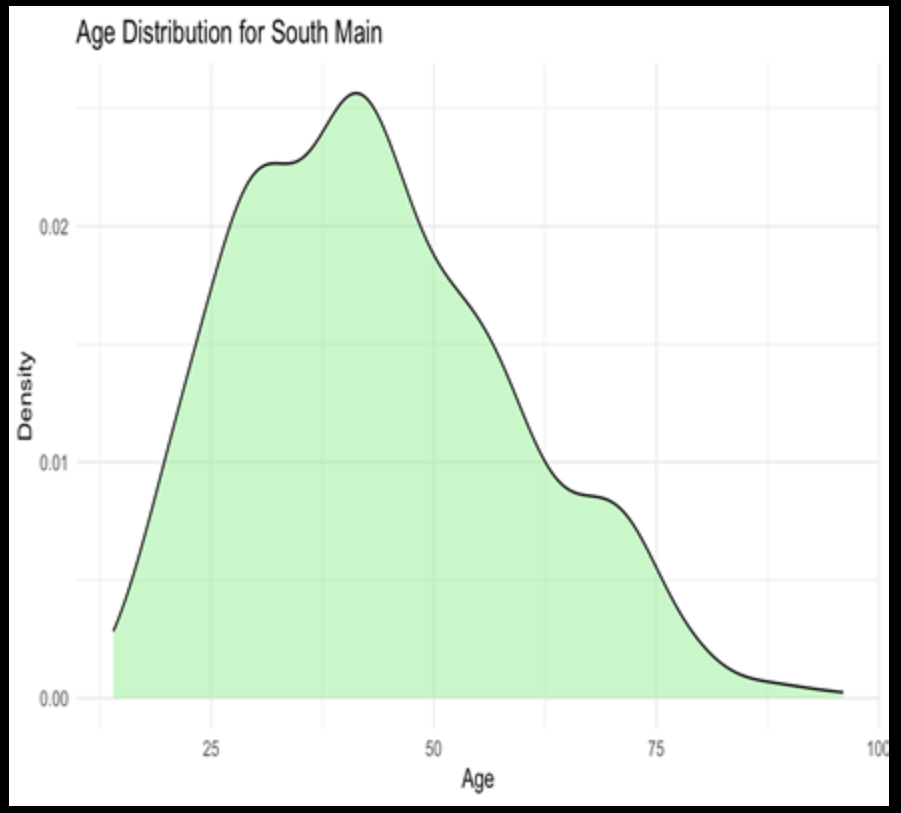
STUDENT-LED CLINICS

- **Rose Park clinic:** Serves a diverse and underserved population with integrated Community Health Workers (CHWs) to enhance patient support and care delivery.
- **South Main clinic:** Provides care to a similarly underserved area but has not implemented CHWs, offering a point of comparison for evaluating their impact.
- **Objective of comparison:** Highlight the effectiveness of CHWs in improving access to care and reducing health disparities.
- **Key Focus Areas:** Analyze patient demographics, chronic disease management, and care access metrics to evaluate CHW effectiveness.

STUDENT-LED CLINICS

- **Insights Through Data**: Visual comparisons of key metrics between the two clinics to understand the role of CHWs in achieving better health outcomes.





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STUDENT-LED CLINICS

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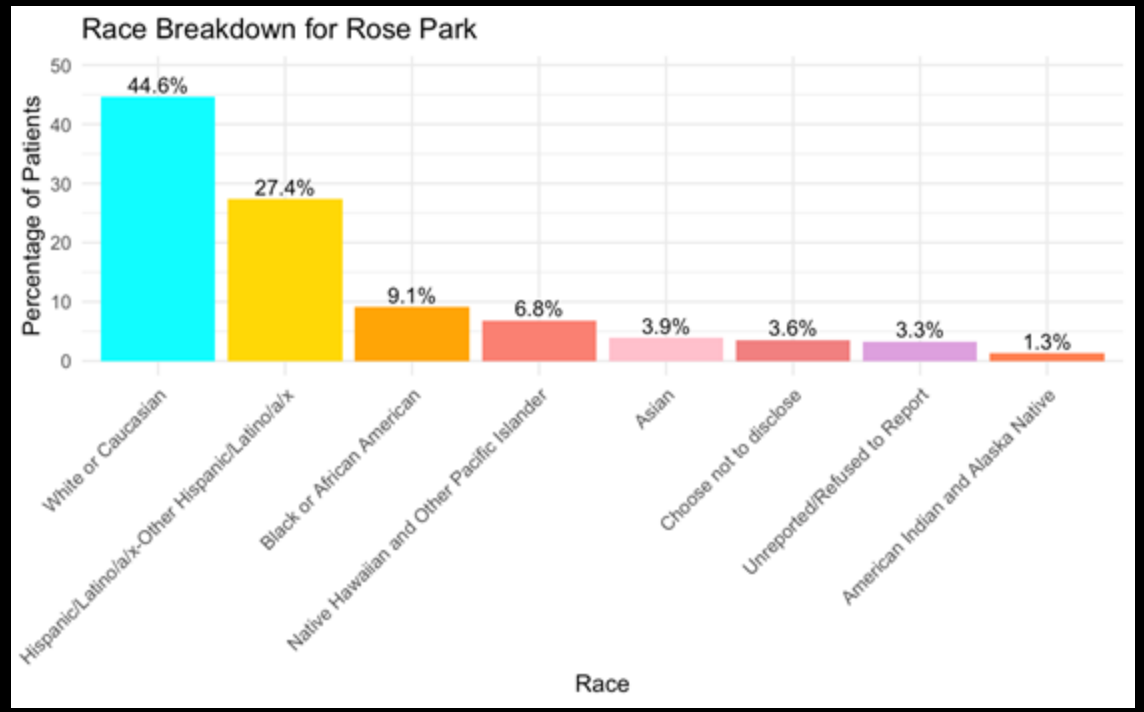

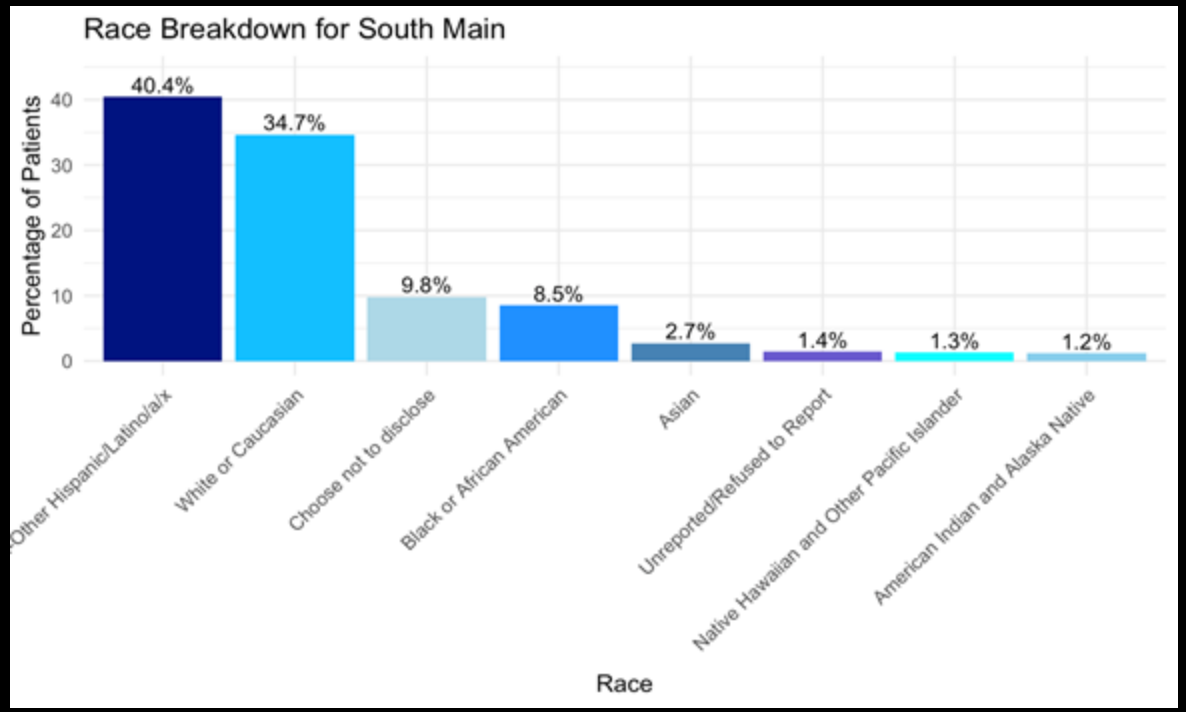

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HEALTH IMPACT OF CHWS AT STUDENT-LED CLINICS

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HEALTH IMPACT OF CHWS

Rose Park Clinic

- 308 patients during May 2023 - October 2024 (17 months)
- 1-3 CHWs
- 56 patient contacts documented over 1.5 years but per CHWs have worked with 100s of patients

South Main Clinic

- 695 patients during May 2023 - October 2024
- No CHWs (although recently integrated last month)

HEALTH IMPACT OF CHWS

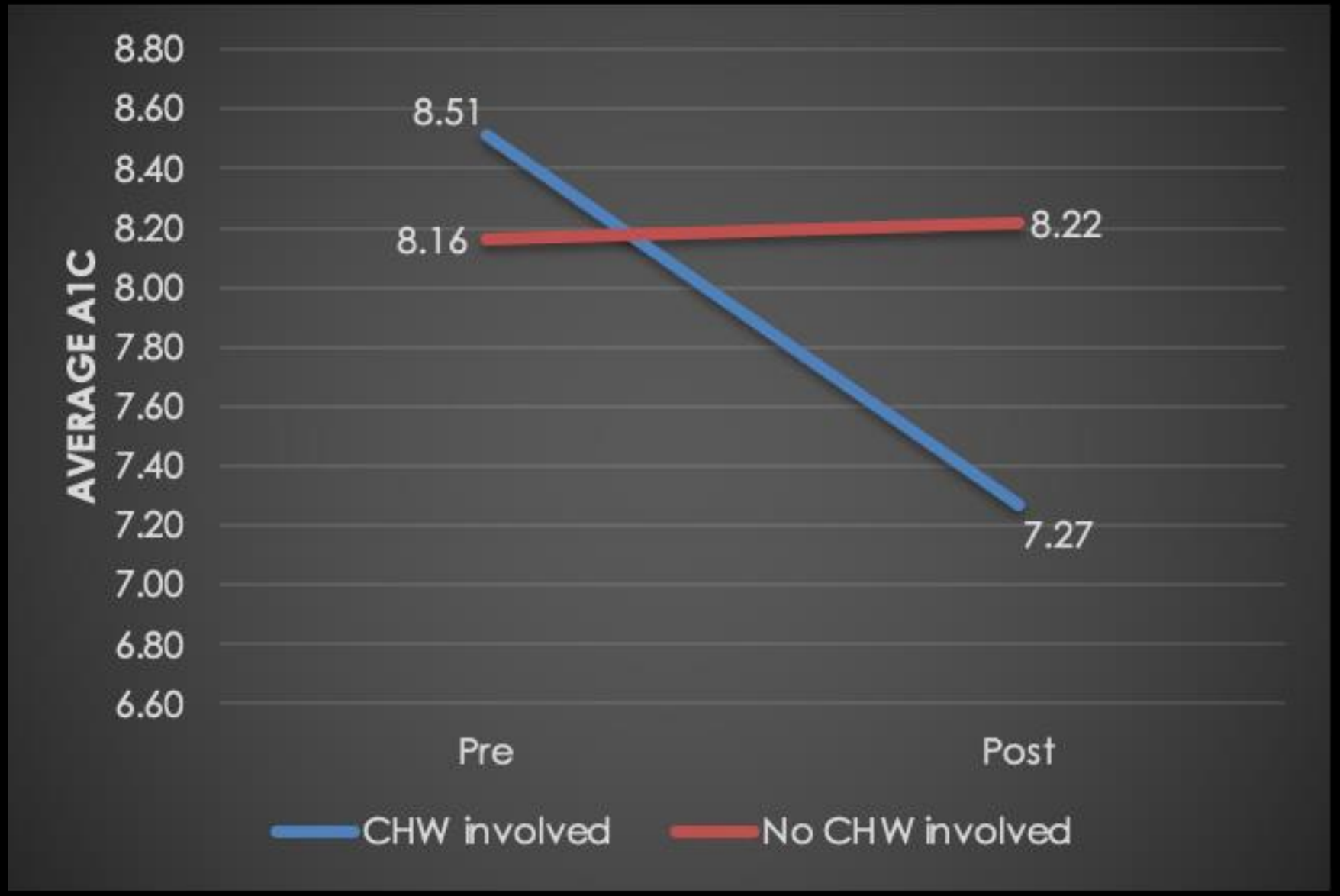
Rose Park Clinic

- Matched 14 patients with Type 2 Diabetes Mellitus who had worked with CHWs to semi-equivocal patients who had not used CHWs

South Main Clinic

- While South Main Clinic does now employ CHWs, it only recently incorporated there expertise into the clinic and did not have sufficient data for patient matching

HEALTH IMPACT AT STUDENT-LED CLINICS



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FINANCIAL IMPACT OF CHWS AT STUDENT-LED CLINICS

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FINANCIAL IMPACT OF CHWS

ASSUMPTIONS

- **$957.92** = Per patient cost change <7% A1C
- **$722.34** = Per patient cost change >7% A1C
- **$50,000** = Annual cost per CHW
- **100 patients** = Number of patients per CHW/year

FINANCIAL ANALYSIS

	Rose Park	South Main
Health Outcome		
Patients <7% A1c	22	50
Patients >7% A1c	51	102
Total Patients	**73**	**152**
Associated Cost Savings		
Cost Saving <7%	$21,074.13	$47.895.76
Cost Saving >7%	$36,839.39	$73,678.77
Total Cost Savings	**$57,913.52**	**$121,574.53**
ROI	**$1.16**	**$1.60**

FINANCIAL IMPACT OF CHWS AT SLCS

ASSUMING

- $957.92 = Per patient cost change <7% A1C
- $722.34 = Per patient cost change >7% A1C
- $50,000 = Annual cost per CHW
- 100 patients = Number of patients per CHW/year

EXPECTED

- **$1.16 ROI (16%) for patients seen at Rose Park**
- **$1.60 ROI (60%) for patients seen at South Main**

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OVERALL IMPACT OF CHWS AT SLCS

Why improved ROI?

Demonstrated savings through cost avoidance of unplanned acute care utilization…

- Decrease in inappropriate emergency department visits
- Fewer inpatient hospital admissions
- Improved health in the populations served (preventive care)

THANK YOU

Kamaile Tripp-Harris

Kamaile Tripp-Harris, a Native Hawaiian, is a Community Health Worker Coordinator for the Office of Health, Equity, Diversity, and Inclusion at the Spencer Fox Eccles School of Medicine at the University of Utah. She is also a Health Equity Consultant in the Division of Public Health in the Department of Family & Preventive Medicine. Tripp-Harris is co-host and producer of the Island Wave Podcast with a mission to collect all the Pacific Islander experiences of Utah and build a bridge to the broader community. She is completing a BS in health and human services at Western Governors University.

THANK YOU

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