The Mississippi Delta Clinical Community Health Worker Initiative

Recruitment and Retention of Community Health Workers in Rural Settings

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Many Faces Conference
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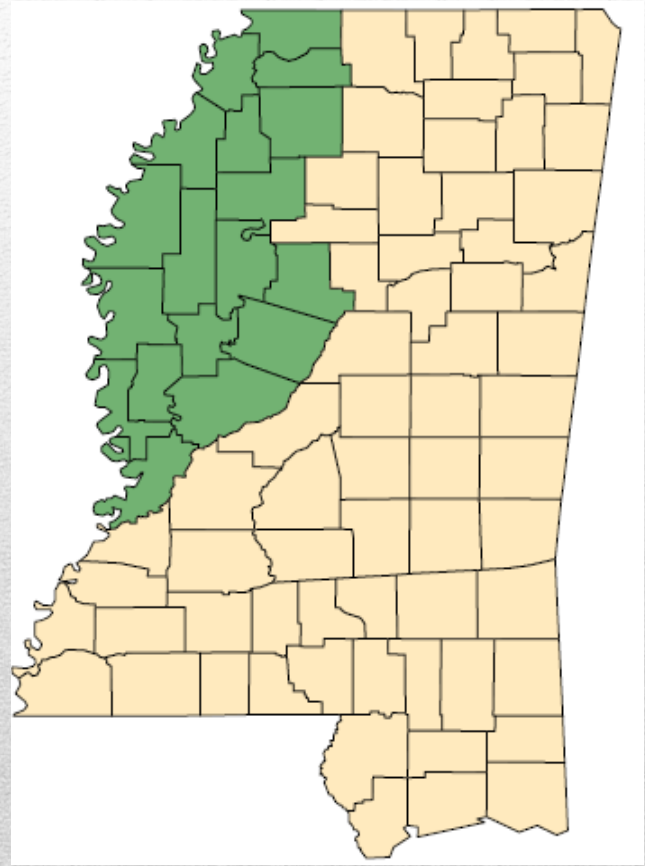
Outline

- Background
- Objectives of CCHWI
- Design and Methods
- Preliminary Findings
- Lessons Learned
- Summary

Mississippi Delta Region

- **50% African-American (Range: 22%-83%)**
  - Mississippi: 37%
  - U.S.: 13%
- **33% below poverty level (Range: 9-48%)**
  - Mississippi: 22%
  - U.S.: 14%
- **29% < HS education (Range: 13-40%)**
  - Mississippi: 21%
  - U.S.: 15%
- **Medically Underserved Area**[1]



[1] Health Resources and Services Administration (HRSA): http://muafind.hrsa.gov/

MS Delta Health Collaborative

The Mississippi State Department of Health received funding from the CDC Division for Heart Disease and Stroke Prevention in 2010 to:

- Implement evidenced-based heart disease and stroke prevention interventions to reduce morbidity, mortality, and related health disparities in the 18 county MS Delta region (*MS Delta Health Collaborative*[1])

[1] MSDH: http://msdh.ms.gov/msdhsite/_static/44,0,372.html

Delta Health Collaborative

- Provides leadership in the 18-County Delta Region to reduce disparities related to heart disease and stroke prevention by addressing the ABCS:
  - **Aspirin:** Increase low dose aspirin therapy according to recognized guidelines
    A1C: Monitor and control blood glucose (Hemoglobin A1c)
  - **Blood pressure:** Prevent and control high blood pressure
  - **Cholesterol:** Prevent and control high LDL-cholesterol
  - **Smoking:** Prevent initiation and increase cessation of smoking, and increase the percentage of population protected by smoke-free air laws or regulations.

Mississippi Delta Health Collaborative
Evidenced Based Interventions

1. Clinical Community Health Worker Initiative
2. Medication Therapy Management
3. Policy, Systems and Environmental Change through Mayoral Health Councils and County Planning and Development Councils
4. Delta Alliance for Congregational Health/ABCS Screening Program
5. Barbershop Hypertension Reduction Initiative
6. Cardiovascular Health Examination Survey




Clinical Community Health Worker Initiative

Clinical Community Health Worker Initiative Objectives

- Serve as a liaison/linkage between the patient and the healthcare provider to facilitate continued care and management of the ABCS (Hemoglobin A1c, Blood Pressure, Cholesterol, and Smoking) of heart disease and stroke.
- Serve as a capacity builder to increase the community's health awareness through outreach activities related to advocacy, health promotion, and prevention, and to provide informal ABCS self management health education.

Community Health Workers

Training of Community Health Workers

- Initial training : 160 hours - Texas Core Training Model
- Follow up training: 56 hours - Global Community Health Worker Training Curriculum (Basics for Cardiovascular Risk Reduction
- Delta Health Collaborative Training (Clinical Nurse & Nurse Consultant): 32 hours – material from CDC Community Health Worker's Sourcebook, ABCD Community Health Worker Train the Trainer Program

Community Health Workers and Health Systems

- Increase the reach of the health system
- Allow clients to receive more in-depth services
- Increase the diversity of providers
- Allow for the rapid expansion of the health workforce
- Increase access to the health system for clients
- Improve the cultural competence/cultural humility of providers (clinicians, nurses, etc.)
- Train clients to better understand the health system and become self advocates

Sustainability

- Critical role of Delta Health Collaborative is to work with all partners to ensure sustainability of this role in the public health
- Supporting the culture at agencies, FQHCs, Hospitals, health departments, to value this role and integrate the role into their policies and procedures
- Co-convening CHW networks to foster networking, professional development, collaboration and engagement in the advocacy process

Recruitment & Retention

- Sites require ongoing support on supervision and retention of CHWs.
- Provide support to organizations with recruitment of CHWs.
- Along with providing advice and opportunity for CHW personal and professional development

Processes for recruitment of healthcare systems and patients

MDHC Recruit Provider/Healthcare System

1. District Medical Officer and other DHC leadership visited FQHCs and RHCs across the
2. MDHC recruited eleven clinic sites from the MS Delta
3. Currently, five healthcare systems are referring patients
4. Sign Memorandum of Agreement and/or Business User Agreement

Data Entry Clerk (DEC) Recruit Patients

DEC recruit patients by utilizing the following methods:

- Chart review
- EHR registry
- Provider or Pharmacist recommendation
- Social Worker
- Word of mouth
- DEC/Outreach worker recruits patients from community events (screenings, door to door, etc.)

Obtain informed consent and authorization to release medical information from patients willing to participate in the Initiative.

Eligibility Criteria

Inclusion Criteria

- Non-institutionalized adults 18 years older residing in the 18 county Mississippi Delta region
- Patients with on ICD-9 Code listed below: Diagnosis/ICD-9 Codes: (uncontrolled)

  Hypertension (HTN): 401.0 – 404.9

  Diabetes Mellitus (DM): 250.0 – 250.99 with HbA1c >= 7

  Dyslipidemia: 272.0 – 272.9
- Patients who has had at least one (1) visit in the past 12 months
- Referred by participating healthcare system

Exclusion Criteria

- Homeless persons
- Persons with acute mental illness
- Persons who cannot legally sign a consent

STAFF ROLES

Data Entry Clerk

- Recruit eligible patients to the Initiative
- Enter patient's clinical data (contact information, demographics, medical information, and lab results) into a password protected MDHC web-based portal to be accessed by MDHC clinical staff
- Update patient clinical information and labs every three months

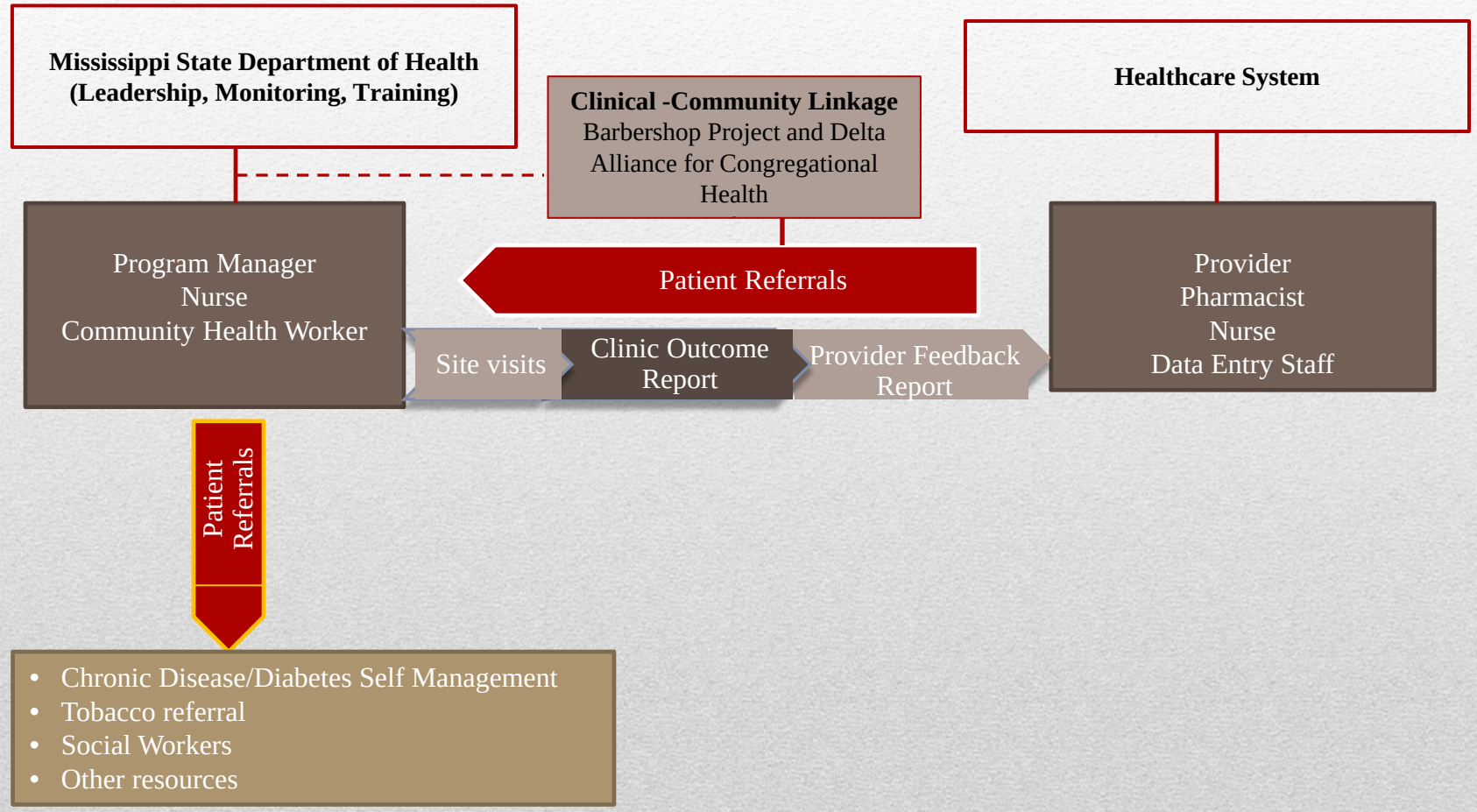
Community Health Worker

- Contacts the patient to schedule initial home visit.
- Complete encounter forms, enter data on the MDHC password protected computer, provide educational materials.
- Conduct physical measures
- During phone calls and in-home visits, the CHW provide informal counseling regarding health behavior and lifestyle modification, encourage compliance with individual treatment plans, provide self-management training, and serve as an interpreter of health information to the patient and healthcare provider.
- Notify MDHC Nurse of patients with elevated blood pressure and glucose measures during home visits
- Document and report environmental or social concerns
- Conduct follow up

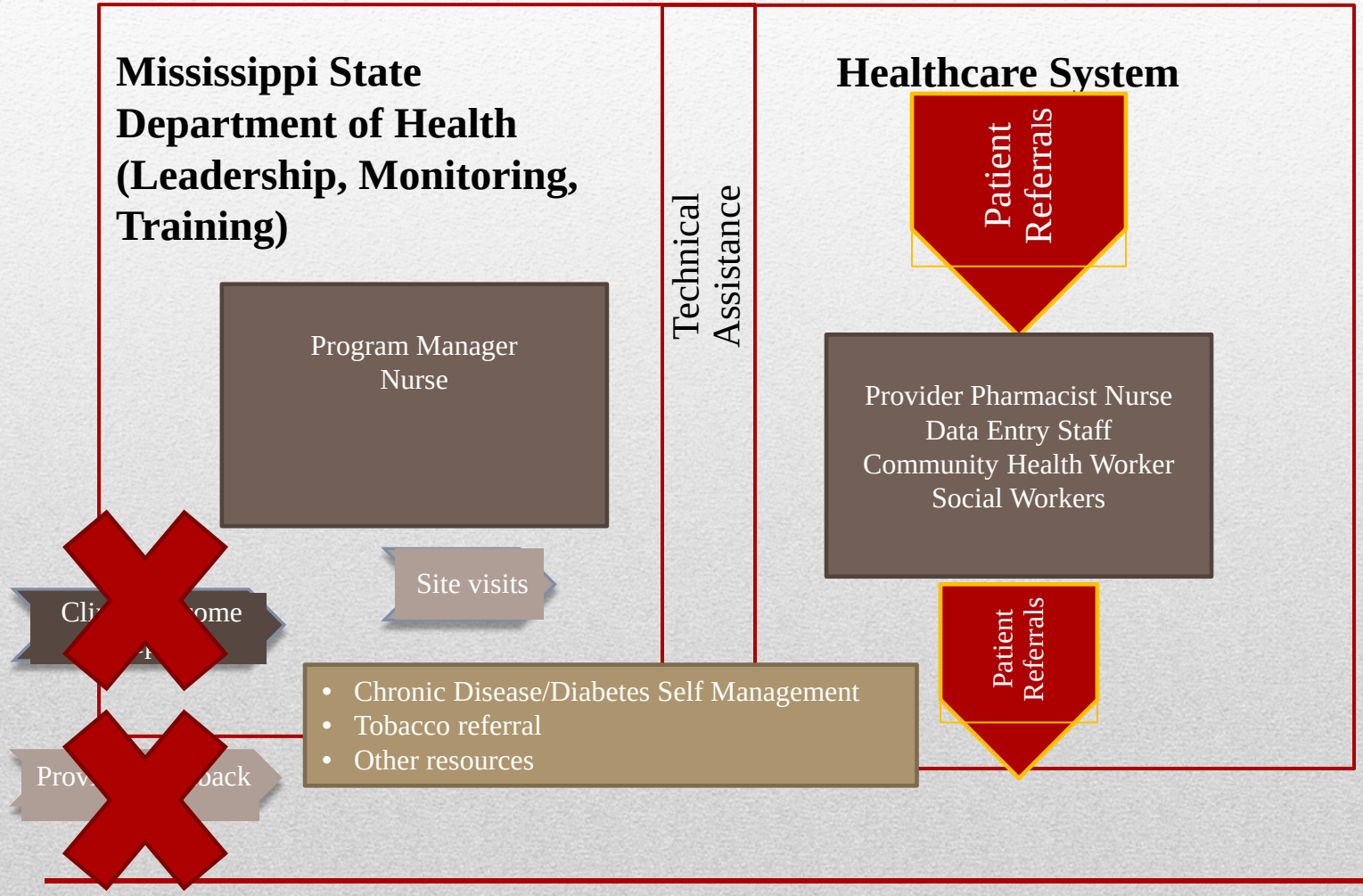
MDHC Nurse

- Review CHW schedules to ensure visits meet encounter protocol
- Notify health care systems of patients with elevated blood pressure and glucose measures during home visits
- Ensure follow up

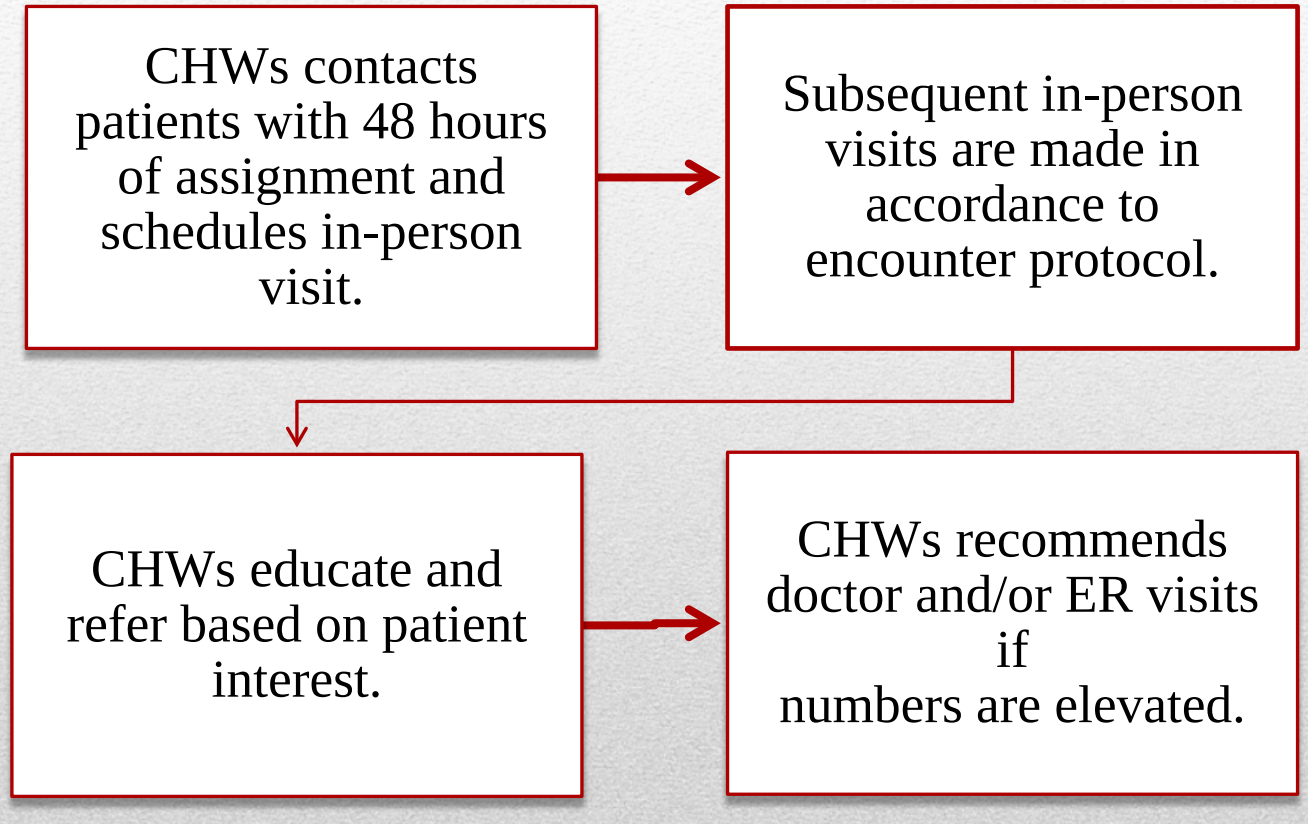
MS Delta Health Collaborative Clinical Community Health Worker Initiative Framework



Integrated Clinical Community Health Worker Initiative to Health Care Systems



Overview of CCHWI Steps



CHW Home Visit

- CHWs interview and educate on patient diagnosis. The visit is centered around the following domains:
  - Patient's health
  - Medical history
  - Lifestyles/behaviors
  - Current medications
  - Smoking cessations
  - Educating the patient
- The home visit takes about one hour
- CHWs Follow up

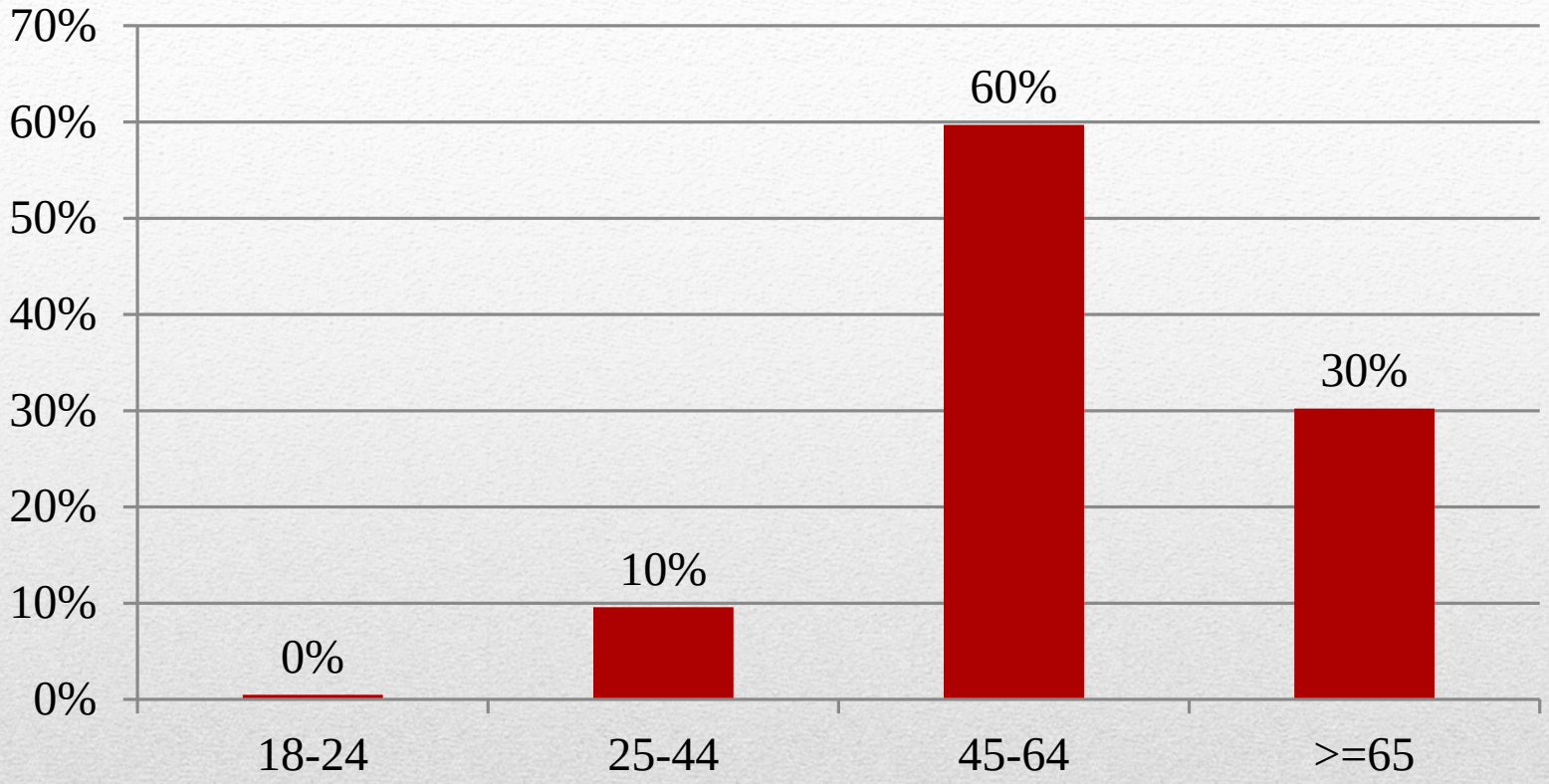
Preliminary Results

Table 2. Clinical diagnosis based on ICD 9 codes, N=407		
	N	%
Hypertension	352	86.5
Diabetes	287	70.5
Dyslipidemia	271	66.6

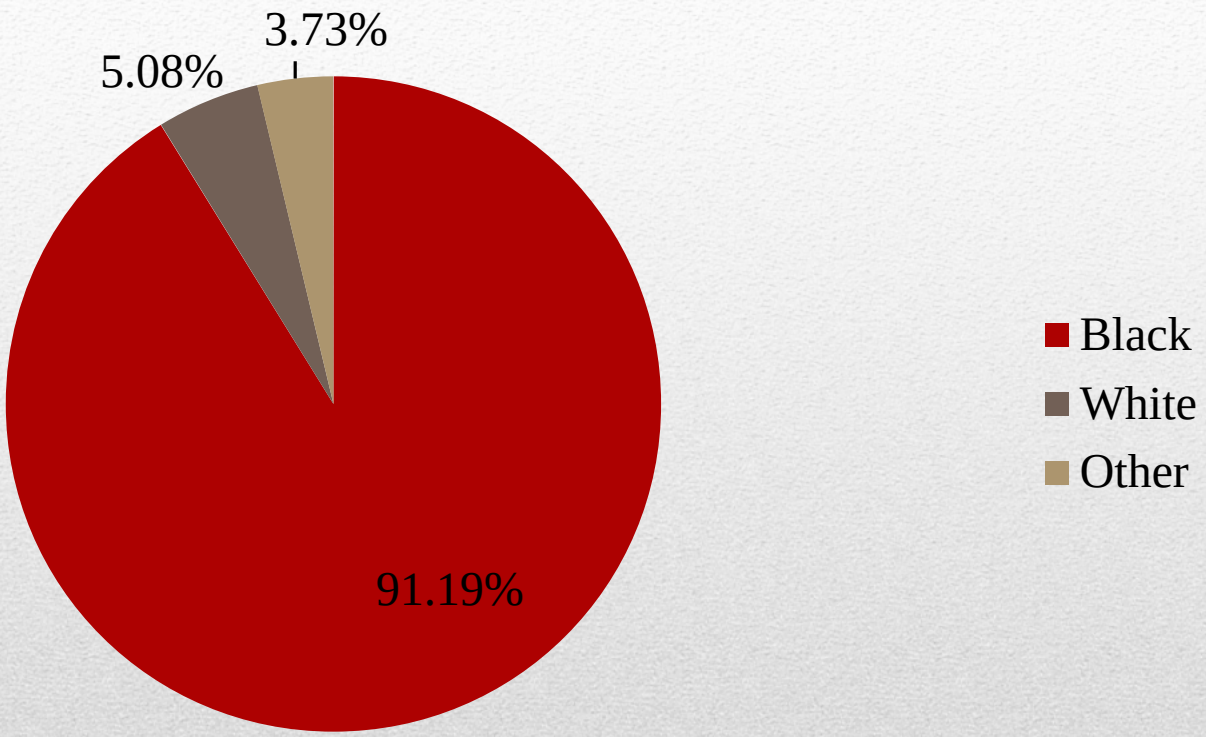
Clinical Diagnosis

Table 3. Comorbid hypertension, diabetes, and dyslipidemia among CCHWI participants, August, 2012 – April, 2015		
	N	%
One condition only	56	13.8
Two conditions only	199	48.9
All three conditions	152	37.4
Total	407	

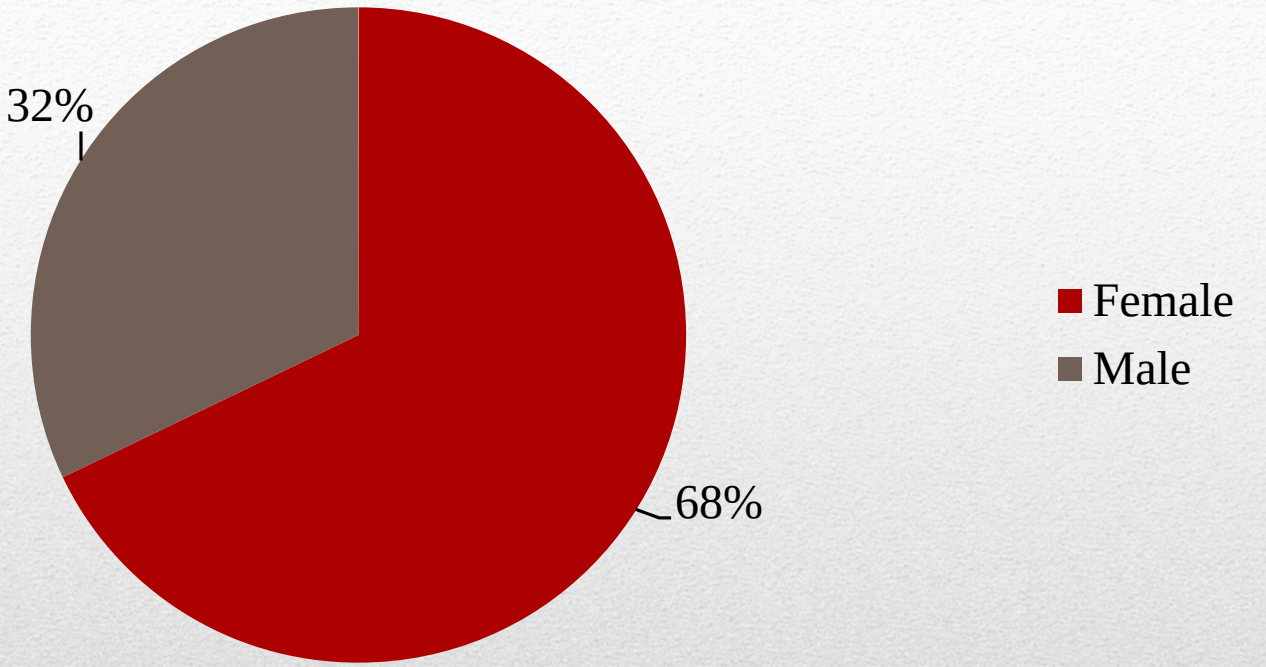
Comorbid Conditions



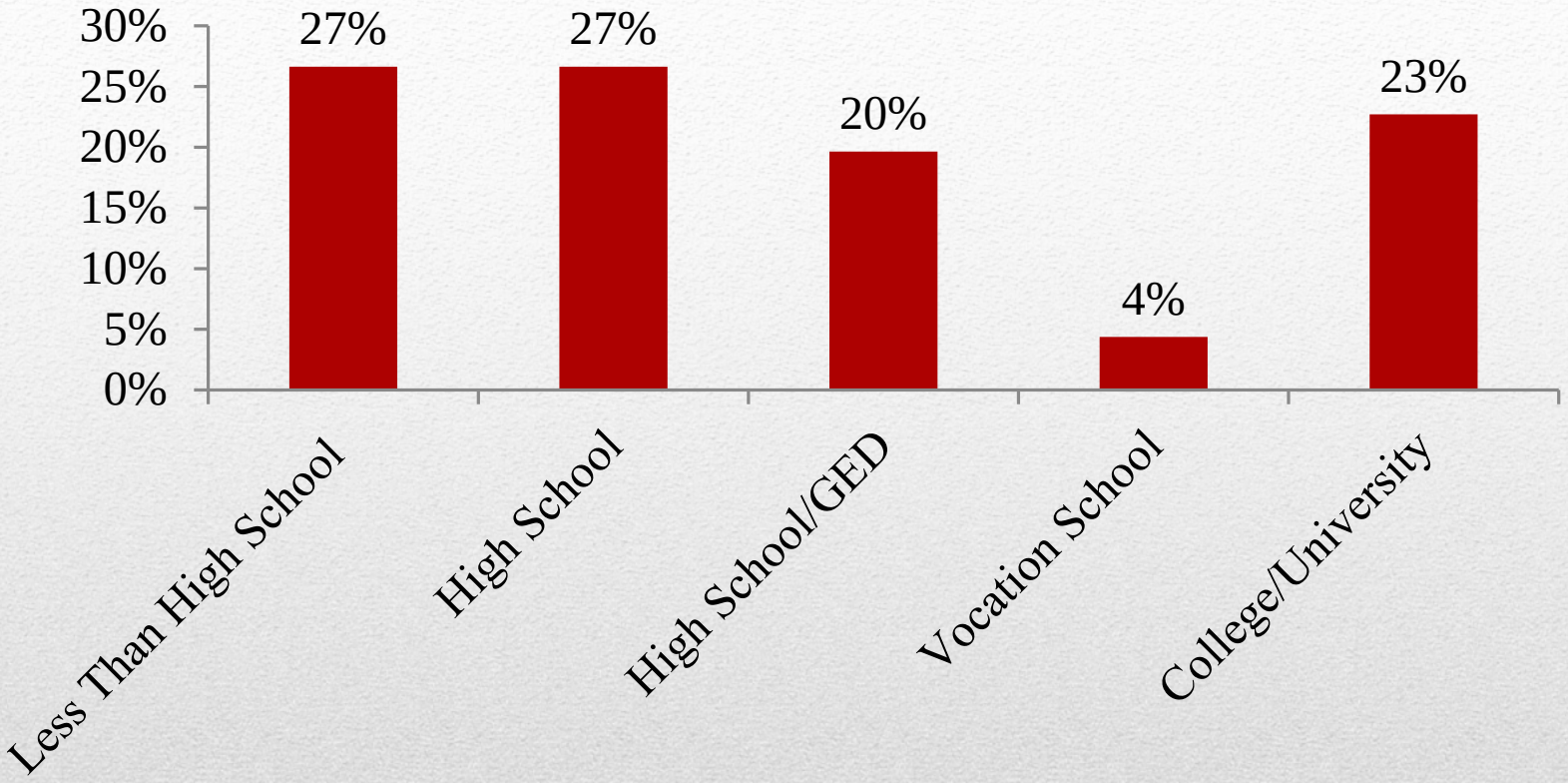
Age Group, Years



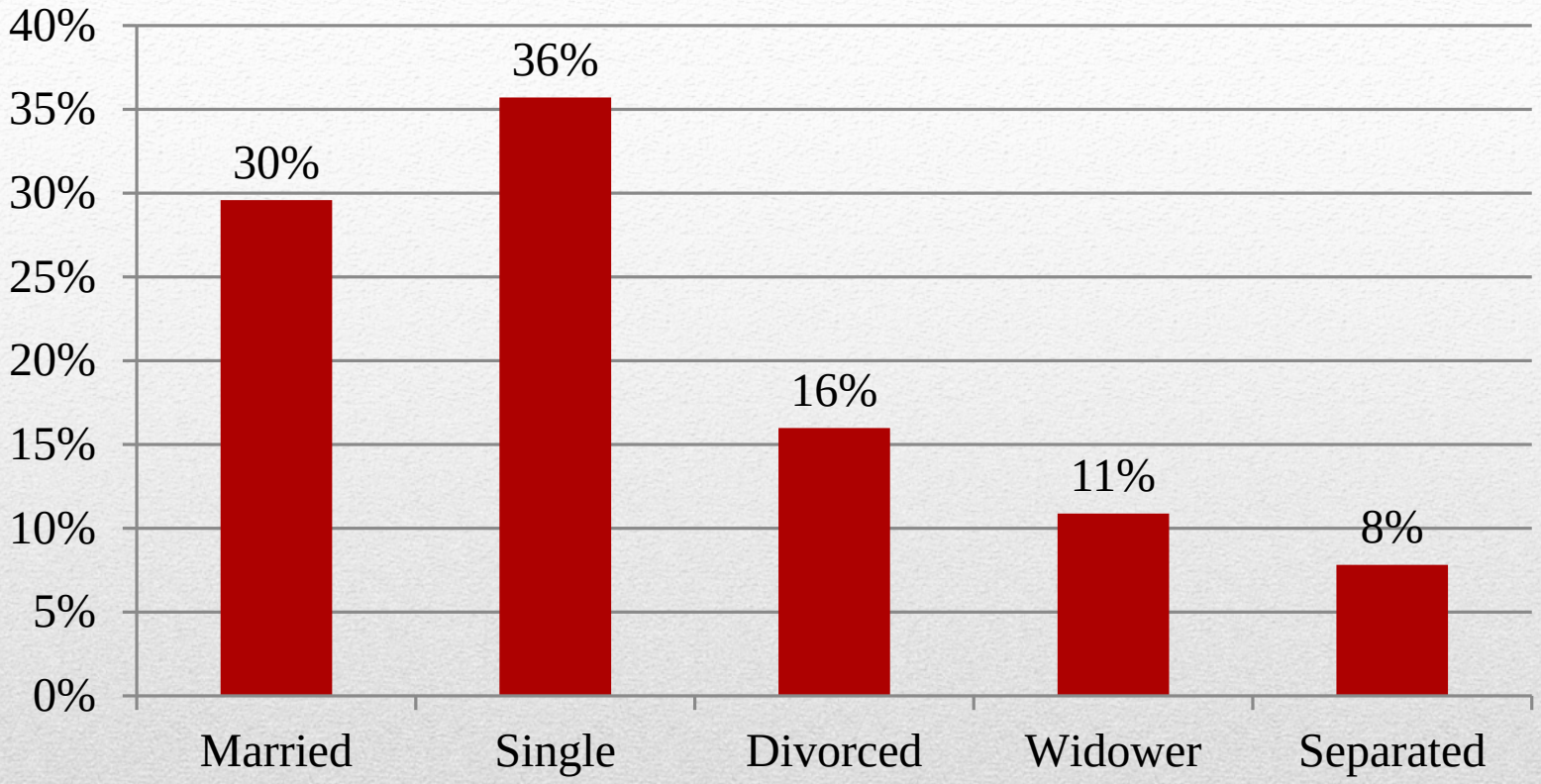
Race



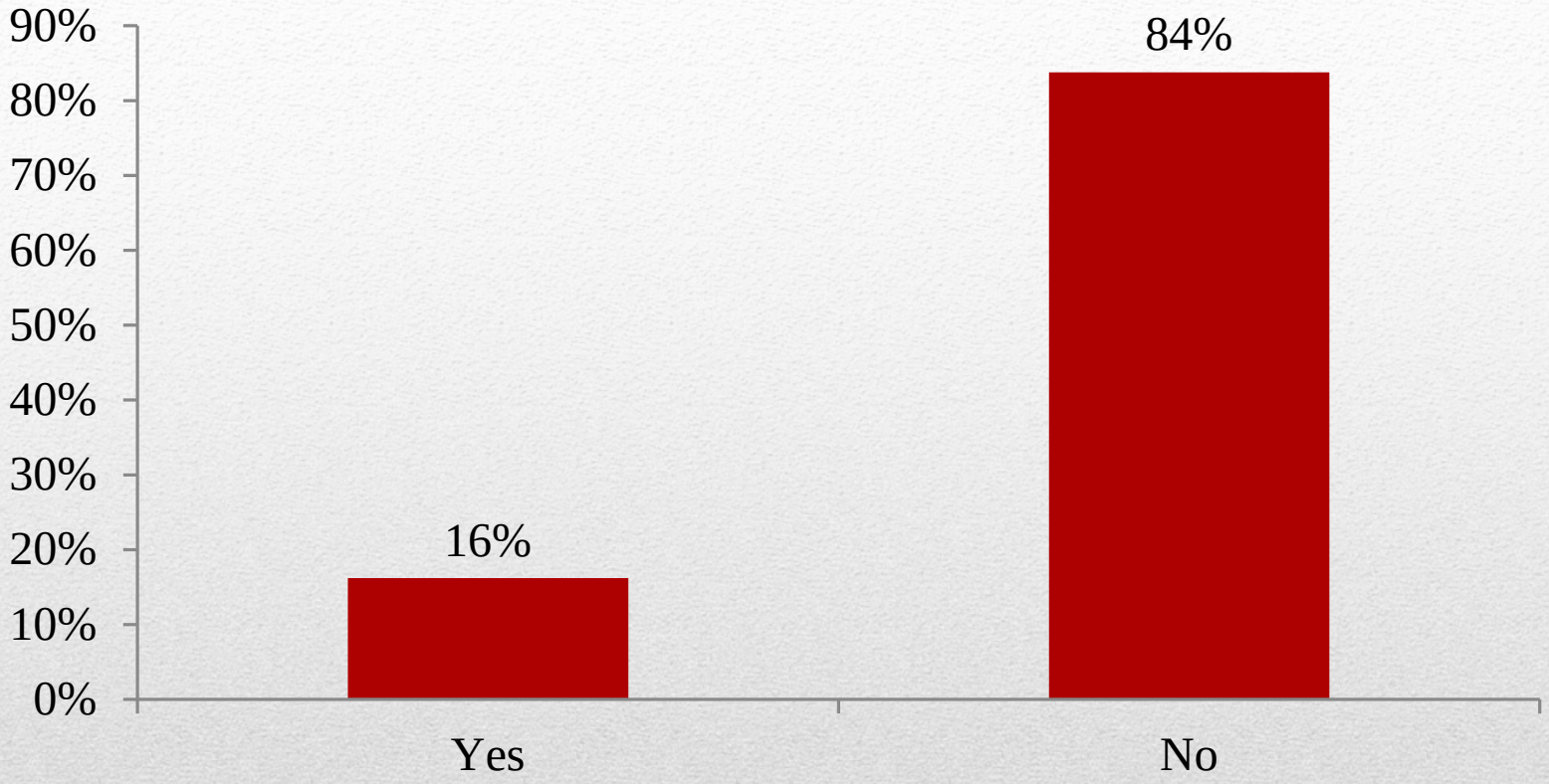
Gender



Educational Level



Marital Status



Smoking/Tobacco Use

Proportion of CCHWI participants at goal at baseline and update, August, 2012 – April, 2015				
Controlled (at goal)	**Initial**		**Most recent (update)**	
	n	%	n	%
HbA1C <7%	**60/290**	**20.69**	**50/203**	**24.63**
Hypertensive/blood pressure <140/90 mm Hg	**163/403**	**40.45**	**163/354**	**46.05**
Diabetic and blood pressure <130/80 mm Hg	83/403	20.60	69/354	19.49
LDL cholesterol <100 mg/dL	**105/303**	**34.65**	**69/158**	**43.67**
Total cholesterol <200 mg/dL	**159/325**	**48.92**	**105/162**	**64.81**
HDL cholesterol Men >40 mg/dL	44/315	13.97	19/161	11.80
HDL cholesterol Women >50, mg/dL	80/315	25.40	36/161	22.36
Triglycerides <150 mg/dL	**174/319**	**54.55**	**96/161**	**59.63**
BMI <25.0 kg/m^2	41/331	12.39	36/348	10.34

SD: standard deviation; HDL: high density lipoprotein; LDL: low density lipoprotein; BMI: body mass index; HbA1c: hemoglobin A1c; BUN: blood urea nitrogen

Table 5. Mean changes in clinical outcomes from baseline to most recent value, August, 2012 – April, 2015, N=407

Characteristic	N	Initial mean	Most Recent mean	Change	p-value**	% Relative reduction
Hemoglobin A1c (%)	186	9.1	8.8	-0.3	0.1209	3.4
Systolic blood pressure, mm Hg	350	138.5	136.6	-1.9	0.1096	1.4
Diastolic blood pressure, mm Hg	350	79.5	77.4	-2.1	0.0166	2.7
Total cholesterol, mg/dL	140	207.6	193.1	-14.5	0.0020	7.5
High-density lipoprotein (HDL), mg/dL	136	49.5	50.6	+1.5	0.1937	-
Low-density lipoprotein (LDL), mg/dL	129	120.6	111.3	-9.3	0.0277	8.4
Triglyceride, mg/dL	137	186.7	166.9	-19.8	0.0753	11.9

***statistically significant mean changes (baseline vs most recent value) was observed for diastolic blood pressure, total cholesterol, Low-density lipoprotein**

**** Paired t-tests**

Table 6. Mean changes in clinical outcomes from baseline to most recent value, Active patients, August, 2012 – April, 2014, N=337

Characteristic	N	Initial mean	Most Recent mean	Change	p-value**	% Relative reduction
Hemoglobin A1c (%)	147	9.2	8.9	-0.3	0.1173	3.4
Systolic blood pressure, mm Hg	287	138.5	137.4	-1.1	0.3879	
Diastolic blood pressure, mm Hg	287	79.6	78.3	-1.3	0.1074	1.7
Total cholesterol, mg/dL	112	205.0	191.0	-14.0	0.0074	7.3
High-density lipoprotein (HDL), mg/dL	108	49.2	50.2	+1.0	0.3000	-
Low-density lipoprotein (LDL), mg/dL	103	118.9	110.5	-8.4	0.0736	7.6
Triglyceride, mg/dL	109	184.1	163.4	-20.7	0.1172	12.7

*statistically significant mean changes (baseline vs most recent value) was observed for systolic blood pressure, diastolic blood pressure, and total cholesterol

** Paired t-tests

Table 7. Inactive patients, August, 2012 – April, 2015, N=70		
Reasons	N	%
Unable to contact patient after repetitive attempts	28	42.42
Changed to nonparticipating provider	2	3.03
Deceased	4	6.06
Moved out of program service area	2	3.03
Refused further participation	24	36.36
Other reasons	5	7.58
Does not meet program criteria	1	1.52
Total	66	

Inactive Patients

Location of Active Patients

NAME OF CLINIC	AREAS SERVED
Aaron Henry Health Center	Batesville
	Clarksdale
	Tunica
Charleston Rural Health Clinic	Charleston
Delta Health Center	Cleveland
	Greenville
	Moorhead
	Mound Bayou
GA Carmichael Family Medical	Yazoo City
	Humphreys
Greenville Primary Clinic	Greenville
Greenwood Comprehensive Clinic	Greenwood
Jackson Hinds Comprehensive	Vicksburg
Lucas Family Medical	Greenville
North Sunflower Health Clinic	Ruleville
Tutwiler family Medical	Tutwiler

PATIENT REFERRALS

Clinic Sites Referrals (September 2012-August 2015)		
Active Health Care Systems	**Number of Patients Referred**	**Number of Active Patients Assigned to CHW**
Delta Health Center	229	126
G. A. Carmichael Family Health Center	181	86
Greenwood Comprehensive Clinic	65	61
Jackson Hinds Comprehensive	179	80
Lucas Family Medical	238	154
Totals	892	507

- A total of 82 patients are currently active from the following inactive health care systems: Aaron Henry Health Center, Charleston Rural Health Clinic, North Sunflower Health Clinic, Tutwiler Family Medical

CLINICAL AND COMMUNITY LINKAGE: CDSMP and the COMMUNITY HEALTH WORKERS (CHW)

- Use of clinical community health worker model in CDSMP/DSMP
- Patients referred to CHW from clinical providers
- A total of 107 patients have completed CDSMP/DSMP sessions coordinated and facilitated by CHWs

Chronic Disease Self Management and Diabetes Self Management Programs

Community-Clinical Linkages

DACH REFERRALS October 2013 - June 2015				
No. Referred	No. Contacted	No Unable to contact (Due to: no answer after 3 attempts, no telephone number, disconnection, ineligible, and/wrong number	No visited healthcare provider since screening	Referred to CD(D)SMP
395	218	177	128	136

BARBERSHOP REFERRALS October 2014 - June 2015				
No. Referred	No. Contacted	No Unable to contact (Due to: no answer after 3 attempts, no telephone number, disconnection, ineligible, and/wrong number	No visited healthcare provider since screening	Referred to CD(D)SMP
283	120	163	44	10

PATIENT SATISFACTION and Quality assurance SURVEY

- To assess patient's satisfaction and overall participation in the Clinical Community Health Worker Initiative
- Thirty patients (5 per CHW) are contacted to complete the patient satisfaction and quality assurance survey

"I cannot read and I do not have a family member that can help me"

"My worker has showed me better ways to cook and exercise and I have really lost weight"

Field Note from Community Health Worker

SUCCESSES

- Collaborative relationships established with providers in rural areas
- Progress toward integration of CHW into clinical teams
- Preliminary improvement in clinical outcomes

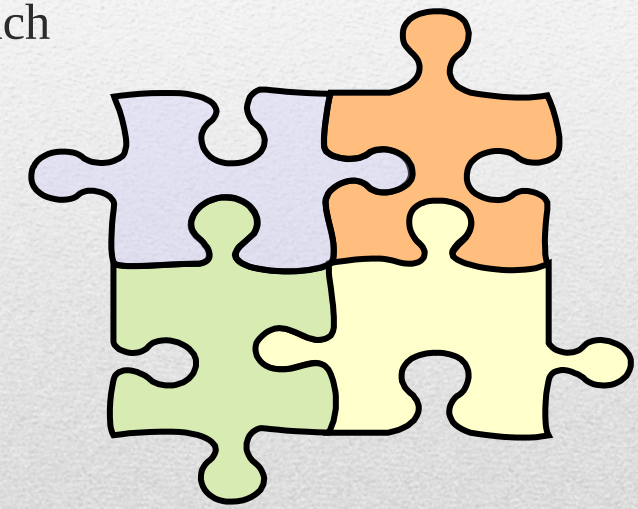
CHALLENGES/BARRIERS

- Incomplete data of lipid profiles
- Low referrals from clinical sites
- Some clinics have not adopted CHW model
- Contact information/loss to follow up

Data to action

Community Health Worker : A Member of the Clinical Healthcare Team

- Building Knowledge and Awareness about CHWs
- Traditional Approach vs. Multidisciplinary Approach
- Interdisciplinary Teams
  - Primary Care Physician
  - Nurse Practitioner
  - Care Manager (Social Worker)
  - Community Health Worker
  - Peer Specialist
  - Pharmacist
  - Mental Health Provider
    (e.g., Social Worker, Psychologist, Psychiatrist)
  - Addictions Professional



Lessons Learned

- The community health worker must reside in and/or be knowledgeable about the community they serve.
- Patient participation and retention in the program was higher, when clinic providers played an active role in program recruitment, referral and monitoring.
- Immediate notification from the nurse and community health worker to healthcare providers of patients with elevated values during home visits fosters a positive linkage between health care systems and the patient.
- Regular attendance of community health workers in healthcare systems staff meetings promoted integration of community health worker to clinical team.
- Using MDHC CCHW model, CHWI activities must be the primary duty of the clinic DEC

Presentations and Acknowledgments

- *Walls T, Bilbro A, Cole A, Dove C, Mendy V* . Role of Community Health Workers for Clinical Systems: The Mississippi Delta Clinical Community Health Worker Initiative. *Cardiovascular Disease Reduction: Lessons Learned from the Mississippi Delta Health Collaborative*. American Public Health Association . Panel. (November 2015) (Chicago, IL)
- *Walls T, Bilbro A, Cole A, Dove C, Mendy V* . Role of Community Health Workers in Heart Disease and Stroke Prevention: Lessons Learned from the Mississippi Delta Health Collaboration Clinical. Poster presentation at the Unity Conference (Memphis, TN) (July 2015)
- *Dove C, Hawkins J, Walls T, Bilbro A, Mendy V.* Reducing heart disease and stroke in the Mississippi Delta through community and clinical linkages. Presented at the Xavier University Health Disparities Conference (March 2014)
- *Walls T, Bilbro A, Cole A, Dove C.* Clinical Community Health Worker Initiative: Improving Health Outcomes With A Team-Based Approach
  - Oral presentation at the 79th Mississippi Academy of Sciences Conference (Hattiesburg, MS) (February 2015)
  - Poster presentation at the 8th Annual Health Disparities Meeting (New Orleans, LA) (March 2015)
  - Poster presentation 48th Annual Society for Epidemiologic Research (SER) (June 2015) (Denver, CO)
  - Million Hearts Stakeholder Meeting (August 2015)

THANK YOU

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Million Hearts ABCS Goals vs. CCHWI

Intervention	Baseline (2009-2010)	2017 Population wide goal	2017 Clinical target	CCHWI ABCS Status
People at increased risk of cardiovascular events who are taking Aspirin	47%	65%	70%	29.5%*
People with hypertension who have adequately controlled Blood pressure	46%	65%	70%	46.5%**
People with high Cholesterol who are effectively managed	33%	65%	70%	43.7%[t]
People trying to quit Smoking who get help	23%	65%	70%	12.5%[§]

*Diagnosed with HTN, T2DM, or Dyslipidemia and prescribed aspirin
**Diagnosed with HTN and BP<140/90 mm Hg
[t]Diagnosed with Dyslipidemia and LDL-C <100 mg/dL
[§]Proportion of smokers who participated in a program to them quit using tobacco products

Valderrama AL, et al., MMWR. 2011;60 (36):1248-51