VA HSR&D PACT CYBERSEMINAR

EFFECTS OF EARLY IMPLEMENTATION OF CLINICAL RESOURCE HUBS ON PRIMARY CARE QUALITY

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DISCLOSURES & FUNDING

Dr. Reddy has **no disclosures to report**. He is funded by the VA Primary Care Analytics Team, VA's HSR&D, and received a career development award from AHRQ.

Dr. Wheat has **no disclosures to report**. She is funded by the VA Primary Care Analytics Team (PCAT).

DISCLAIMER

The views expressed are those of the presenters and **do not necessarily reflect the position or policy of the VA or the US government**

OUTLINE OF PRESENTATION

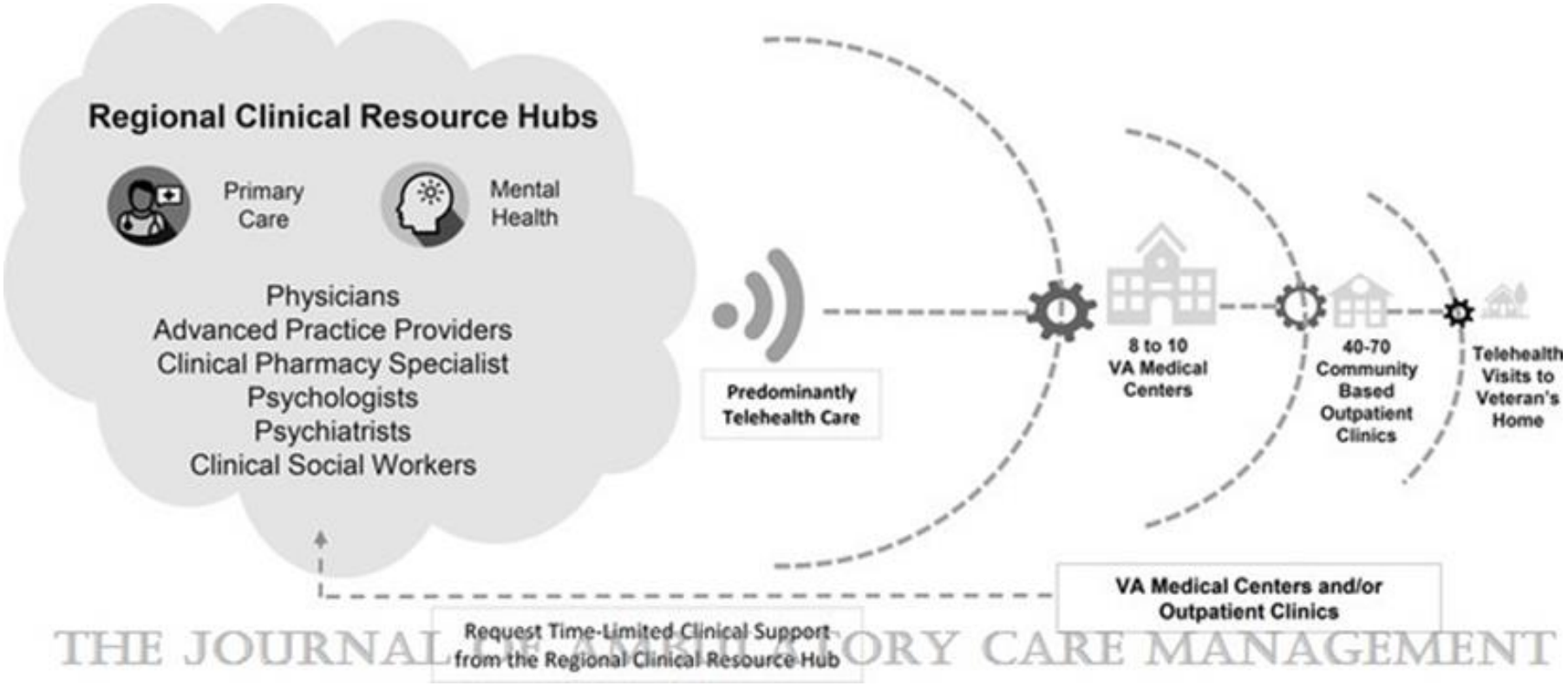
1. Describe the VA's national Clinical Resource Hub (CRH) initiative
2. Provide overview of CRH and relationship with primary care
3. Summarize study design and results from the evaluation of CRH and primary care quality
4. Discuss next steps in the quality evaluation

CLINICAL RESOURCE HUBS – AN INTERVENTION TO ADDRESS STAFF SHORTAGES & IMPROVE PRIMARY CARE ACCESS

- VA is experiencing a shortage of primary care providers
- Shortage contributes to declines in Veteran access to primary care, especially in rural and other underserved areas
- National CRH program launched in 2019 as part of VA's response to the MISSION Act
- CRH is a regional, primarily telehealth intervention that provides primary care and other services including mental health and specialty care using a Hub and Spoke model[1]

[1] Burnett, K et al (2023). The Clinical Resource Hub Initiative First Year Implementation of the Veterans Health Administration Regional Telehealth Contingency Staffing Program. *J Ambul Care Manage, 46(3)*, 228 239.

CRH USES A HUB & SPOKE MODEL TO DELIVER CARE



WHAT IS A CLINICAL RESOURCE HUB?

- VISN-level directed resource that provide primary care, mental health, and specialty staffing
- Each VISN employs providers and staff for the Hub
- Hubs deliver mostly virtual care synchronously to clinics not located near the Hub

WHAT IS A SPOKE SITE?

- A clinic experiencing a staffing deficit that is approved to receive Hub clinical services (can be either VAMC or CBOC)

- Care provided by the Hub via telephone, video to the clinic, video to the Veteran's home, or in-person when a mobile deployment team has been sent

- Type of care provided is primary care, mental health care, pharmacy services, or specialty care

WHAT IS PRIMARY CARE?

Definition:

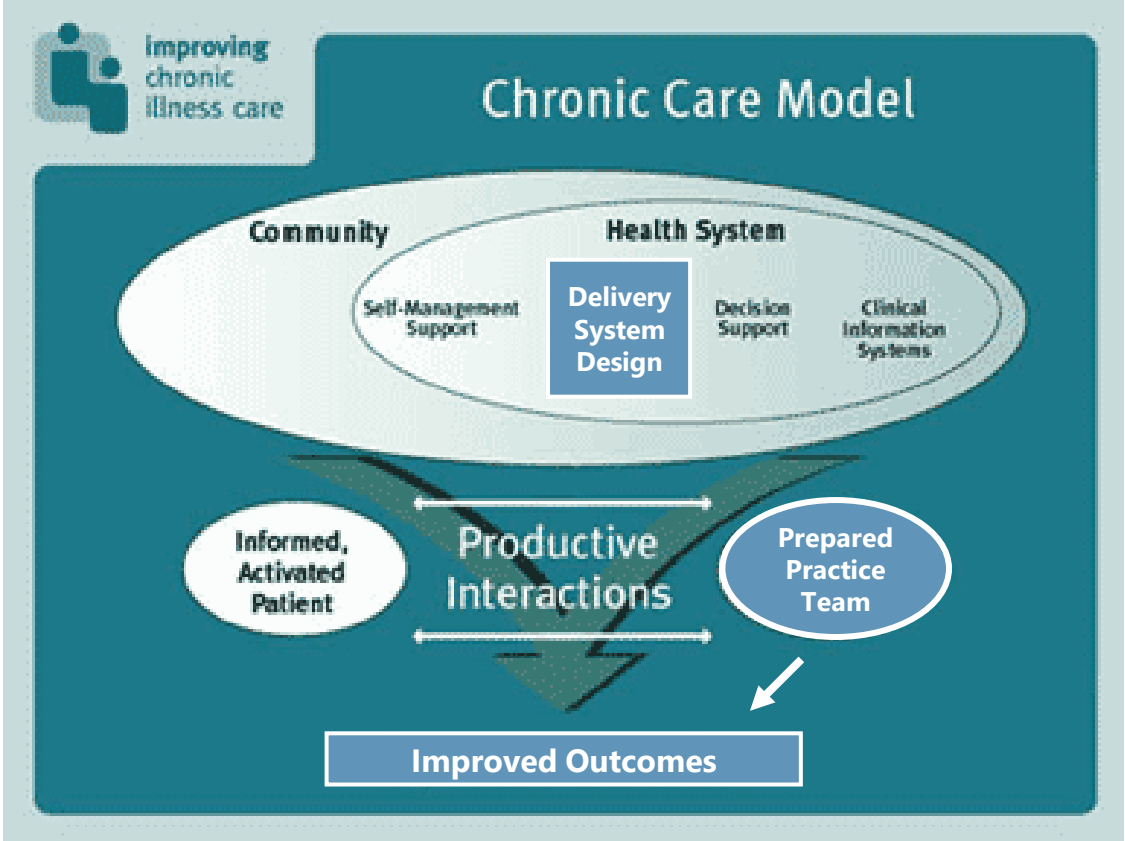
- High-quality primary care is the provision of whole-person, integrated, accessible, and equitable health care by interprofessional teams
- Interprofessional teams are accountable for addressing the majority of an individual's health and wellness needs across settings and through sustained relationships with patients, families, and communities

Starfields 4 C's: First contact, continuity, comprehensive, and coordinated care

National Academies of Sciences, Engineering, and Medicine. 2021. Implementing High Quality Primary Care: Rebuilding the Foundation of Health Care. Washington, DC: The National Academies Press. https://doi.org/10.17226/25983.

RELATIONSHIP OF CRH, PRIMARY CARE, & QUALITY

- CRH is a **(delivery system)** change to deal with loss or limited primary care supply
- CRH provides a primary care team **(practice team)** to care for veterans



CRH AND PRIMARY CARE QUALITY – OBJECTIVES

CRH has important implications for quality of primary care delivery

- May improve access but will telehealth services provide sufficient continuity, coordinated, or comprehensive care?
- Will CRH services increase or decrease disparities in primary care quality?

EVIDENCE ON TELEHEALTH & QUALITY OF CARE

Prior evidence shows that telehealth for primary care is mixed:

The rise in virtual care has led to a growing body of research reporting positive outcomes, including:

- high patient satisfaction[7,8]
- reduced travel costs[9]
- the successful management of chronic conditions from a distance[10]

However, virtual care maybe also related to lower quality of care

- Increased ambulatory sensitivity conditions[11]
- Higher rates of unnecessary prescriptions of antibiotics[12]

7. Andrews E et al. Satisfaction with the use of telehealth during COVID-19: An integrative review. International Journal of Nursing Studies Advances. 2020;2:100008.
8. Nguyen M et al. A review of patient and provider satisfaction with telemedicine. Current Allergy and Asthma Reports. 2020;20(11):1-7.
9. Snoswell CL et al. Determining if Telehealth Can Reduce Health System Costs: Scoping Review. Journal of Medical Internet Research. 2020;22(10):e17298.
10. Aubert CE et al. Type 2 diabetes management, control and outcomes during the COVID-19 pandemic in older US veterans: An observational study. JGIM. 2022;37(4):870-877.
11. Li et al. Association between Primary Care Practice Telehealth Use and Acute Care Visits for Ambulatory Care-Sensitive Conditions During COVID-19. JNO. 2022
12. Shi, Zhuo, et al. "Quality of care for acute respiratory infections during direct-to-consumer telemedicine visits for adults." Health Affairs 37.12 (2018): 2014-2023.

SEVERAL GAPS IN OUR KNOWLEDGE OF EFFECTIVENESS OF TELEHEALTH & PRIMARY CARE

Telehealth services have expanded dramatically and has remained high

- Increase access to services – but mixed results

Telehealth evidence is often used for specific clinical scenarios

CRH is a primary care intervention not limited to a specific disease protocol

Equity issues

- On one hand may decrease barriers (geographic, transportation)
- On the other may be more difficult to access (language, age/digital literacy)

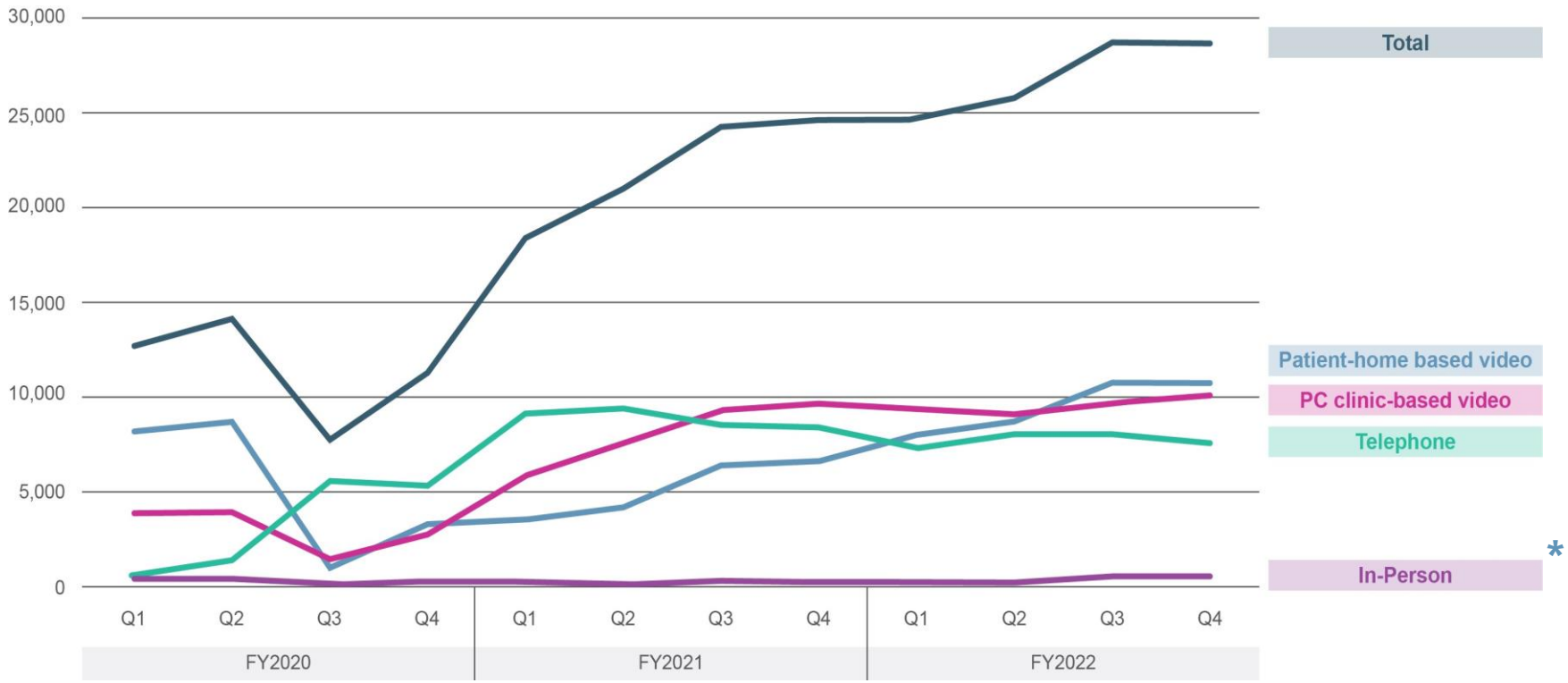
CLINICAL RESOURCE HUB NATIONAL EVALUATION[2]

- Evaluation coordinated by the Primary Care Analytics Team (PCAT) in Seattle
- The overall design of the evaluation is based on RE-AIM framework by Glasgow and colleagues
  - Reach, Effectiveness, Adoption, Implementation, and Maintenance
- Five CRH Evaluation Component Teams:
  - Implementation (Patient and provider experience)
  - Access to care
  - Cost and Utilization
  - **Quality of Care (effectiveness and maintenance)**
  - Mental Health Care

[2] Rubenstein et al (2023). Learning from national implementation of the Veterans Affairs Clinical Resource Hub (CRH) program for improving access to care: protocol for a six year evaluation. *BMC Health Serv Res. 23,790.*

CRH PRIMARY CARE

CRH PRIMARY CARE VISITS HAVE INCREASED SINCE IMPLEMENTATION



*CRH provided limited in person care

CRH PC IS CARING FOR MANY TYPES OF VETERANS

	N = 142,041 Mean (SD) or %
Age (years)	70 (14)
Female Gender	6.8
Race/Ethnicity[#]	
American Indian/Alaska Native	1.2
Asian/Pacific Islander/Native Hawaiian	1.7
Hispanic	6.4
Multi-Race/Other	1.9
Non-Hispanic Black	10.5
Non-Hispanic White	73.8
Veteran Rurality	
Urban	43.6
Rural/Highly Rural	56.4
Number of CRH Encounters	
1	15.3
2	50.4
3	6.4
4	27.9

Liu T, Wheat C, Rojas J, Nelson K, Reddy A. Understanding How Clinical Resource Hubs Support Primary Care Services in the Veterans Health Administration. Abstract poster presentation, 2023 Academy Health Annual Research Meeting, June 2023.

[#]4.7% missing

CRH IS PROVIDING CARE FOR COMMONLY MANAGED PRIMARY CARE CONDITIONS – TOP 5

ICD 10 Description	N	%
Essential (primary) hypertension	36,209	15
Type 2 diabetes mellitus	23,563	9.8
Counseling	15,566	6.4
Hyperlipidemia	8,169	3.4
Low back pain	7,922	3.3

QUALITY EVALUATION

ASSOCIATION OF CRH EARLY IMPLEMENTATION AND PRIMARY CARE QUALITY MEASURES

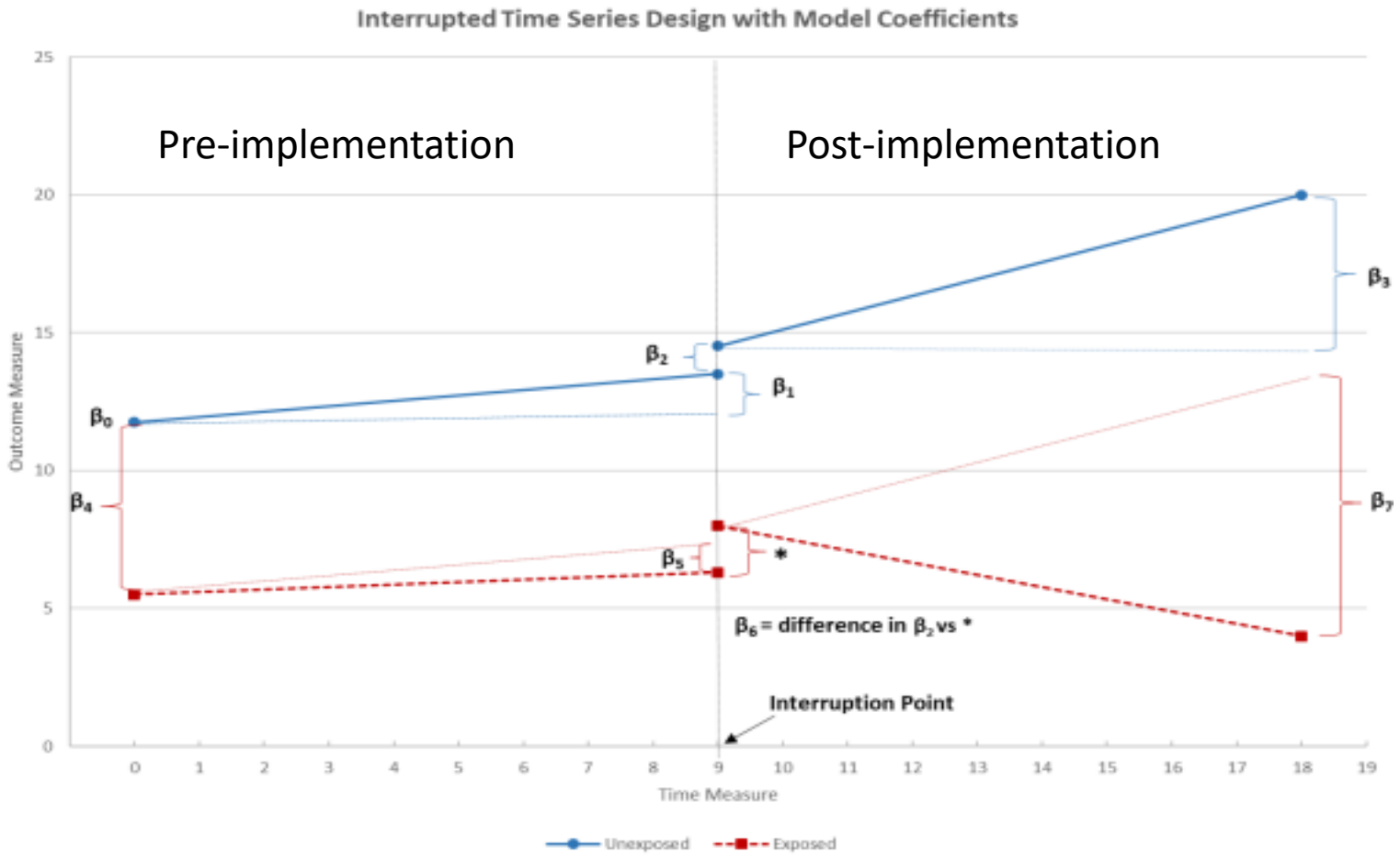
Primary Aim: identify whether chronic and disease preventive care quality measures at clinic sites that implement CRH is similar to sites that did not implement CRH.

Secondary Aim: examine whether these quality measures are similar between clinics that have implemented CRH and those that have not, for sites that serve a high proportion of minority Veterans.

STUDY DESIGN

- Retrospective, observational, longitudinal study
- Propensity matched CRH sites and non-CRH sites to limit potential bias in analysis
  - Facility characteristics
  - Patient characteristics
- Quality metrics evaluated by a comparative interrupted time series (CITS)
- Quality outcomes measured at the monthly level

COMPARATIVE INTERRUPTED TIME SERIES (CITS)



DEFINING CRH SITES

Three categories to define:

1. **CRH engagement**
   - # Veterans at a site with at least 1 CRH visit / # Veterans at a site who are enrolled in primary care (in PCMM)
   - Site is considered an active CRH site if they have a CRH penetration rate > 0% for at least 5 out of 8 quarters across FY20-FY21
2. **CRH activity**
   - Site is considered to have sufficient activity if they have >9 CRH PC visits for 2 consecutive months
3. **CRH site size**
   - Site has to have at least 450 unique Veterans enrolled in PCMM to be included

DEFINING NON-CRH COMPARATOR SITES - CONTROL

Comparator sites defined as having CRH penetration = 0% for the entire observation period

"Propensity score" matched

- Clinic size (very small sites excluded)
- Gap measure before CRH engagement (3-month average)
- Rurality (Proportion of Veterans rural)
- Access measures (3-month averages)
- VISN – exact
- Facility type - exact

PROPENSITY MATCH DETAILS

1:1 match without replacement (optimal matching)

- 703 total sites considered for matching

Total pairs

- 107 non-CRH sites
- 107 CRH sites

Propensity match quality

- Limited imbalances after matching

LIMITED POST MATCH DIFFERENCE IN SITE CHARACTERISTICS

	Non-CRH site, N = 107	CRH site, N = 107	Difference	95% CI	p-value
PC staffing gap	1.28 (0.47)	1.25 (0.29)	0.08	-0.19, 0.35	0.9
Clinic size	6,879 (7,153)	8,178 (6,824)	-0.19	-0.46, 0.08	**0.026**
Facility type			0.00	-0.27, 0.27	>0.9
VAMC	18 / 107 (17%)	18 / 107 (17%)			
CBOC/Other	89 / 107 (83%)	89 / 107 (83%)			
Proportion of rural Veterans	0.52 (0.34)	0.48 (0.35)	0.13	-0.14,0.40	0.2
Average established PC wait time	56.64 (26.10)	60.22 (24.90)	-0.13	-0.40, 0.14	0.3
Average new PC wait time	18.98 (9.60)	20.66 (11.07)	-0.16	-0.43, 0.11	0.3
Average third next available	12.87 (22.22)	13.25 (8.39)	-0.02	-0.29, 0.25	**0.005**

OUTCOME MEASURES

- The VA tracks performance HEDIS/CMS based quality measures using the Electronic Quality Measurement (eQM) platform
  - Disease specific measures that are derived from the electronic health record
- Members of the recent VA and RAND co-sponsored "Expert Panel on Primary Care Productivity Measurement" agreed on 12 eQMs that:
  - Cover high priority primary care conditions
  - Have strong associations with patient outcomes
  - Are well established inside and outside of the VA as being core measures of PC clinical quality

PRIMARY CARE QUALITY MEASURES: CHRONIC & PREVENTABLE DISEASE MANAGEMENT MEASURES (EQMS)

Measure	Description
c9h_ec	DM – Outpatient – HbA1c Annual Measurement
dmg23h_ec	DM: HbA1c poor control
dmg27h_ec	DM: BP less than 140/90
dmg34h_ec	DM: Medical attention for nephropathy - Renal Testing
statn7_ec	Statin therapy for patients with diabetes
statn8_ec	Statin adherence for patients with diabetes
ihd53h_ec	Controlling High Blood Pressure
statn1_ec	Statin Therapy for patients with cardiovascular disease
statn4_ec	Statin adherence for patients with cardiovascular disease

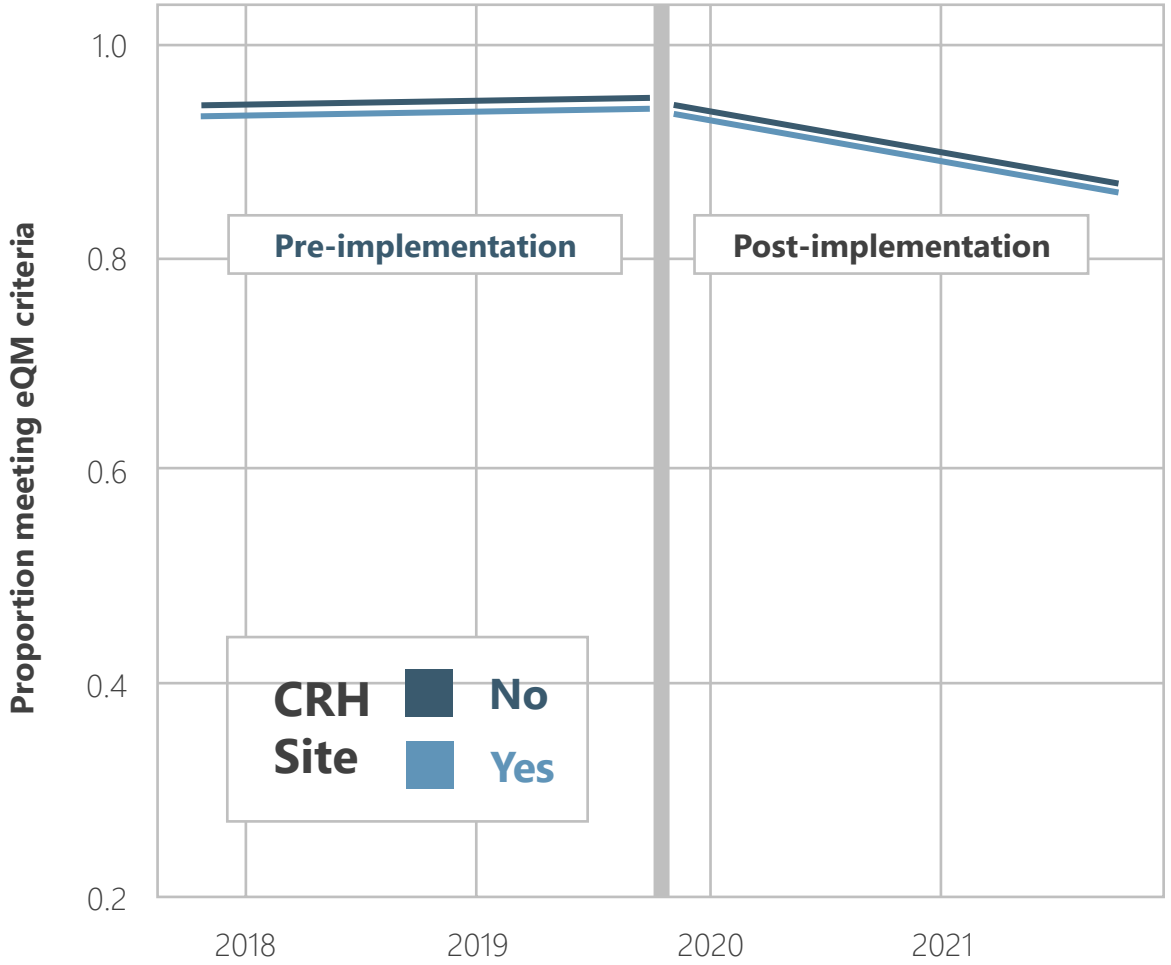
EQUITY SUB-ANALYSIS

- Definition of minority serving Hernandez et al (Medical Care, 2016)*
  - 25th and 75th percentiles to define low (< 7.0%), medium (7.0 – 35.9%), and high (>35.9%) minority serving clinics
  - High = high category (n = 49)
  - Low = low and medium categories (n = 111)
- Limited the analysis to only those in high minority serving category

*Hernandez, Susan E. MPA, PhD; Taylor, Leslie PhD; Grembowski, David PhD; Reid, Robert J. MD, PhD; Wong, Edwin PhD; Nelson, Karin M. MD, MSHS; Liu, Chuan Fen MPH, PhD; Fihn, Stephan D. MD, MPH; Hebert, Paul L. PhD. A First Look at PCMH Implementation for Minority Veterans: Room for Improvement. Medical Care 54(3):p 253 261, March 2016. | DOI: 10.1097/MLR.0000000000000512

PRIMARY
OUTCOME RESULTS

QUALITY OUTCOME TRENDS



TWO MEASURES WITH IMPROVED QUALITY IN DIABETES CARE AT CRH SITES

No other statistically significant differences in diabetes quality outcome measures between CRH sites and non-CRH sites

- Annual HbA1c screening: 0.00 (-0.01, 0.01) p = 0.640
- Poor HbA1c control: -0.01 (-0.01, 0.00) p = 0.111
- BP < 140/90 in Diabetics: 0.01 (-0.00, 0.03) p = 0.095
- **Attention for nephropathy in Diabetics: 0.01 (0.00, 0.01) p =0.010**
- **Statin Therapy for Veterans with diabetes: 0.01 (0.00, 0.01) p = 0.003**
- Statin Adherence for Veterans with diabetes: 0.00 (-0.01, 0.00) p =0.292

NO DIFFERENCE IN HYPERTENSION QUALITY MEASURES

No statistically significant differences in hypertension quality outcome measures between CRH sites and non-CRH sites

- Control of Blood Pressure: 0.01 (-0.01, 0.02) p = 0.382

NO DIFFERENCE IN CARDIOVASCULAR DISEASE QUALITY MEASURES

No statistically significant differences in cardiovascular disease quality outcome measures between CRH sites and non-CRH sites

- Statin Therapy for Veterans with cardiovascular disease: 0.00 (-0.01,0.02) p = 0.348
- Statin Adherence for Veterans with cardiovascular disease : -0.01 (-0.03,0.01) p = 0.467

SECONDARY
OUTCOME RESULTS

NO EQUITY CONCERNS FOR MAJORITY OF MEASURES

Diabetes

Results were either not statistically significant or borderline with CRH sites performing better than matched comparator sites.

Exception: Statin Adherence for Veterans with diabetes: -0.01 (-0.03, 0.00) p =0.015

Hypertension

Results not statistically significant between CRH sites and their matched comparator sites.

Cardiovascular Disease

Results not statistically significant between CRH sites and their matched comparator sites.

LIMITATIONS

Observational study that can only show associations, not causation

- ITS is a rigorous quasi-experimental design
- Tracking outcomes for many time points

Analysis done at the clinic-level

- Not highlighting individual quality metrics at a Veteran level
- CRH was proposed as a clinic-level intervention

There are likely many co-occurring interventions happening at PC sites that may impact clinical quality outcomes outside of CRH

- Matched cohort of sites should have similar exposure to other interventions

CONCLUSIONS

1. Primary care quality measures at CRH sites undergoing early implementation of the program are in most cases either no different or slightly better than matched comparator sites that have not implemented CRH

2. In the majority of cases, there are no differences in quality outcomes among sites that serve a high level of minority Veterans

IMPLICATIONS

- Provide early support that telehealth interventions like CRH can improve access to primary health care in a variety of settings, especially in clinics experiencing staff shortages without impacting the quality of chronic disease care.

- It is reassuring that our findings to date do not show evidence that CRH is inducing racial and ethnic disparities which have historically been shown with other telehealth programs.

NEXT STEPS

Evaluation of quality in CRH Mental Health program

- Focus on depression and PTSD
- Will also evaluate screening for suicide

Evaluation of quality in CRH Primary Care program

- Late implementation/maintenance
- Alternate methods (e.g., inverse probability weighting)
- Patient level analysis

OTHER CRH RELATED CYBERSEMINARS

- Implementation of Clinical Resource Hubs to Expand Access to Primary Care and Mental Health Services: First Year Implementation Progress, Challenges, and Facilitators (Neetu Chawla, Alicia Bergman, Susan Stockdale) – **11/17/2021**

- Implementation and Adoption of VA's National Contingency Staffing Program: Results from the Clinical Resource Hub Evaluation (Alicia Bergman, Danielle Rose, Susan Stockdale) – **09/21/2022**

- Describing the Tele-Mental health Services Delivered Nationally by the Clinical Resource Hubs (Brad Felker, Lucinda Leung) – **10/19/2022**

COMMENTS & QUESTIONS?