Innovative Approaches to Enhance the Implementation of Evidence-Based Therapies

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QUERI
VA Quality Enhancement Research Initiative

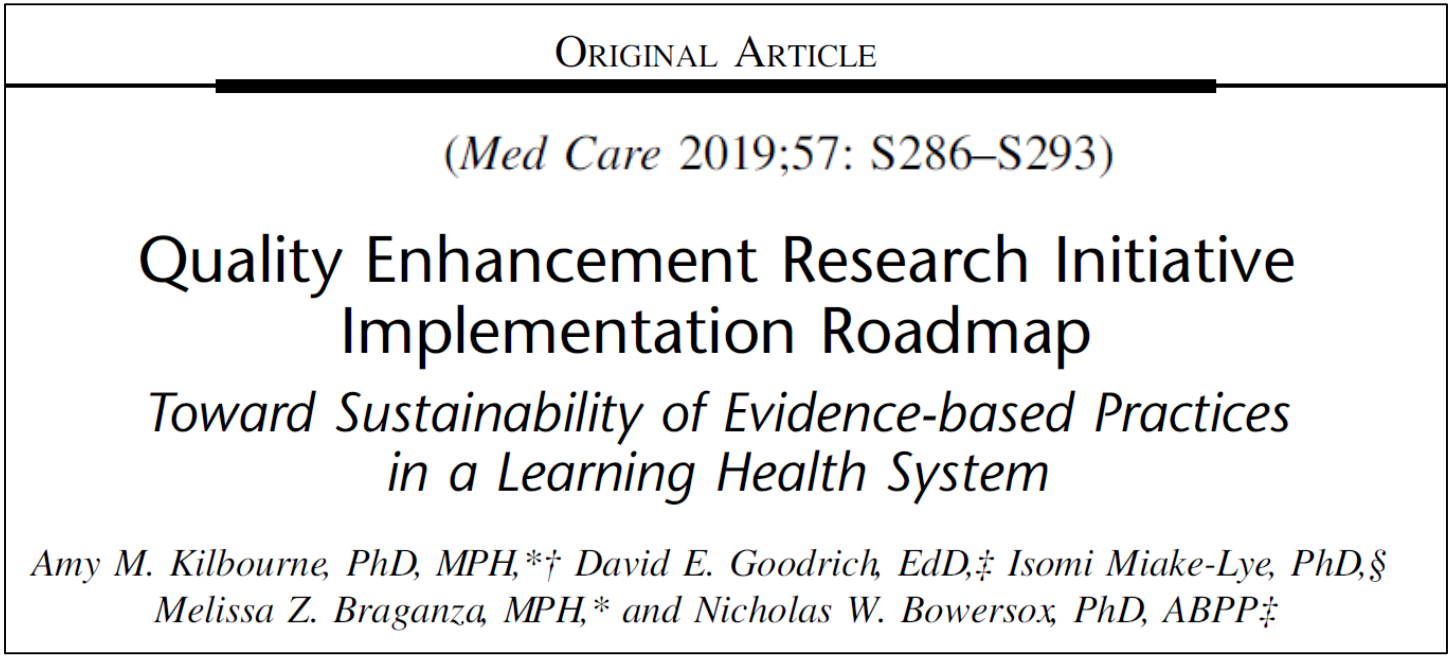
San Francisco VA Research & Development Seminar

October 5, 2020

Accelerating Implementation of Evidence-Based Therapies

- Overview of the VA Quality Enhancement Research Initiative
- Improving colonoscopy quality (Dr. Kaltenbach)
- Enhancing chronic pain management (Dr. Seal)
- Standardizing Measurement of Functional Status (Dr. Brown)
- Expanding participation in cardiac rehabilitation (Dr. Whooley)

The VA Quality Enhancement Research Initiative (QUERI) accelerates the uptake of evidence-based practices into routine care by aligning research and health system priorities across the Veterans Health Administration.



ORIGINAL ARTICLE

(*Med Care* 2019;57: S286–S293)

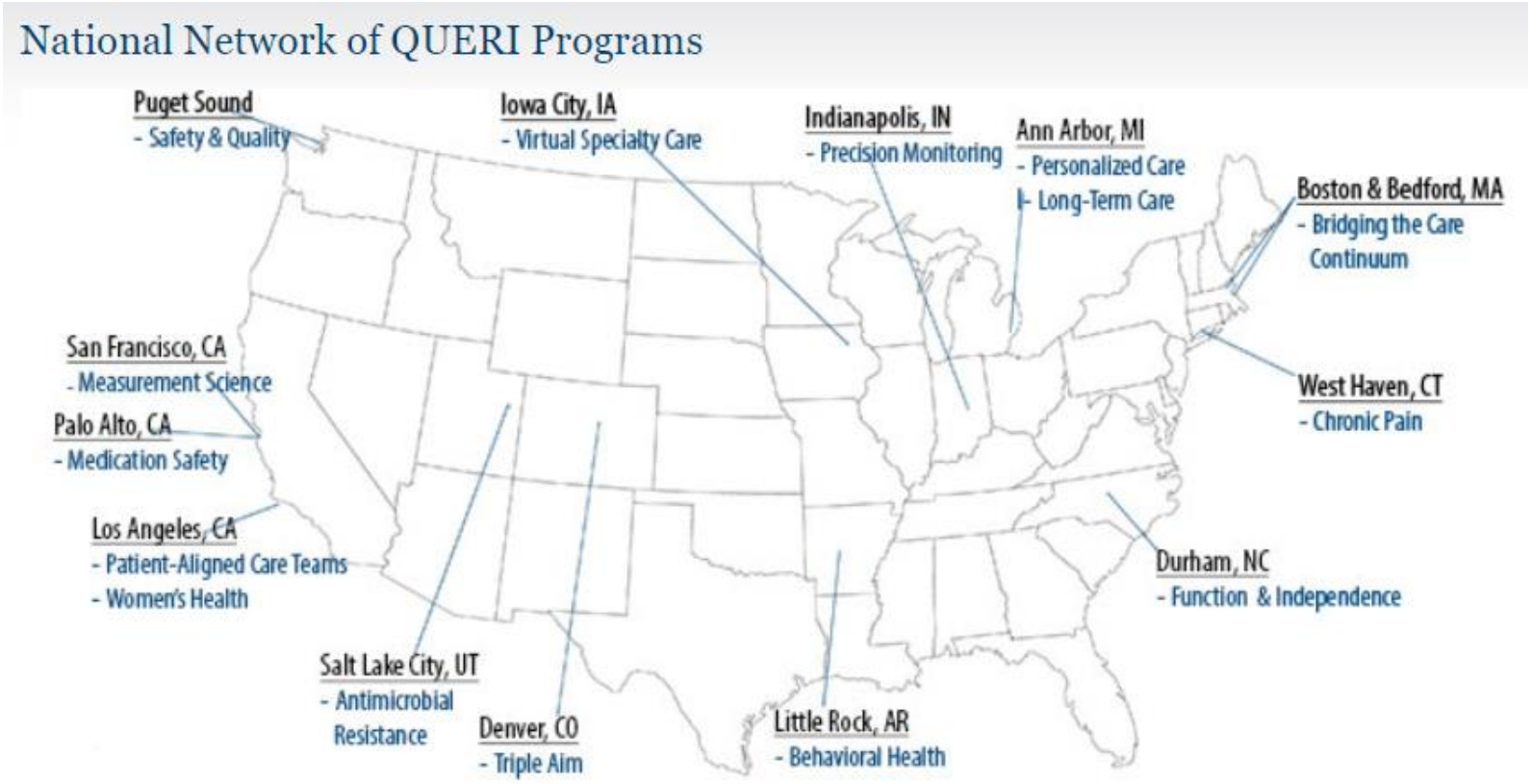
Quality Enhancement Research Initiative Implementation Roadmap

Toward Sustainability of Evidence-based Practices in a Learning Health System

Amy M. Kilbourne, PhD, MPH,† David E. Goodrich, EdD,‡ Isomi Miake-Lye, PhD,§ Melissa Z. Braganza, MPH,* and Nicholas W. Bowersox, PhD, ABPP‡*

Medical Care Appropriation Funds are used to partner with researchers who rigorously evaluate VA implementation of evidence-based practices (EBPs).

VA Quality Enhancement Research Initiative Programs



https://www.queri.research.va.gov/programs/default.cfm

Measurement Science QUERI 2015–2020 (Summary)

The Measurement Science QUERI addressed VHA modernization priorities by collaborating with operational partners to implement evidence-based practices that were united by the need to clearly define and continuously monitor standardized metrics to improve quality of care.

Key operational partners and alignment with VHA Modernization Priorities

Operational partners	Evidence-based practice	Modernization priority
Office of Gastroenterology	Improve measurement of colonoscopy quality	Reduce unwarranted variation
Office of Cardiology	Implement home-based cardiac rehabilitation	Mission Act: Improve access to care
Office of Patient-Centered Care	Expand integrated pain management	Engage Veterans in lifelong well-being
Office of Geriatrics and Extended Care	Standardize measurement of functional status	Commit to zero harm

QUERI
VA Quality Enhancement Research Initiative

Principal Investigators: Tonya Kaltenbach MD MS, Karen Seal MD MPH, Rebecca Brown MD MPH, and Mary Whooley MD

Using Innovative Approaches to Enhance the Implementation of Evidence-Based Therapies:

Improving Colonoscopy Quality for Colorectal Cancer Prevention

Tonya Kaltenbach, MD MS
Professor of Clinical Medicine, UCSF
Director of Advanced Endoscopy, VA San Francisco

October 5, 2020

Colon Cancer in VA

- Colorectal cancer (CRC) prevention is a top VA priority.
- CRC is commonly diagnosed in Veterans with a 35% 3-year mortality rate.
- In the VA, >200,000 colonoscopies are performed each year, 50-60% of which are for screening.

Low Provider Adenoma Detection Rate (ADR) is a Strong Predictor of Colorectal Cancer

Table 2. Adenoma Detection Rate and Risk of an Interval Colorectal Cancer among All Patients.

Adenoma Detection Rate	Interval Cancer	Hazard Ratio (95% CI)*	Unadjusted Risk
	no. of cases		*no. of cases/ 10,000 person-yr*
Continuous rate	712	0.97 (0.96–0.98)	7.7
Rate quintile			
Quintile 1: 7.35–19.05%	186	1.00 (reference)	9.8
Quintile 2: 19.06–23.85%	144	0.93 (0.70–1.23)	8.6
Quintile 3: 23.86–28.40%	139	0.85 (0.68–1.06)	8.0
Quintile 4: 28.41–33.50%	167	0.70 (0.54–0.91)	7.0
Quintile 5: 33.51–52.51%	76	0.52 (0.39–0.69)	4.8

- Each 1% increase in ADR associated with:

→ 3% decrease in interval colorectal cancer risk (HR, 0.97, 95%CI: 0.96 - 0.98)

→ 5% decrease in CRC death risk

- No threshold effect above which increases in ADR were without benefit

Corley DA, Jensen C, Marks A, et al. N Engl J Med 2014;370:1298-306.

Fellows

Position Change

Bowel Prep

Hycosamine

Withdrawal Time

Repeat Exam

High Definition

Drugs

Volume

Enhanced Imaging

iScan

EndoRings

Narrow Band Imaging

Endoscopist

Inspect Way In & Out

Blue Light

Third-Eye Retroscope

Chromoendoscopy

Water

Retroflexion

FICE

Full-Spectrum Endoscopy

Wide Angle

Time of Day

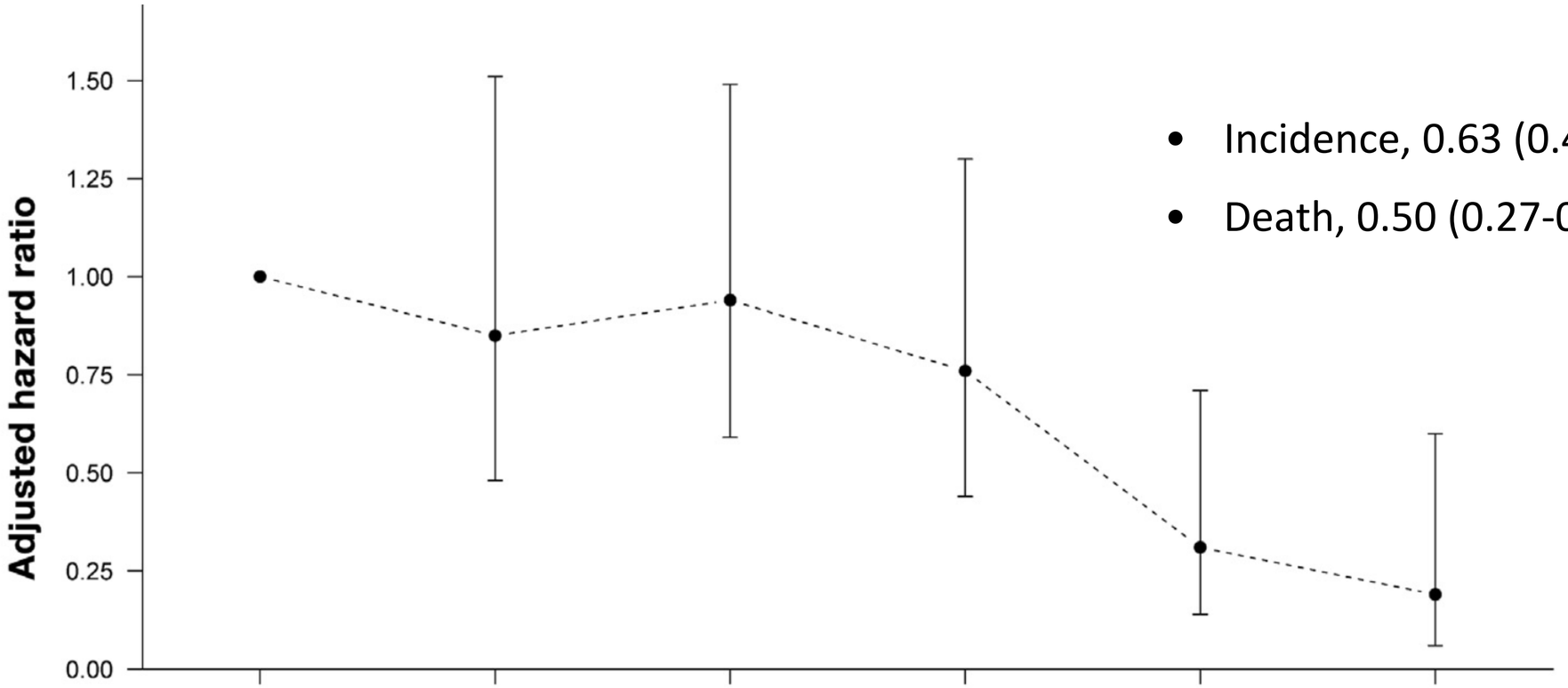
Endocuff

Late Schedule

Nurses

Cap

Improvement in Adenoma Detection Rate (ADR) for Individual Endoscopists Reduces Interval Cancer



	No improvement	Improvement from 1 to 2	Improvement from 1 or 2 to 3	Improvement from 1−3 to 4	Improvement from 1−4 to 5	Remain in 5th
HR	1.00	0.90	0.74	0.64	0.27	0.18
95% CI		(0.61, 1.34)	(0.47, 1.16)	(0.41, 1.01)	(0.12, 0.63)	(0.06, 0.56)
No. of cancers/ 100,000 p−yrs	25.34	22.67	18.86	16.25	7.09	4.49

- Incidence, 0.63 (0.45-0.88)
- Death, 0.50 (0.27-0.95)

Kaminski MF, Wieszczy P, Rupinski M et al. Gastroenterology 2017

Gastroenterology 2017;153:307–323

CONSENSUS GUIDELINE

Colorectal Cancer Screening: Recommendations for Physicians and Patients From the U.S. Multi-Society Task Force on Colorectal Cancer

Douglas K. Rex,[1] C. Richard Boland,[2] Jason A. Dominitz,[3] Francis M. Giardiello,[4] David A. Johnson,[5] Tonya Kaltenbach,[6] Theodore R. Levin,[7] David Lieberman,[8] and Douglas J. Robertson[9]

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This document updates the colorectal cancer (CRC) screening recommendations of the U.S. Multi-Society Task Force of Colorectal Cancer (MSTF), which represents the American College of Gastroenterology, the American Gastroenterological Association, and The American Society for Gastrointestinal Endoscopy. CRC screening tests are ranked in 3 tiers based on performance features, costs, and practical considerations. The first-tier tests are colonoscopy every 10 years and annual fecal immunochemical test (FIT). Colonoscopy and FIT are recommended as the cornerstones of screening regardless of how screening is offered. Thus, in a sequential approach based on colonoscopy offered first, FIT should be offered to patients who decline colonoscopy. Colonoscopy and FIT are recommended as tests of choice when multiple options are presented as alternatives. A risk-stratified approach is also appropriate, with FIT screening in populations with an estimated low prevalence of advanced neoplasia and colonoscopy screening in high prevalence populations. The second-tier tests include CT colonography every 5 years, the FIT–fecal DNA test every 3 years, and flexible sigmoidoscopy every 5 to 10 years. These tests are appropriate screening tests, but each has disadvantages relative to the tier 1 tests. Because of limited evidence and current obstacles to use, capsule colonoscopy every 5 years is a third-tier test. We suggest that the Septin9 serum assay (Epigenomics, Seattle, Wash) not be used for screening. Screening should begin at age 50 years in average-risk persons, except in African Americans in whom limited evidence supports screening at 45 years. CRC incidence is rising in persons under age 50, and thorough diagnostic evaluation of young persons with suspected colorectal bleeding is recommended. Discontinuation of screening should be considered when persons up to date with screening, who have prior negative screening (particularly colonoscopy), reach age 75 or have <10 years of life expectancy. Persons without prior screening should be considered for screening up to age 85, depending on age and comorbidities. Persons with a family history of CRC or a documented advanced adenoma in a first-degree relative age <60 years or 2 first-degree relatives with these findings at any age are recommended to undergo screening by colonoscopy every 5 years, beginning 10 years before the age at diagnosis of the youngest affected relative or age 40, whichever is earlier. Persons with a single first-degree relative diagnosed at ≥60 years with CRC or an advanced adenoma can be offered average-risk screening options beginning at age 40 years.

Colorectal cancer (CRC) screening is the process of detecting early-stage CRCs and precancerous lesions in asymptomatic people with no prior history of cancer or precancerous lesions. The U.S. Multi-Society Task Force of Colorectal Cancer (MSTF) is a panel of expert gastroenterologists representing the American College of Gastroenterology, the American Gastroenterological Association, and the American Society for Gastrointestinal Endoscopy. The MSTF, like others, has long endorsed systematic offers of CRC screening to average-risk persons (persons without a high-risk family history of colorectal neoplasia) beginning at age 50 years, with general evidence supporting screening reviewed in previous publications.[1] This publication updates the screening recommendations of the MSTF for screening in average-risk persons.[1]

Screening differs from surveillance. Surveillance refers to the interval use of colonoscopy in patients with previously detected CRC or precancerous lesions and interval colonoscopy in patients performed to detect dysplasia in persons with inflammatory bowel disease affecting the colon. Surveillance recommendations from the MSTF on surveillance after cancer[2] and removal of precancerous lesions[3] are available in other documents. Screening is also distinct

Abbreviations used in this paper: CRC, colorectal cancer; FIT, fecal immunochemical test; MSTF, U.S. Multi-Society Task Force on Colorectal Cancer; SSP, sessile serrated polyp.

Most current article

This article is being published jointly in *Gastroenterology*, *American Journal of Gastroenterology*, and *Gastrointestinal Endoscopy*.
0016-5085/$36.00
http://dx.doi.org/10.1053/j.gastro.2017.05.013

Recommendations

1. We recommend colonoscopy every 10 years or annual FIT as first-tier options for screening the average-risk persons for colorectal neoplasia (strong recommendation; moderate-quality evidence).
2. We recommend that physicians performing screening colonoscopy measure quality, including the adenoma detection rate (strong recommendation, high-quality evidence).
3. We recommend that physicians performing FIT monitor quality (strong recommendation, low-quality evidence). The recommended quality measurements for FIT programs are detailed in a prior publication.[86]
4. We recommend CT colonography every 5 years or FIT–fecal DNA every 3 years (strong recommendation, low-quality evidence) or flexible sigmoidoscopy every 5 to 10 years (strong recommendation, high-quality evidence) in patients who refuse colonoscopy and FIT.
5. We suggest that capsule colonoscopy (if available) is an appropriate screening test when patients decline colonoscopy, FIT, FIT–fecal DNA, CT colonography, and flexible sigmoidoscopy (weak recommendation, low-quality evidence).
6. We suggest against Septin9 for CRC screening (weak recommendation, low-quality evidence).

Department of Veterans Affairs
Veterans Health Administration
Washington, DC 20420

VHA DIRECTIVE 1015
Transmittal Sheet
December 30, 2014

COLORECTAL CANCER SCREENING

1. REASON FOR ISSUE: This Veterans Health Administration (VHA) Directive provides policy on various modalities for providing colorectal cancer (CRC) screening for VA medical facilities.

2. SUMMARY OF MAJOR CHANGES: This Directive is being revised to update the responsibilities of the medical facility Director to include ensuring the quality of colonoscopy as well as monitoring requirements. It also updates recommended screening tests, which are now based upon the screening guidelines coordinated by the VHA National Center for Health Promotion and Disease Prevention (NCP). Guidance has been clarified to increase flexibility in recommending screening options. Other changes include the addition of colonoscopy quality monitoring and recommendations for optimizing bowel preparation.

3. RELATED ISSUES: None.

4. RESPONSIBLE OFFICE: Specialty Care Services (10P4E) is responsible for the contents of this Directive. Questions may be directed to National Program Director for Gastroenterology at 202-461-7160.

5. RESCISSIONS: Directive 2007-004, dated January 12, 2007, is rescinded.

6. RECERTIFICATION: This VHA Directive is scheduled for recertification on or before the last working day of December 2019.

Carolyn M. Clancy, M.D.
Interim Under Secretary for Health

DISTRIBUTION: Emailed to the VHA Publications Distribution List on 12/31/2014.

Directive states that:

1. the Chief of Staff at each medical facility must assess the quality of screening colonoscopy using three specific metrics (bowel prep quality, cecal intubation rate, & ADR)

2. a minimum of 30 records per provider must be assessed annually.

Adenoma Detection Rate (ADR)

$$\text{ADR} = \frac{\text{\# colonoscopies with adenoma}}{\text{\# screening colonoscopies}}$$

*If incomplete due to inadequate prep, patient discomfort, etc, or indication is surveillance or diagnostic, then procedure is not included in the calculation.

**Reference standard of adenoma diagnosis is histopathology

Data Elements Needed

1) Was a colonoscopy performed and for what indication?
2) Was a polyp removed?
3) What is histology? (Access to Pathology)
4) Ability to follow / track in more than one time point

Rex D, Schoenfeld P, Cohen J, et al. Gastrointest Endosc. 2015, 81 (1), 31-53

A Nationwide Survey and Needs Assessment of Colonoscopy Quality Assurance Programs in the VA

Andrew J. Gawron, MD, PhD; Phillip Lawrence, PharmD; Morgan M. Millar, PhD; Jason A. Dominitz, MD; Samir Gupta, MD; Mary Whooley, MD; and Tonya Kaltenbach, MD

Variability exists in quality documentation, measurement, and reporting practices of colonoscopy screening in VA facilities, and most do not have formal performance improvement plans.

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Colorectal cancer (CRC) is an important concern for the VA, and colonoscopy is one primary screening, surveillance, and diagnostic modality used. The observed reductions in CRC incidence and mortality over the past decade largely have been attributed to the widespread use of CRC screening options.[1,2] Colonoscopy quality is critical to CRC prevention in veterans. However, endoscopy skills to detect and remove colorectal polyps using colonoscopy vary in practice.[3-5]

Quality benchmarks, linked to patient outcomes, have been established by specialty societies and proposed by the Centers for Medicare and Medicaid Services as reportable quality metrics.[6] Colonoscopy quality metrics have been shown to be associated with patient outcomes, such as the risk of developing CRC after colonoscopy. The adenoma detection rate (ADR), defined as the proportion of average-risk screening colonoscopies in which 1 or more adenomas are detected, has the strongest association to interval or "missed" CRC after screening colonoscopy and has been linked to a risk for fatal CRC despite colonoscopy.[1]

In a landmark study of 314,872 examinations performed by 136 gastroenterologists, the ADR ranged from 7.4% to 52.5%.[3] Among patients with ADRs in the highest quintile compared with patients in the lowest, the adjusted hazard ratios (HRs) for any interval cancer was 0.52 (95% confidence interval [CI], 0.39-0.69) and for fatal interval cancers was 0.38 (95% CI, 0.22-0.65).[3] Another pooled analysis from 8 surveillance studies that followed more than 800 participants with adenoma(s) after a baseline colonoscopy showed 52% of incident cancers as probable missed lesions, 19% as possibly related to incomplete resection of an earlier, noninvasive lesion, and only 24% as probable new lesions.[7] These interval cancers highlight the current imperfections of colonoscopy and the focus on measurement and reporting of quality indicators for colonoscopy.[8-12]

According to VHA Directive 1015, in December 2014, colonoscopy quality should be monitored as part of an ongoing quality assurance program.[13] A recent report from the VA Office of the Inspector General (OIG) highlighted colonoscopy-quality deficiencies.[14] The OIG report strongly recommended that the "Acting Under Secretary for Health require standardized documentation of quality indicators based on professional society guidelines and published literature."[14] However, no currently standardized and readily available VHA resource measures, reports, and ensures colonoscopy quality.

The authors hypothesized that colonoscopy quality assurance programs vary widely across VHA sites. The objective of this survey was to assess the measurement and reporting practices for colonoscopy quality and identify both strengths and areas for improvement to facilitate implementation of quality assurance programs across the VA health care system.

TABLE 3 Performance Improvement and Quality Assurance Programs (N = 96)

Questions	Facilities, No. (%)
Have you previously been informed of VHA Directive 1015 (Colonoscopy Quality Assurance)?	
No	9 (9.4)
Yes	82 (85.4)
Not answered	7 (7.3)
Does your gastroenterology section/laboratory have a formal performance improvement plan for endoscopists who do not meet the standards of colonoscopy quality?	
No	51 (53.1)
Yes	22 (22.9)
I don't know	18 (18.8)
Would you be interested in using a centralized, automatic reporting system to measure colonoscopy quality at your site?	
Yes, for aggregate level data	66 (68.8)
Yes, for provider level data	61 (63.5)
No	12 (12.5)

Challenges to Reporting Colonoscopy Quality Metrics

No reliable, efficient way of tracking procedure & pathology results to measure colonoscopy quality for the national Veteran population.

- No standardized documentation of colonoscopy reporting, including note titles.
- Most colonoscopies documented using a text note in Vista/CPRS
- No uniformity of endoscopic report-generating applications (i.e. Endopro, Provation, etc) to facilitate tracking and quality measurement.
- None of the current endoscopy reporting programs link to pathology (to determine ADR)

Measurement Science QUERI
Colonoscopy Quality Metrics

Aim 1: To generate a standardized assessment of colonoscopy quality metrics (ADR, cecal intubation rate & bowel preparation quality) that can be applied to national VHA data.

Aim 2: To test the validity of these metrics (as compared with chart review) at VHA facilities.

Aim 3: To develop a colonoscopy quality report card that is useful to front-line providers and facilities.

eGEMs The Journal for Electronic Health Data and Methods

Gupta, S. et al. 2018 A Framework for Leveraging "Big Data" to Advance Epidemiology and Improve Quality: Design of the VA Colonoscopy Collaborative. *eGEMs (Generating Evidence & Methods to improve patient outcomes)* 6(1): 4, pp. 1-9. DOI: https://doi.org/10.5334/egems.198

PROTOCOL

A Framework for Leveraging "Big Data" to Advance Epidemiology and Improve Quality: Design of the VA Colonoscopy Collaborative

Samir Gupta[1], Lin Liu[2], Olga V. Patterson[3], Ashley Earles[1], Ranier Bustamante[1], Andrew J. Gawron[3], William K. Thompson[4], William Scuba[5], Daniel Denhalter[1], M. Elena Martinez[2], Karen Messer[2], Deborah A. Fisher[6], Sameer D. Saini[7], Scott L. DuVall[3], Wendy W. Chapman[3], Mary A. Whooley[8] and Tonya Kaltenbach[8]

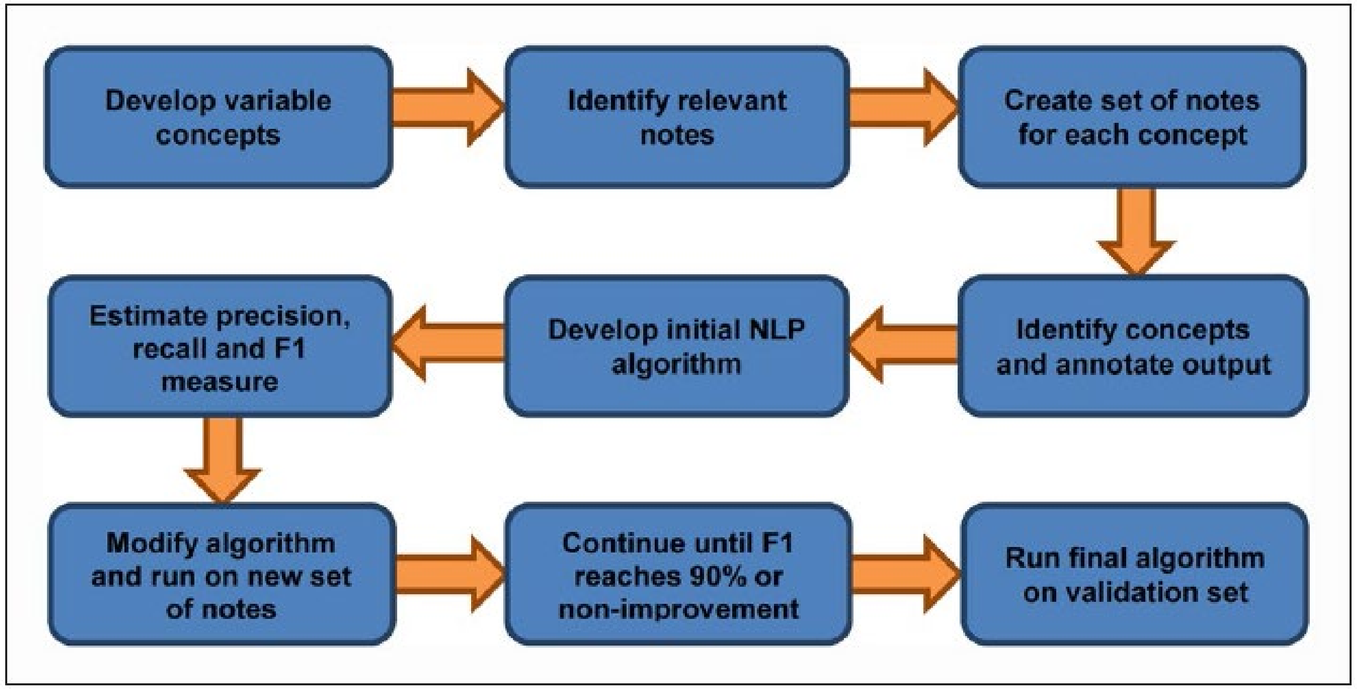
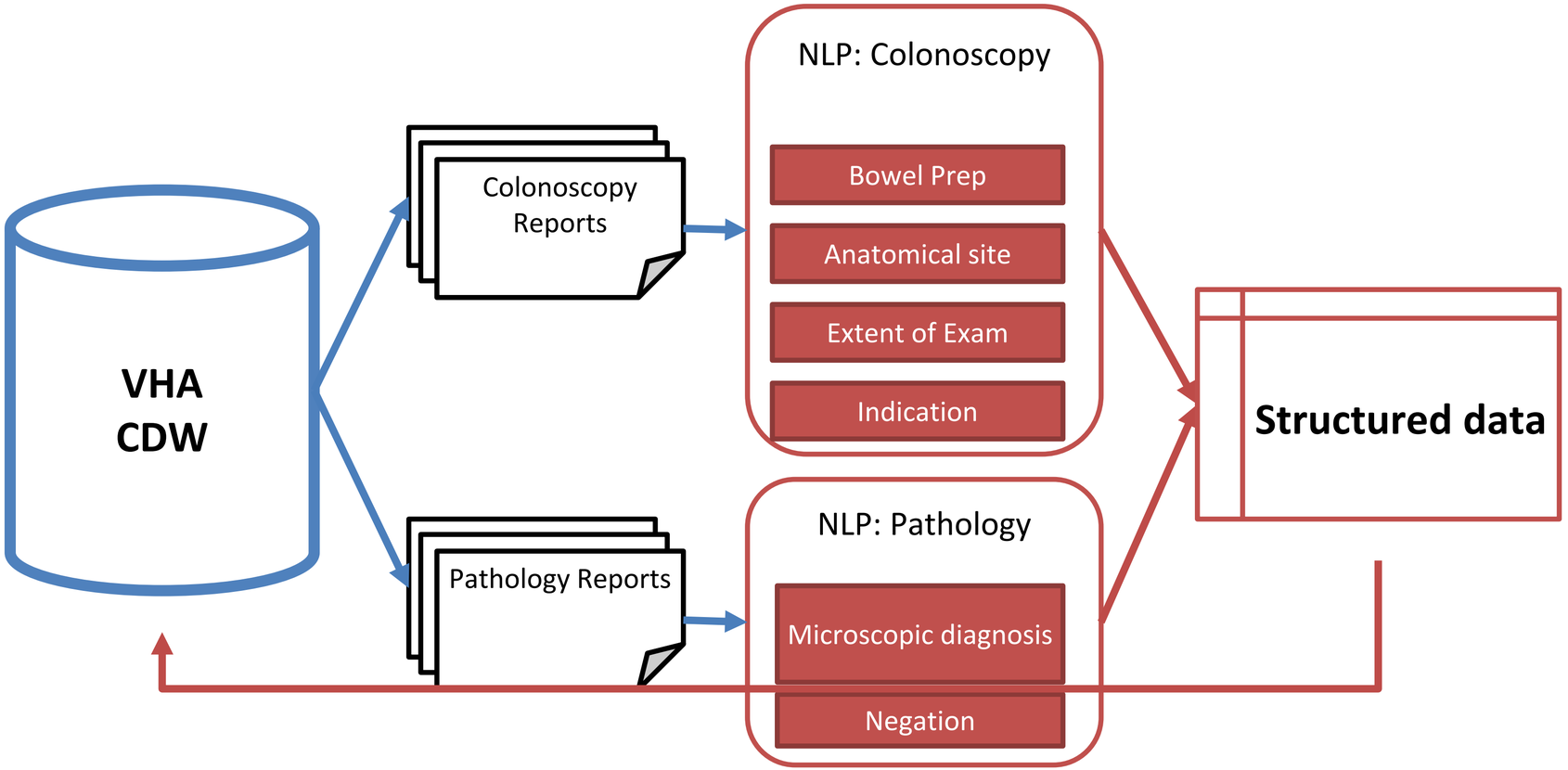


Figure 4: Workflow for NLP Algorithm Development and Validation.

Using Natural Language Processing for Colonoscopy Quality Metrics



- Multiple publications have demonstrated utility of NLP for extracting colonoscopy quality metrics
- Few if any operational products have been built, scaled, or implemented for quality reporting

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A NATIONAL US HEALTHCARE SYSTEM WEB-BASED COLONOSCOPY QUALITY REPORT CARD: ACCURATE, USABLE, AND ROBUST

Andrew J. Gawron[1,2,3], Yiwen Yao[2,3], William Thompson[1], Olga Patterson[2,3], Garrett G. Cole[2,3], Samir Gupta[4,5], William Scuba[2,3], Guy Divita[2,3], Jason A. Dominitz[6,7], Mary A. Whooley[8,9], Amandeep K. Shergill[8,9], Charles J. Kahi[10,11], Tonya R. Kaltenbach[8,9]

[1]Northwestern University, Salt Lake City, UT; [2]VA Salt Lake Healthcare System, Salt Lake City, UT; [3]University of Utah, Salt Lake City, UT; [4]VA San Diego Health Care System, San Diego, CA; [5]University of California San Diego, San Diego, CA; [6]VA Puget Sound Health Care System, Salt Lake City, UT; [7]University of Washington, Seattle, WA; [8]VA San Francisco Health Care System, San Francisco, CA; [9]University of California San Francisco, San Francisco, CA; [10]Indianapolis VA Medical Center, Indianapolis, UT; [11]Indiana University, Indianapolis, IN

Background: Colonoscopy quality measurement and reporting is problematic and burdensome, especially for large health systems. This is mainly due to variability in documentation and lack of structured data, even in the current electronic healthcare record era. Natural language processing (NLP) has shown promise in extracting quality metrics, but operational, dynamic large scale use has not been demonstrated. We aimed to develop and validate an accurate data source and workflow to measure colonoscopy quality for the largest integrated health care system in the US, and to provide a standardized and automated colonoscopy quality report card at the site and provider level. Methods: We built a database of colonoscopy procedures and linked pathology results with a combination of structured data (patient level), colonoscopy procedure and pathology notes from the existing VA Corporate Data Warehouse Text Integration Utility that included data January 1, 2013 through December 31, 2016. We developed robust, scalable NLP algorithms to extract (1) procedure indication, (2) bowel preparation, (3) exam extent, and (4) adenoma detection; and implemented them within the Apache Unstructured Information Management Architecture Asynchronous Scaleout, an open source Java framework for developing NLP pipelines. The rule-based algorithms are designed to be easily adaptable to the new datasets as they become available. We manually reviewed a random sample of 100 colonoscopy notes and linked pathology to determine NLP performance for information retrieval at a single site, including precision (positive predictive value (PPV)), recall (sensitivity), and F measures (the harmonic mean of recall and precision). Results: We identified 432,486 colonoscopy and 267,027 linked pathology notes across the entire VA healthcare system meeting inclusion criteria 2013-2016. We applied the NLP algorithms to formulate a report card at 11 VA test sites with colonoscopy procedures. The quality reporting infrastructure includes a framework for scalability, prospective updates, and a secure website to visually present quality metrics as shown in Figure 1 for sites and providers. Error analysis at a single VA site showed excellent performance, with F measures > 0.90, for extracting colonoscopy quality metrics, including adenoma detection rate (ADR), screening indication, cecal intubation rate, and bowel preparation quality (Table 1). Conclusion: We have developed a national colonoscopy quality report card with NLP to extract and display quality metrics. Future efforts will involve continued validation and implementation across the VA healthcare system. This will standardize and automate colonoscopy quality reporting with downstream impacts to reduce workload and identify system and provider quality deficiencies for improvement in colorectal cancer screening.

Natural Language Processing Algorithm showed Excellent Performance

Variable	Precision (PPV)	Recall (Sensitivity)	F Measure
Adenoma Detection Rate (ADR)	94.9%	98.9%	96.9%
Screening Indication	95.7%	90.5%	93.1%
Cecal Intubation Rate	99.4%	92.0%	95.6%
Bowel Preparation Adequacy	94.1%	93.0%	93.6%

Digestive Diseases and Sciences
https://doi.org/10.1007/s10620-020-06627-2

ORIGINAL ARTICLE

Simplifying Measurement of Adenoma Detection Rates for Colonoscopy

Andrew J. Gawron[1,2,3] · Yiwen Yao[2,4] · Samir Gupta[5,6] · Garrett Cole[2,4] · Mary Whooley[7,8] · Jason A. Dominitz[9,10] · Tonya Kaltenbach[7,8]

Received: 12 February 2020 / Accepted: 16 September 2020

Abstract

Background Adenoma detection rate (ADR) is the colonoscopy quality metric with the strongest association to interval or "missed" cancer. Accurate measurement of ADR can be laborious and costly.

Aims Our aim was to determine if administrative procedure codes for colonoscopy and text searches of pathology results for adenoma mentions could estimate ADR.

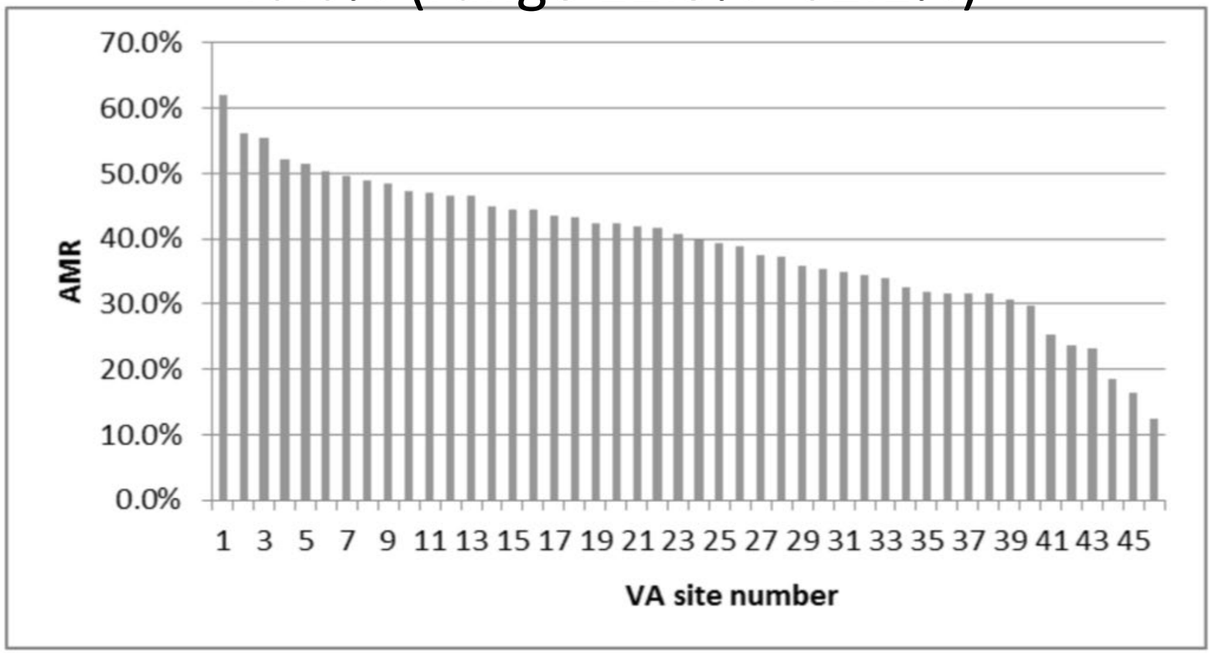
Methods We identified US Veterans with a colonoscopy using Current Procedure Terminology (CPT) codes between January 2013 and December 2016 at ten Veterans Affairs sites. We applied simple text searches using Microsoft SQL Server full-text searches to query all pathology notes for "adenoma(s)" or "adenomatous" text mentions to calculate ADRs. To validate our identification of colonoscopy procedures, endoscopists of record, and adenoma detection from the electronic health record, we manually reviewed a random sample of 2000 procedure and pathology notes from the 10 sites.

Results Structured data fields were accurate in identification of colonoscopies being performed (PPV = 0.99; 95% CI 0.99–1.00) and identifying the endoscopist of record (PPV of 0.95; 95% CI 0.94–0.96) for ADR measurement. Simple text searches of pathology notes for adenoma mentions had excellent performance statistics as follows: sensitivity 0.99 (95% CI 0.98–1.00), specificity 0.93 (95% CI 0.92–0.95), NPV 0.99 (95% CI 0.98–1.00), and PPV 0.93 (0.91–0.94) for measurement of ADR. There was no clinically significant difference in the estimates of overall ADR vs. screening ADR ($p > 0.05$).

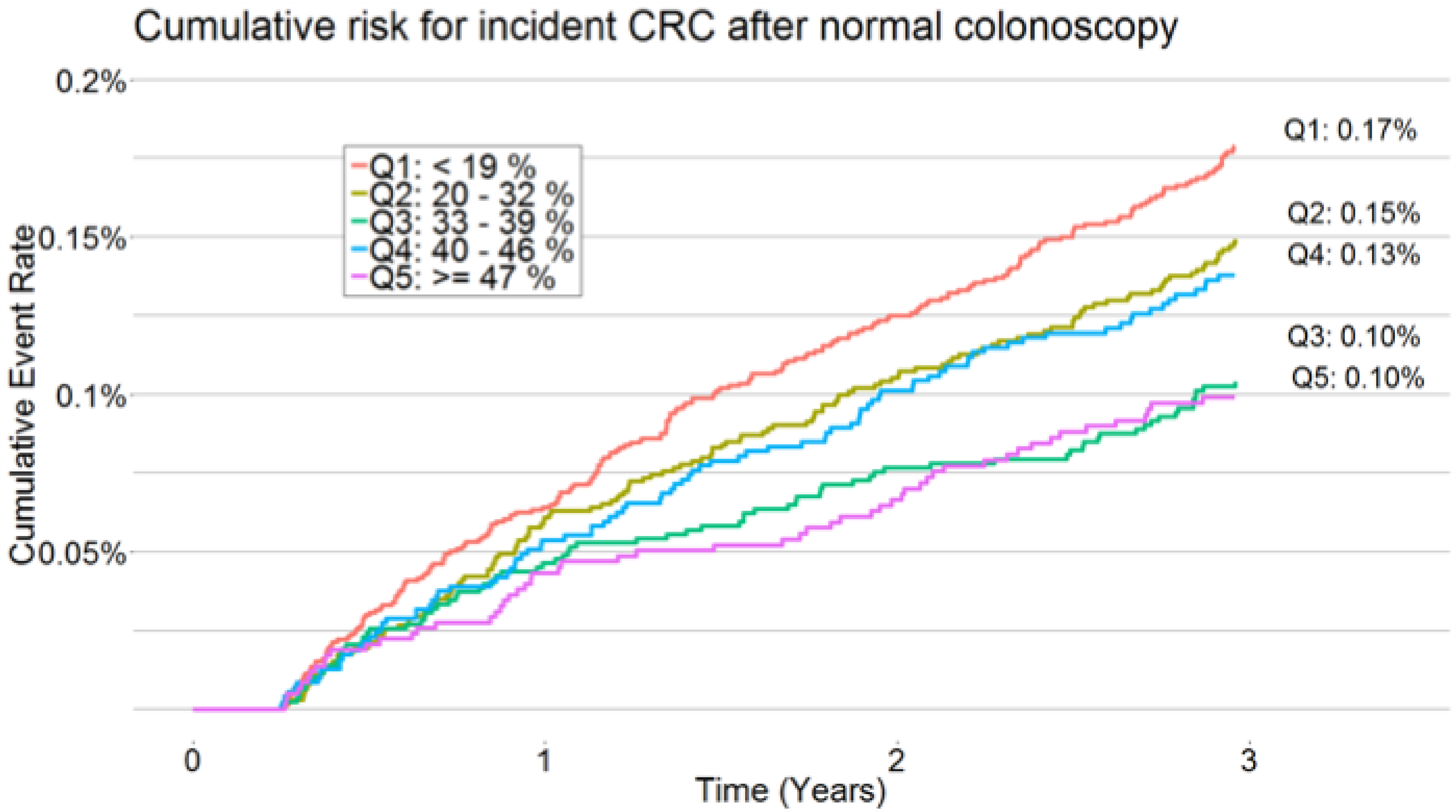
Conclusions Measuring ADR using administrative codes and text searches from pathology results is an efficient method to broadly survey colonoscopy quality.

Substantial Variability in Colonoscopy Quality Across Sites

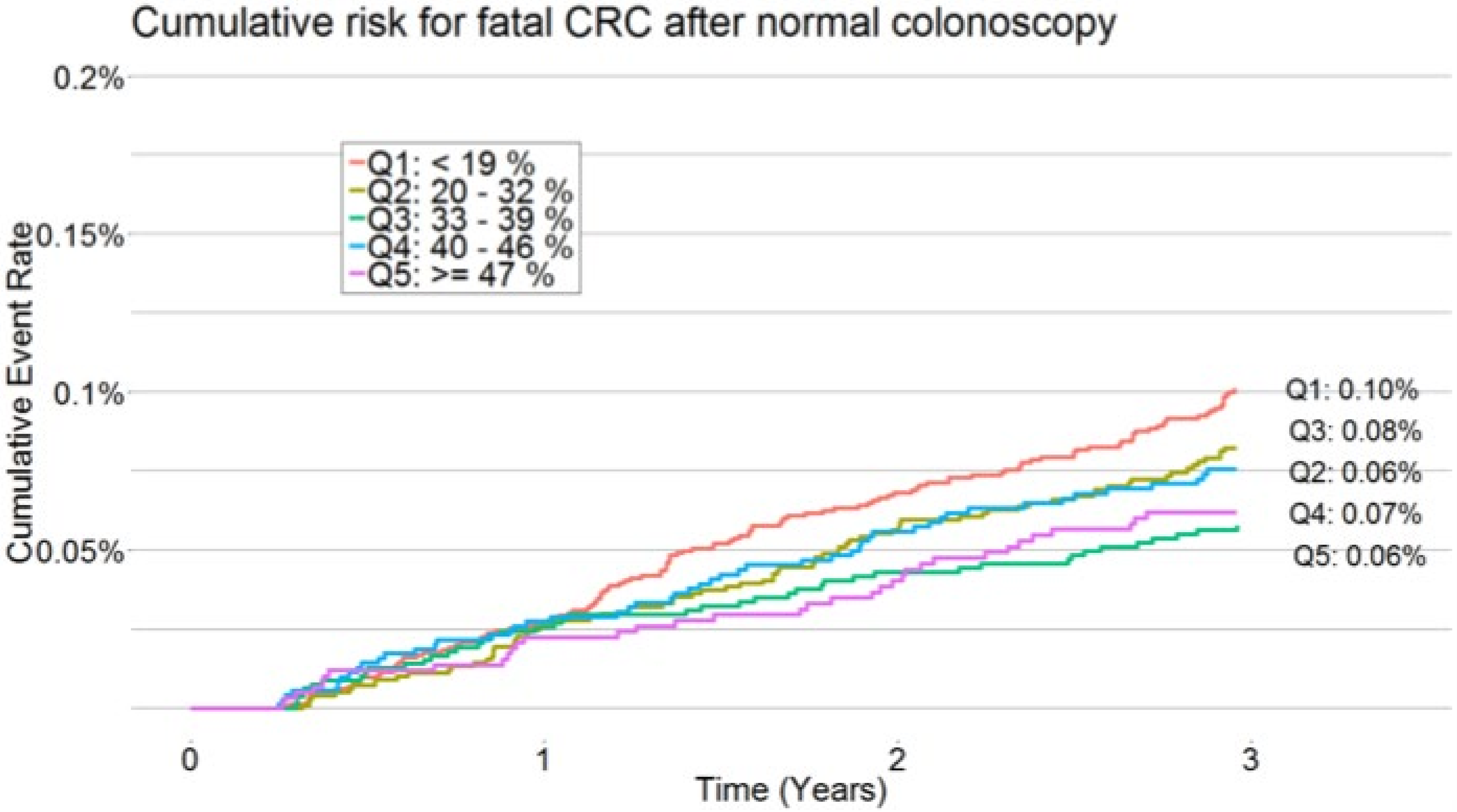
40.0% (range 12.5%- 62.1%)



AMR = Adenoma Mention Rate



Gupta S, Martinez ME, Gawron AJ, Kaltenbach T et al. Variation in Adenoma Detection Rate and Risk for Incident and Fatal Colorectal Cancer After Baseline Colonoscopy with and without Polypectomy. Gastroenterology, May 2019, Vol. 156, Issue 6, S-54



Gupta S, Martinez ME, Gawron AJ, Kaltenbach T et al. Variation in Adenoma Detection Rate and Risk for Incident and Fatal Colorectal Cancer After Baseline Colonoscopy with and without Polypectomy. Gastroenterology, May 2019, Vol. 156, Issue 6, S-54

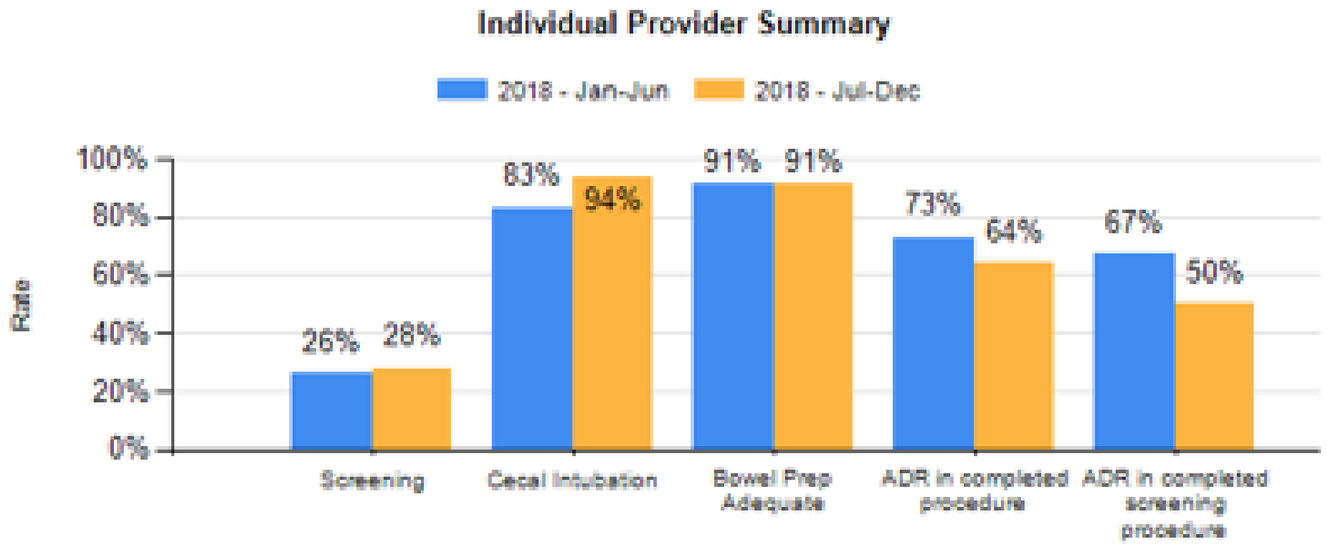
Measurement Science QUERI (2015-2020)
Colonoscopy Quality Metrics

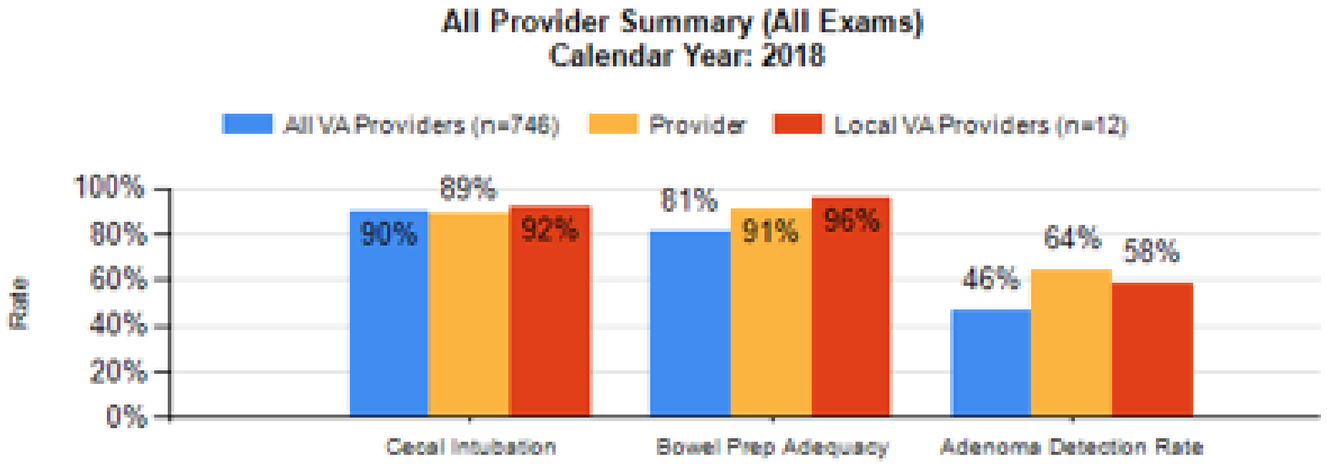
Aim 1: To generate a standardized assessment of colonoscopy quality metrics (ADR, cecal intubation rate & bowel preparation quality) that can be applied to national VHA data.

Aim 2: To test the validity of these metrics (as compared with chart review) at VHA facilities.

Aim 3: To develop a colonoscopy quality report card that is useful to front-line providers and facilities.

Colonoscopy Quality Report Card By Providers (Biannually)





Data can change behavior.

Behavior can change outcomes.

VA Endoscopy Quality Improvement Program (VA-EQuIP)

Operational program with HSR&D funding (6/2020– 5/2023)

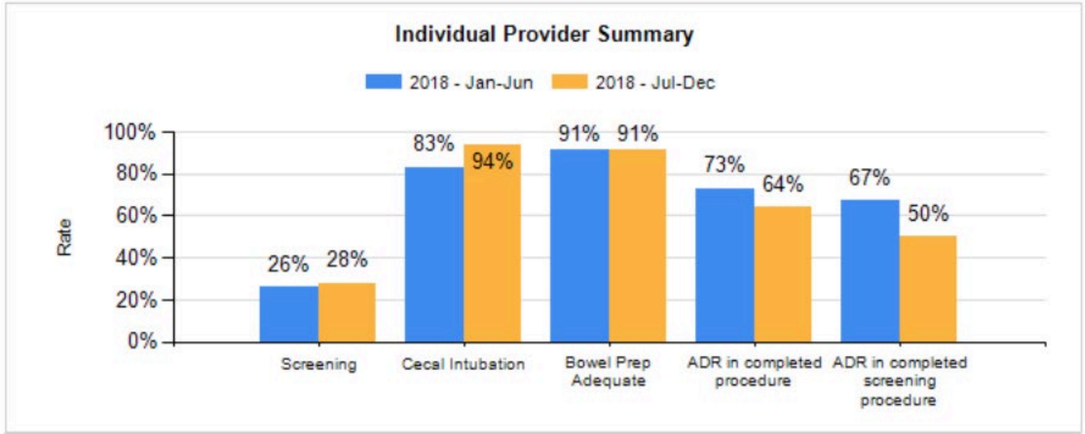
1) Quality Dashboard to measure and report provider colonoscopy quality compared to local and national benchmarks.

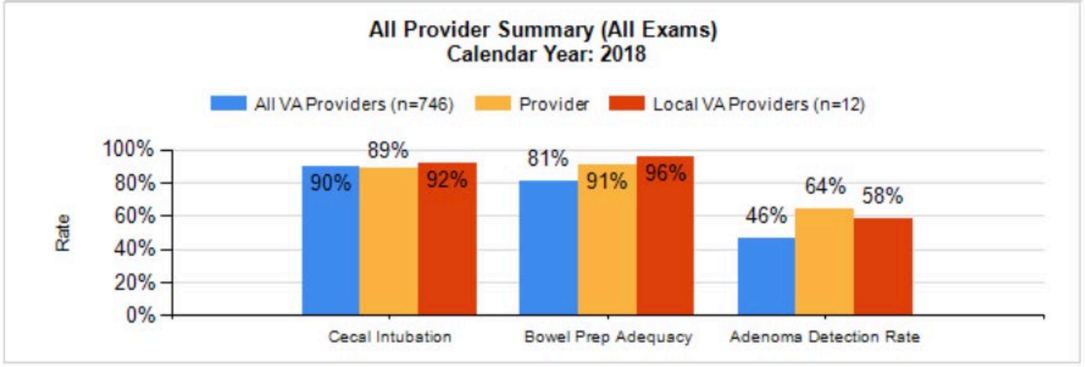
2) Learning Collaborative: Virtual learning sessions for providers across the country, enabling quality evaluation and peer mentoring / learning for quality improvement.

- Projected roll out: Jan 2021 (was delayed due to COVID)
- Implementation: ~60 VA sites to in a stepped wedge RCT, with over 600 providers
- Eligible sites include all VA sites with colonoscopy procedure or pathology notes in our operational database.

Facility Name: **Provider Name:** **Report Year:** 2018

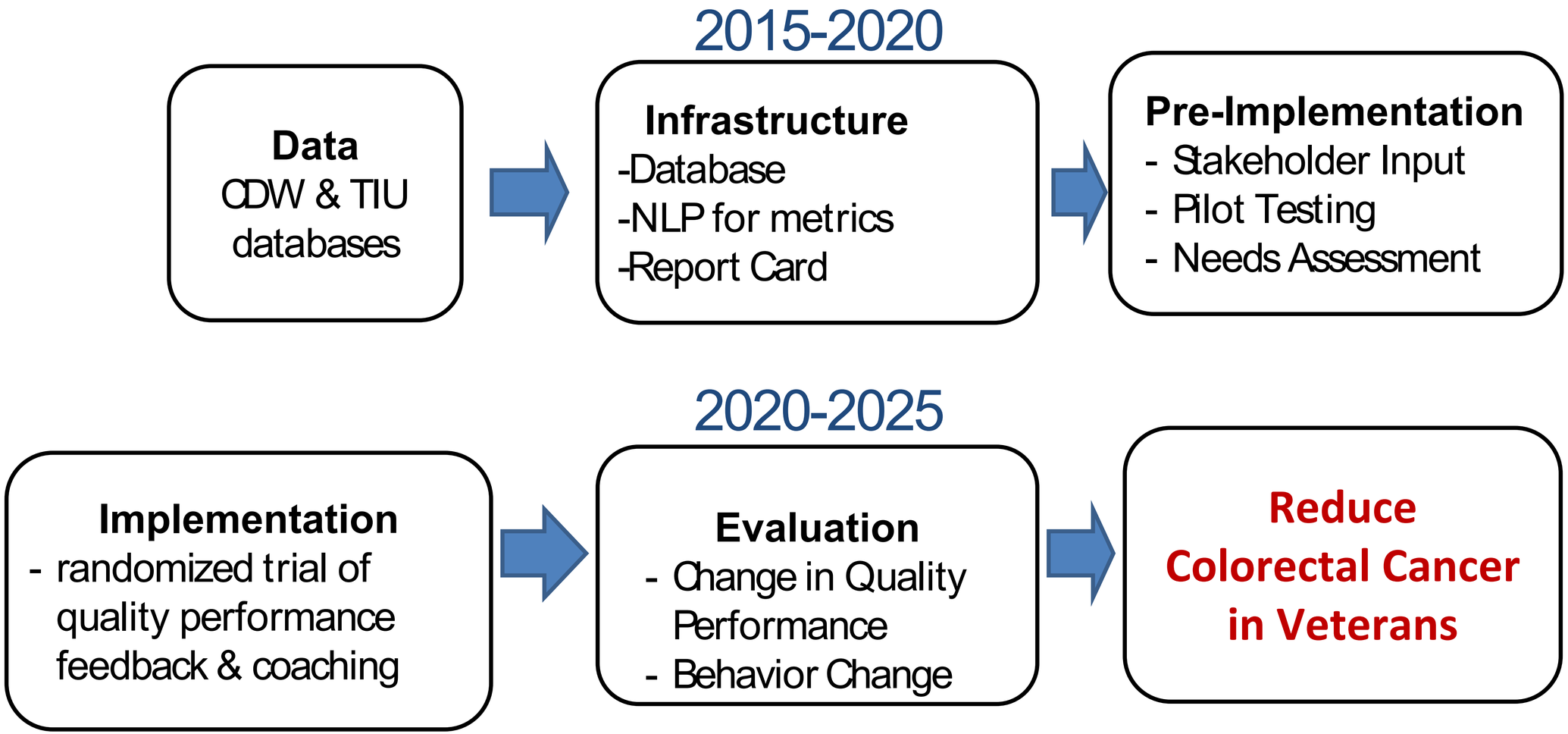
Time period	Procedure Count	Percent Screening	Cecal Intubation Rate (All Exams)	Bowel Prep Adequate Rate (All Exams)	⊞ Adenoma Detected (Completed Exams)	Adenoma Detected (Completed Screening Exams)
Jan to June	46	26%	83%	91%	73% 95% CI [56%, 86%]	67% 95% CI [31%, 91%]
Jul to Dec	54	28%	94%	91%	64% 95% CI [48%, 77%]	50% 95% CI [27%, 73%]



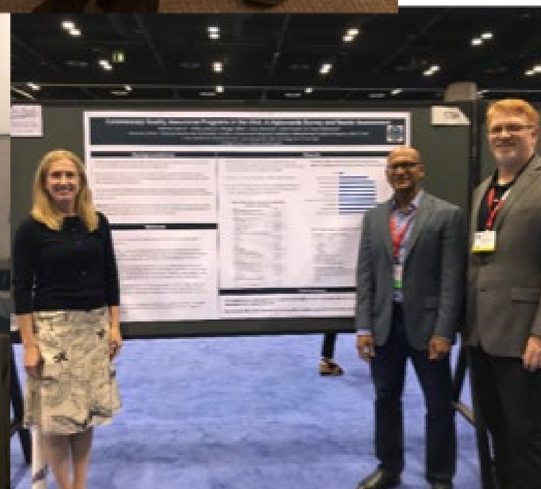


Co-PIs: Tonya Kaltenbach & Andrew Gawron

Summary


2015-2020
Data
CDW & TIU databases
Infrastructure
-Database
-NLP for metrics
-Report Card
Pre-Implementation
- Stakeholder Input
- Pilot Testing
- Needs Assessment
2020-2025
Implementation
- randomized trial of quality performance feedback & coaching
Evaluation
- Change in Quality Performance
- Behavior Change
Reduce Colorectal Cancer in Veterans

Core Team		
Tonya Kaltenbach MD MAS	Principal Investigator	San Francisco
Andrew Gawron MD PhD	Co-Investigator, NLP Tool	Salt Lake
Charles Kahi MD	Co-Investigator, Quality Report	Indianapolis
Susan Zickmund PhD	Qualitative	Salt Lake
Garrett Cole	NLP Expertise	Salt Lake
Bill Scuba	Project Manager, Software Architect	San Diego
Will Thompson PhD	NLP Expertise	Chicago
Guy Divita PhD	NLP Expertise	DC
Nilo Rosario	Implementation Liason	San Francisco
Tiffany Nguyen	Clinical Research Coordinator	San Francisco
Carmel Malvar	Clinical Research Coordinator	San Francisco
Tina Zhou & Travis Bailey	Program Managers - VA-EQuIP	SF / SL
Katherine Williams	Program Manager	San Francisco
Mary Whooley MD MAS	PI, Measurement Science QUERI	San Francisco
Key Partners		
Samir Gupta MD MAS	Epidemiology, VA Merit	San Diego
Olga Patterson PhD	VINCI, NLP Expertise	Salt Lake
Scott Duvall PhD	VINCI, Director	Sal Lake
Makoto Jones MD	Ideas Center	Salt Lake



VA | U.S. Department of Veterans Affairs

UCSF University of California San Francisco

Improving Chronic Pain Care and Opioid Safety in VA Primary Care

Implementation and Evaluation of the Integrated Pain Team Clinic

Measurement Science QUERI, SFVAHCS

Karen Seal, MD, MPH; Natalie Purcell, PhD; Carolyn Gibson, PhD; Francesca Nicosia, PhD; Tessa Rife, Pharm D.; Jenny Tighe, MSPH; Yongmei Li, PhD

SFVAHCS Research Seminar

October 5, 2020

The Gap: From Congressional Act to Implementation in VA

Public Law 114–198
114th Congress

An Act

To authorize the Attorney General and Secretary of Health and Human Services to award grants to address the prescription opioid abuse and heroin use crisis, and for other purposes.

July 22, 2016
[S. 524]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

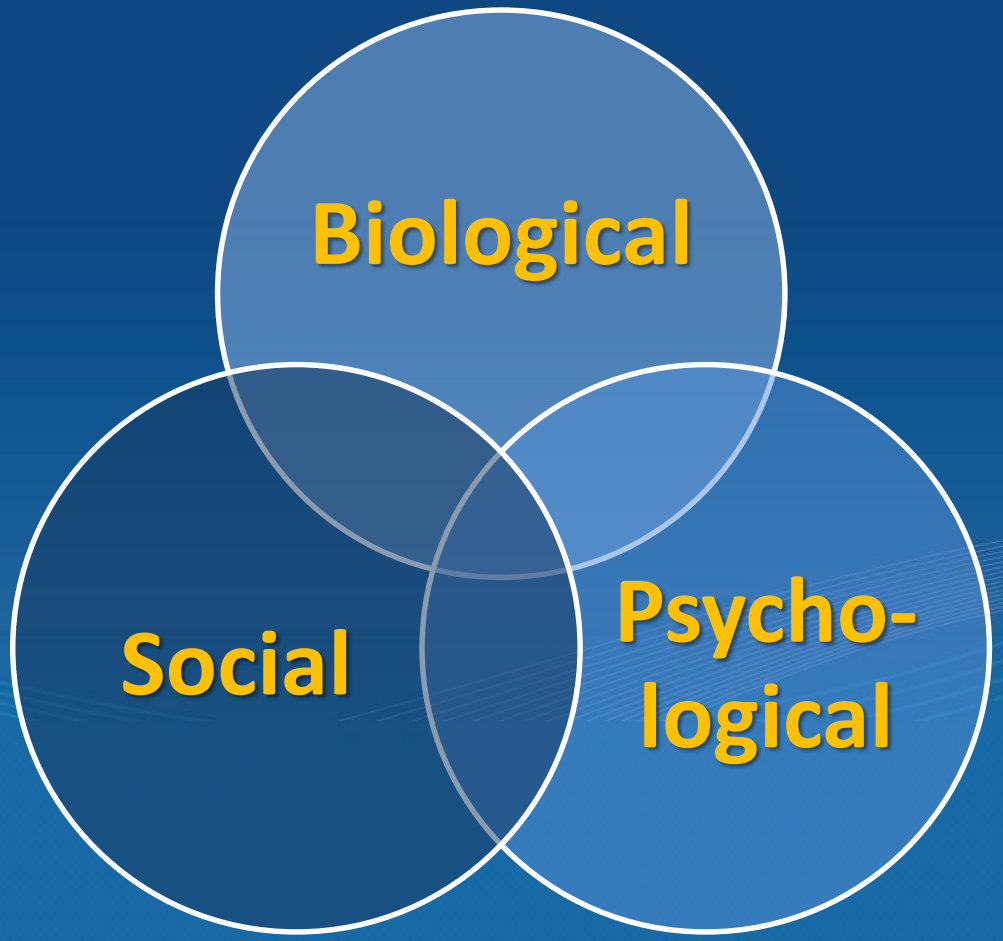
SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

(a) SHORT TITLE.—This Act may be cited as the "Comprehensive Addiction and Recovery Act of 2016".

Comprehensive Addiction and Recovery Act of 2016.
42 USC 201 note.

New Approach Needed

- Biopsychosocial model for pain management and opioid safety
- Multi-modal care
  - Behavioral health
  - Non-opioid medication management
  - Non-pharmacological and CIH modalities



JGIM

PERSPECTIVE

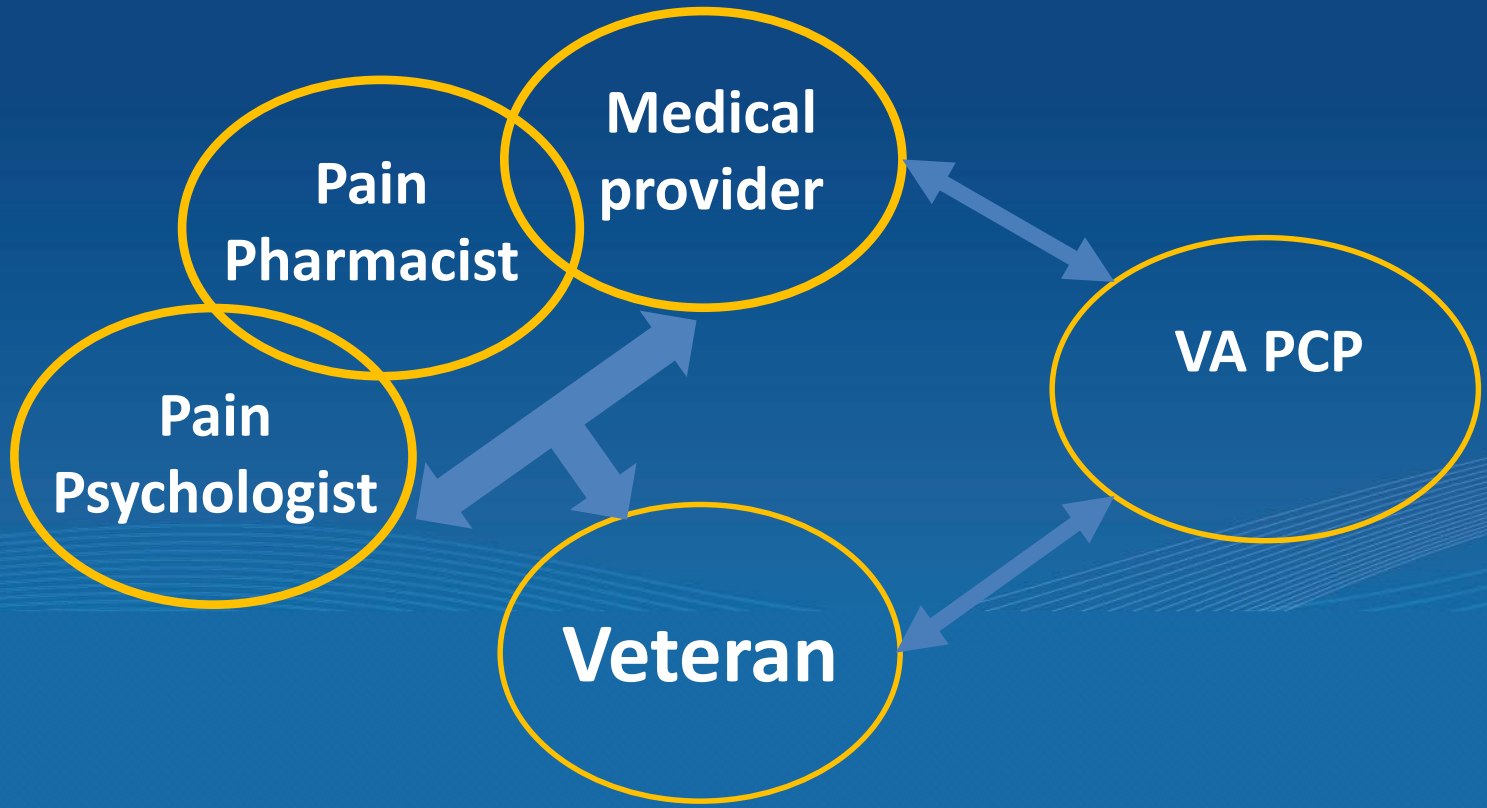
Managing Chronic Pain in Primary Care: It Really Does Take a Village

Karen Seal, MD, MPH[1,2], William Becker, MD[3,4], Jennifer Tighe, MSPH[1], Yongmei Li, PhD[1], and Tessa Rife, PharmD, CACP, CGP[1]

[1]San Francisco VA Healthcare System, San Francisco, CA, USA; [2]University of California, San Francisco, San Francisco, CA, USA; [3]VA Connecticut Healthcare System, West Haven, CT, USA; [4]Yale University School of Medicine, New Haven, CT, USA.

J Gen Intern Med 32(8):931–4
DOI: 10.1007/s11606-017-4047-5

SFVAHCS Integrated Pain Team (IPT)



Opioid Reduction and Risk Mitigation in VA Primary Care: Outcomes from the Integrated Pain Team Initiative

Karen H. Seal, MD, MPH[1,2], Tessa Rife, PharmD, BCGP[1,2], Yongmei Li, PhD[1], Carolyn Gibson, PhD[1,2], and Jennifer Tighe, MSPH[1]

[1]San Francisco Veterans Affairs Health Care System, University of California, San Francisco, San Francisco, CA, USA; [2]Departments of Medicine and Psychiatry, University of California, San Francisco, San Francisco, CA, USA.

BACKGROUND: National guidelines advise decreasing opioids for chronic pain, but there is no guidance on implementation.

OBJECTIVE: To evaluate the effectiveness of an Integrated Pain Team (IPT) clinic in decreasing opioid dose and mitigating opioid risk.

DESIGN: This study prospectively compared two matched cohorts receiving chronic pain care through IPT ($N = 147$) versus usual primary care (UPC, $N = 147$) over 6 months.

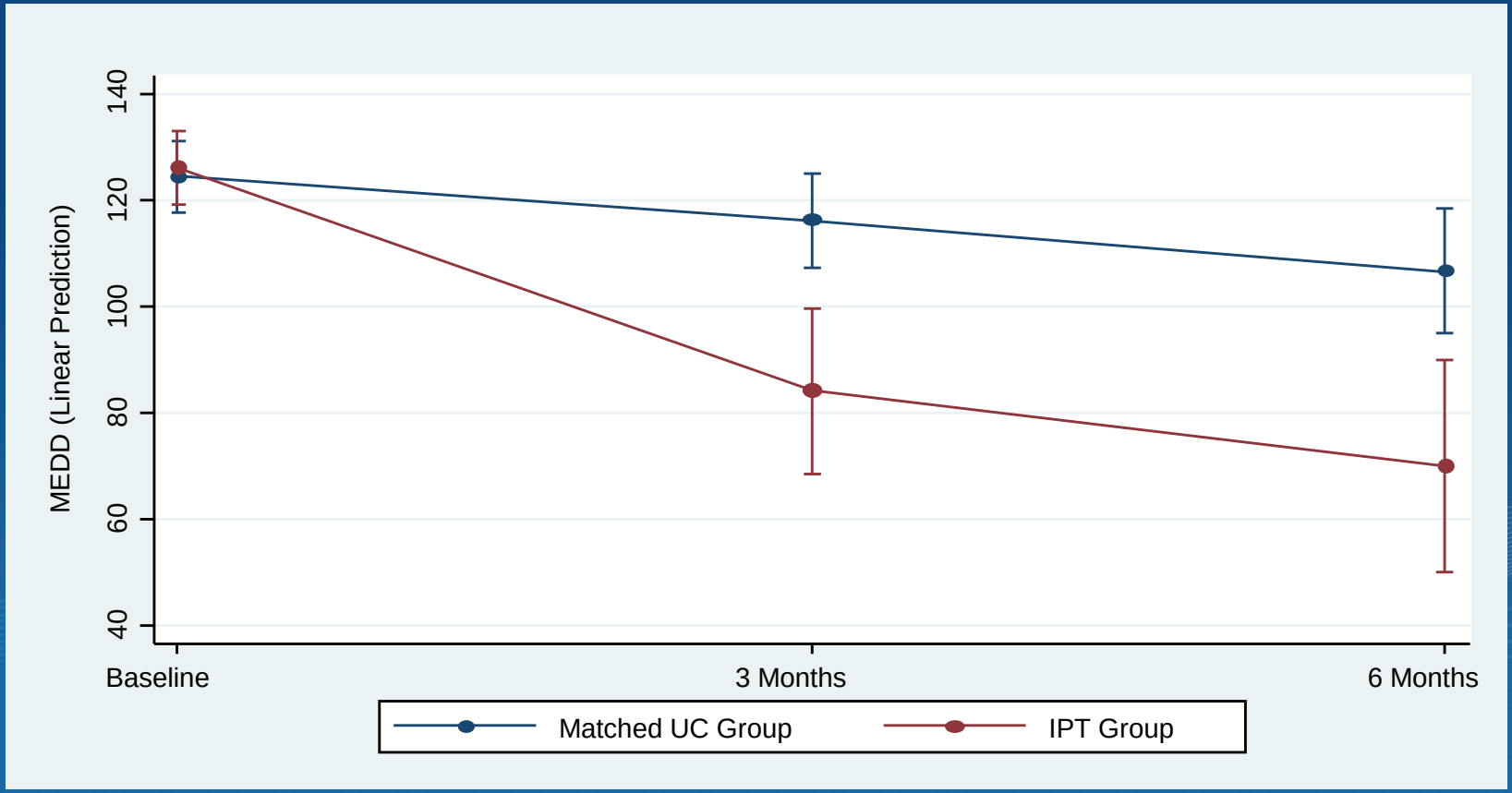
KEY WORDS: pain; opioids; veterans; interdisciplinary; primary care.

J Gen Intern Med 35(4):1238–44
DOI: 10.1007/s11606-019-05572-9

Methods: Study 1

- New IPT patients and a matched cohort in Usual Primary Care (UPC) were assembled using a national clinical decision support tool (VA STORM dashboard)
- All patients had chronic pain & were prescribed opioids; matched on age, sex, MH dx and daily opioid dose
- 294 veteran patients were included:
  - 147 patients in IPT were matched to 147 patients in UPC
  - Both groups were followed prospectively and assessed at 3 & 6 months
  - Mean age was 62; 90% male; predominantly white

Opioid Dose in IPT vs. UPC during Follow-Up



Adjusted Linear Regression

- By 3 mos, mean reduction in MEDD in IPT was 34 mg greater than UPC (p=0.002)
- By 6 months, mean reduction in MEDD in IPT was 38 mg greater than UPC (p=0.003)

Seal et al. *Journal Gen Intern Med*, 2019

Table 5. Safety Outcomes

Opioid Safety Outcomes

At 3- and 6-months, opioid safety metrics significantly improved in veterans in IPT vs. UPC:

- UDS monitoring
- Naloxone kit distribution and education

Decreases in IPT in co-prescription of opioids/benzos vs. increases in co-prescription in UPC.

Seal et al. *Journal Gen Intern Med*, 2019

Pain Medicine, 21(9), 2020, 1977–1984
doi: 10.1093/pm/pnaa003
Advance Access Publication Date: 25 February 2020
Original Research Article

OXFORD

INTEGRATIVE MEDICINE SECTION

An Integrated Pain Team Model: Impact on Pain-Related Outcomes and Opioid Misuse in Patients with Chronic Pain

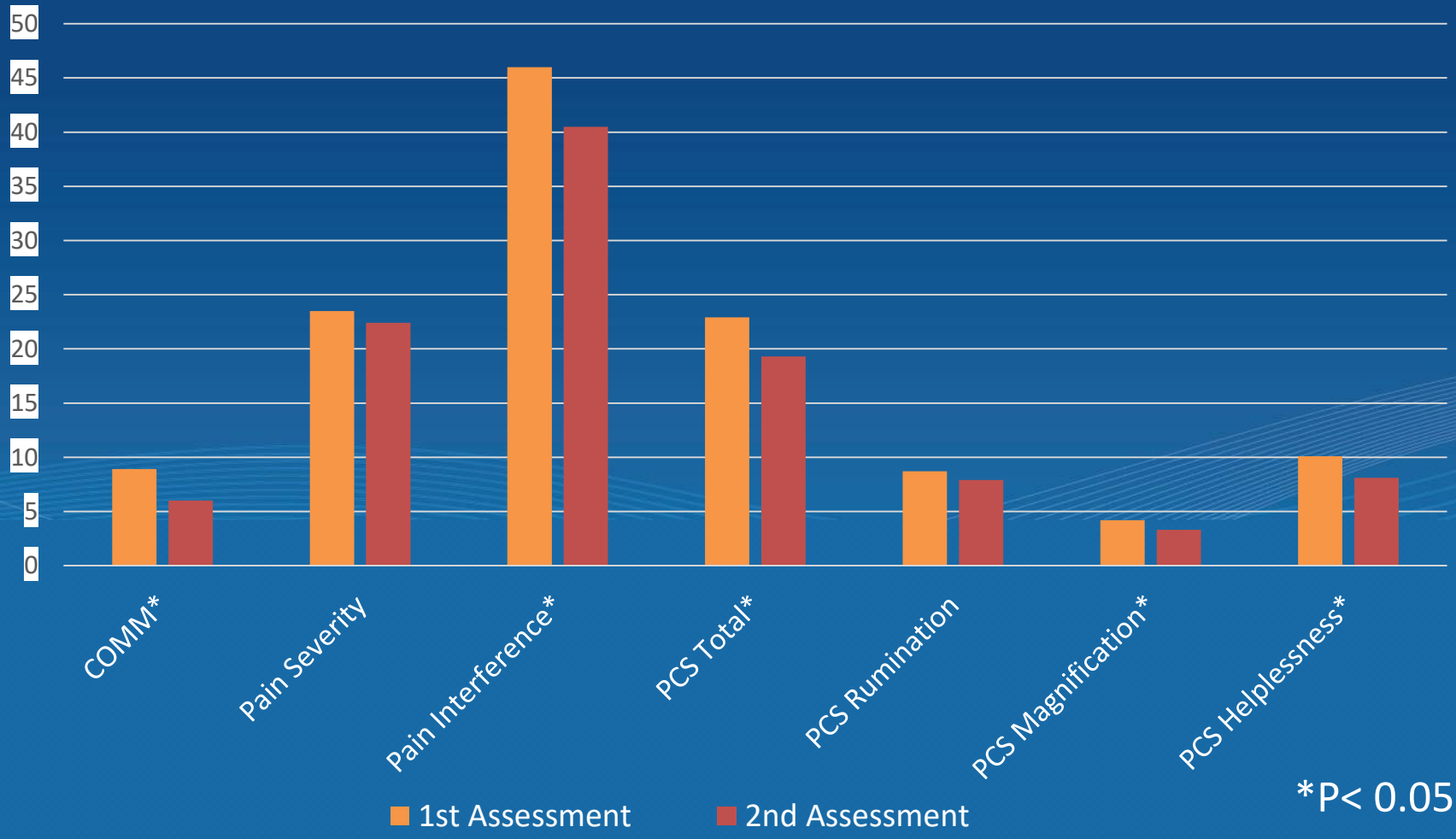
Carolyn J. Gibson, PhD, MPH,*,† Joseph Grasso, PhD,* Yongmei Li, PhD,* Natalie Purcell, PhD, MPA,*,‡ Jennifer Tighe, MPH,* Kara Zamora, MA,* Francesca Nicosia, PhD,*,§ and Karen H. Seal, MD, MPH*,¶

Methods: Study 2

- Prospective cohort of 99 new IPT patients
- Data collected at baseline and after 3rd visit or discharge (whichever came first)
- Survey included standardized, validated patient report measures:
  - Current Opioid Misuse Measure (COMM)
  - Brief Pain Inventory (BPI)
  - Pain Catastrophizing Scale (PCS)
- Paired t-tests and Wilcoxon signed-ranks test used to evaluate differences

Gibson et al., *Pain Med* 2020

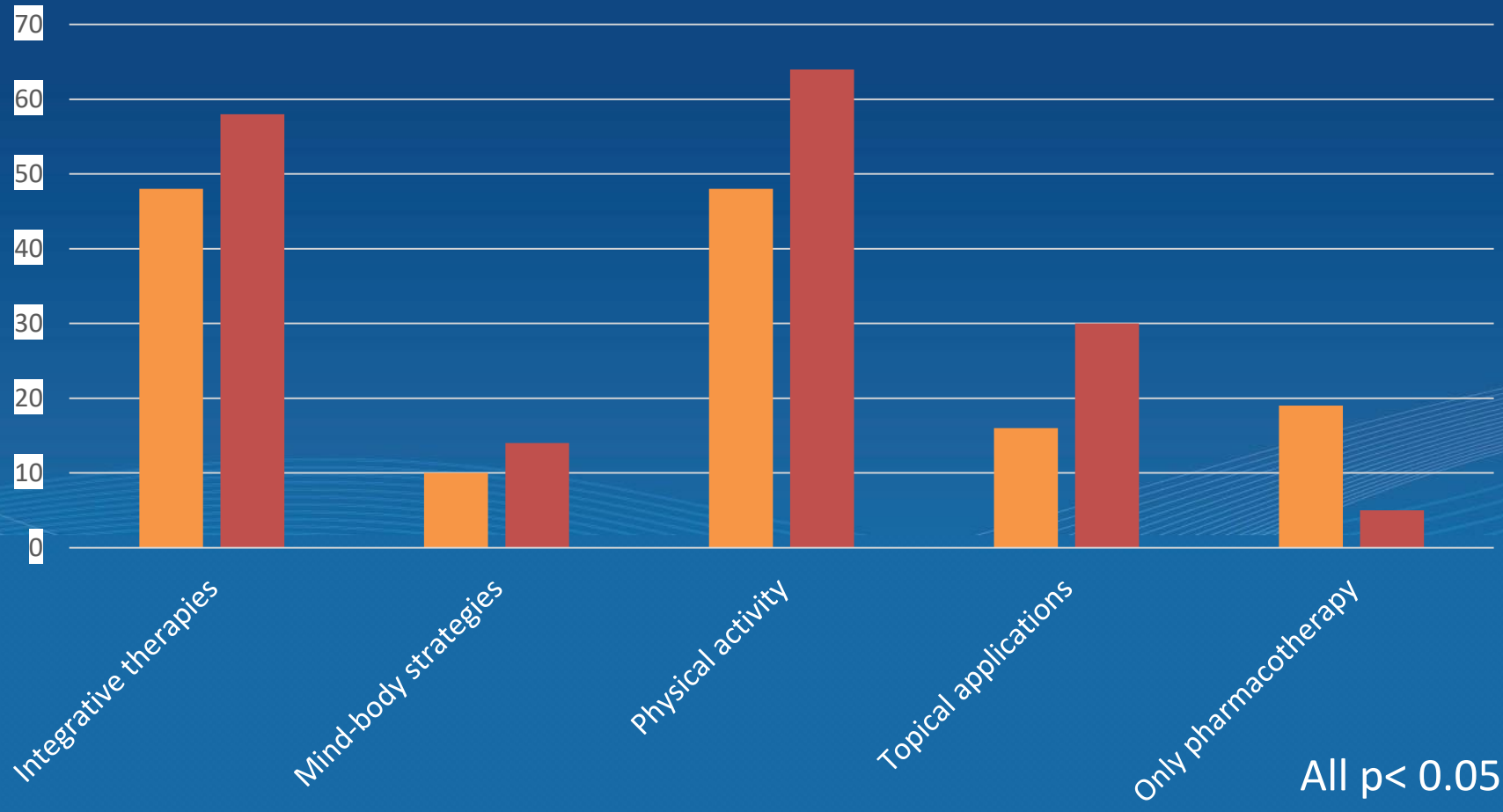
Change in Pain and Opioid Outcomes in Veterans enrolled in IPT



*P< 0.05

Gibson et al., *Pain Med* 2020

Change in Use of Non-pharmacological Treatments in Veterans enrolled in IPT



All p< 0.05

Gibson et al., *Pain Med* 2020

Pain Medicine 2017; 0: 1–16
doi: 10.1093/pm/pnx254

OXFORD

Original Research Article

The Integrated Pain Team: A Mixed-Methods Evaluation of the Impact of an Embedded Interdisciplinary Pain Care Intervention on Primary Care Team Satisfaction, Confidence, and Perceptions of Care Effectiveness

Natalie Purcell, PhD, MPA,*,† Kara Zamora, MA,* Jenny Tighe, MSPH,* Yongmei Li, PhD,* Mathew Douraghi, MA,* and Karen Seal, MD, MPH*,†

*San Francisco Veterans Affairs Health Care System,

interviews of 61 primary care providers, other primary care team members, and organizational stakeholders; and 2) a supplementary quantitative survey of 65 providers, comparing those who had referred patients to IPT with those who had not.

Provider Experiences with IPT: Study 3

Objective: Evaluate IPT's impact on primary care team satisfaction, stress and burnout, and PCP's self-confidence in managing their patients' pain.

Mixed Methods:

1) Qualitative semi-structured interviews of PCPs, primary care team members, and other stakeholders (n=61)
2) Quantitative survey of PCPs, comparing those who had referred patients to IPT with those who had not (n=65)

Purcell et al., *Pain Med* 2018

Provider Experiences with IPT: Results

- IPT reduced PCPs' struggles with patients over opioids; allowed providers time for patients' other health concerns.
- IPT improved patient education re: pain and opioids and provided patients and PCPs practical pain care plans.
- BUT, PCPs who had referred patients to IPT did not have more self-efficacy than other providers regarding their own pain care skills.

Conclusions: Integrating IPT into primary care can provide needed support to primary care, but more provider education and skill-building re: non-opioid pain management is needed.

Purcell et al., *Pain Med* 2018

Integrative Medicine for Chronic Pain Management - Original Article

Patient Experiences With Integrated Pain Care: A Qualitative Evaluation of One VA's Biopsychosocial Approach to Chronic Pain Treatment and Opioid Safety

Global Advances in Health and Medicine
Volume 8: 1–8

DOI: 10.1177/2164956119838845
journals.sagepub.com/home/gam
SAGE

Natalie Purcell, PhD, MPA[1,2], Kara Zamora, MA[1,2], Carolyn Gibson, PhD[1,2], Jennifer Tighe, MSPH[1], Jamie Chang, PhD[1,3], Joseph Grasso, PhD[1], and Karen H Seal, MD, MPH[1,2]

Patient Experiences with IPT: Study 4

Objective: To conduct an in-depth examination of patients' experiences with IPT.

Method: Qualitative semi-structured interviews with veterans who received care from IPT (n=41).

Interview Topics:

- IPT's impact on pain, functioning, and QOL.
- Overall experience with IPT, what worked/didn't work
- Recommendations to improve IPT care.

Purcell et al.*, Global Adv Health Med*, 2019

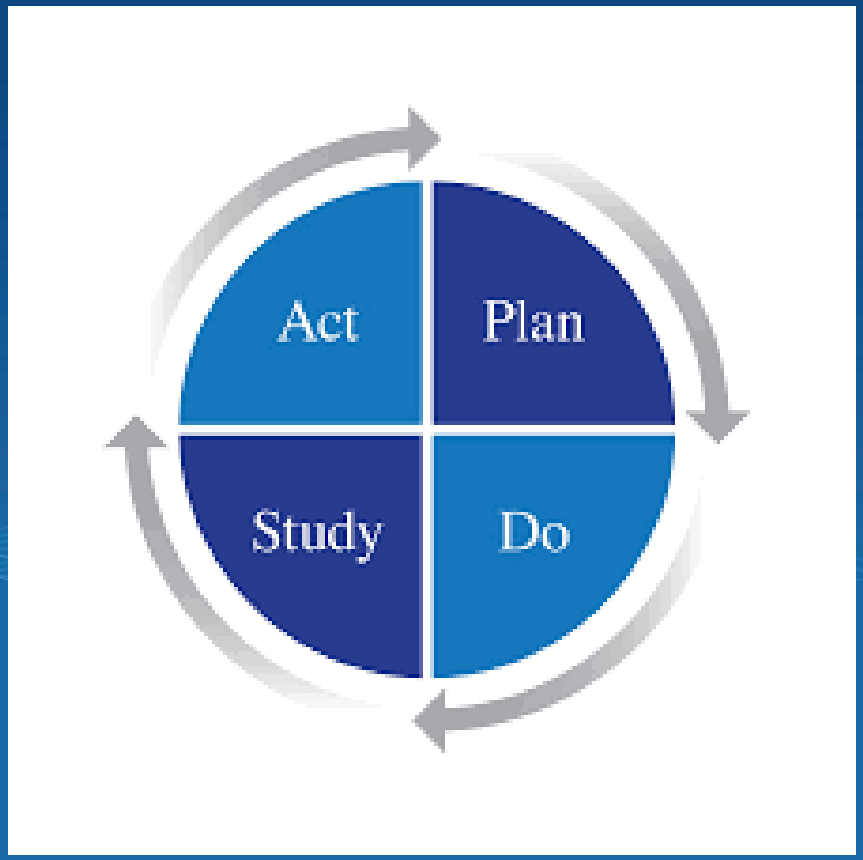
Patient Experiences with IPT: Results

Patients most likely to be satisfied with IPT care and report positive changes in pain were those who:

- Discussed and agreed to IPT referral prior to their first IPT visit.
- Had a basic understanding of IPT's structure/function before starting IPT care.
- Had experienced adverse outcomes with opioids; were interested in tapering or ready to make a change.
- Interested in nonpharmacological pain management.

Purcell et al., *Global Adv Health Med*, 2019

How to make QI Results Actionable



- QI team provided feedback about study results with IPT members.
- Action plans created:
  - e.g., consult modified to indicate that PCP had discussed IPT referral with patients in advance.
  - e.g., IPT discharge note included clear blueprint for PCP to continue IPT's pain management plan.

ORIGINAL ARTICLE

Tailored to Fit

How an Implementation Framework Can Support Pragmatic Pain Care Trial Adaptation for Diverse Veterans Affairs Clinical Settings

Natalie Purcell, PhD, MPA,† William C. Becker, MD,‡§ Kara A. Zamora, MA,*†*
Sarah L. McGrath, MA, Hildi J. Hagedorn, PhD,‖¶ Eva R. Fabian, MPH,**
Nicole McCamish, MA, and Karen H. Seal, MD, MPH*†*

(*Med Care* 2020;58: S80–S87)

Acknowledgements

- HSR&D QUERI
- Veterans living with chronic pain who participated
- Participating PCPs and PACT staff
- IPT providers themselves:
  - Caitlin Garvey, NP; Christina Tat, Pharm D; Erin Watson, PhD; Payal Mapara, PhD; Beth Son, Pharm D; Andrea Lynn, RN; Cecelia Bess, PhD; Hector Cereceres, LVN.

Improving Measurement of Functional Status in VA Primary Care Clinics

Rebecca Brown MD, MPH

Attending Physician, Crescenz VA Medical Center
Assistant Professor of Medicine, Penn Geriatrics

Overview

- **Introduction**
- **Current approaches to measuring function at VA**
- **Improving measurement**
  - QUERI project
- **Next steps**

What is functional status?

- **Ability to perform daily activities**
  - Basic activities of daily living
  - Instrumental activities of daily living

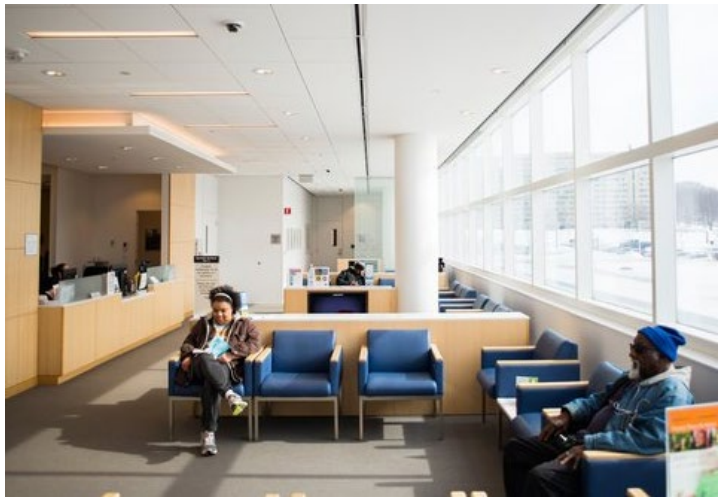
Why is function important?

- **Difficulty/needing help with daily activities common**
- **Function strongly predicts adverse outcomes**
- **Outcome older adults care about most**

Walter LC, JAMA 2001; Fried T, JAGS 2011

Clinic: the status of functional status

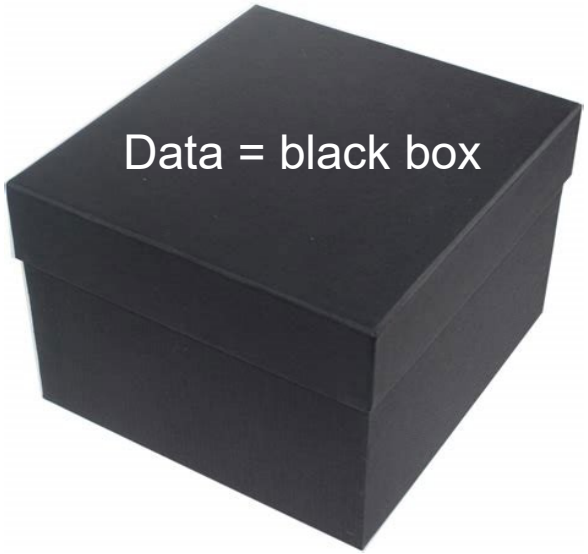
- **Understanding function key to provide optimal care**
- **Yet seldom assessed**



Bierman 2001, Bogardus 2001, Calkins 1991

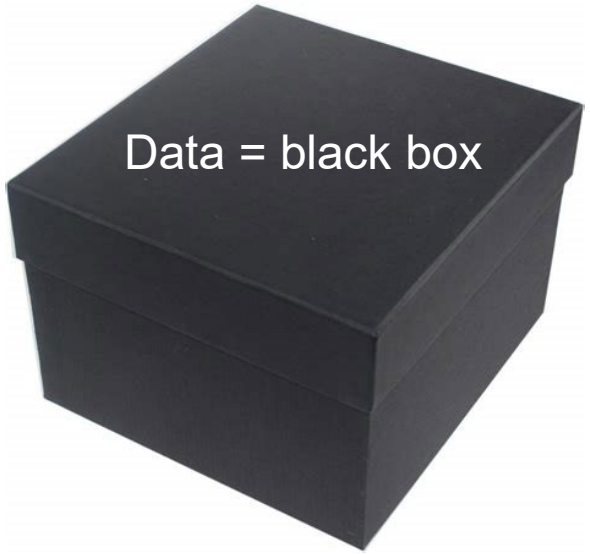
VA: leader in addressing gap

- **2009: Started collecting functional status data**
  - Patient triage: clinical reminder mechanism
- **Potential to inform care & research**
- **Unclear how accurate**



Validation study…poor accuracy

- **Compared accuracy of VA data to reference standard**
  - Low Se, high Sp
- **Why? Challenges with using reminder**
  - Cumbersome
  - Only detecting most obviously impaired



Brown RT et al, *PLoS ONE*, 2017

How to better identify/manage impairment?

- **VA QUERI grant: implementation science framework**
- **Aim 1**
  - Identify barriers and facilitators to measuring functional status and using data to improve care
- **Aims 2/3**
  - Develop, implement, evaluate pilot intervention to improve measurement and use of data

QUERI
VA Quality Enhancement Research Initiative

Methods

- **Aim 1: barriers/facilitators**
  - Qualitative interviews with key stakeholders
  - Consolidated Framework for Implementation Research (CFIR)
- **Aim 2: develop & implement pilot intervention**
  - Map findings to intervention elements
  - Expert Recommendations for Implementing Change
- **Aim 3: evaluate pilot**
  - Evaluate impact of intervention on implementation outcomes and preliminary effectiveness outcomes

Methods: Aim 1 – sampling

- **Providers and operations: 6 medical centers**
  - Varying approaches to measurement
- **Patients and caregivers: 1 medical center**
  - Local to allow in-person interviews

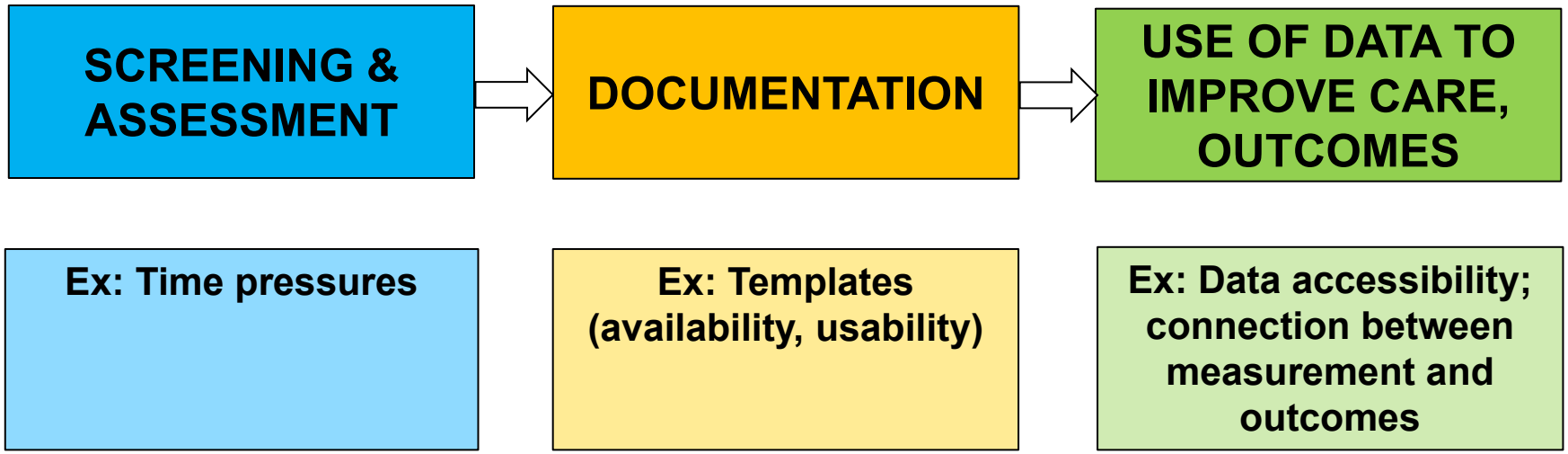
Aim 1 participants

- 33 patients and caregivers
- 24 primary care providers (MD/DO, NP)
- 23 front-line staff (RN, LVN, MA)
- 10 social workers
- 19 informatics/performance measurement experts
- 12 health systems leaders

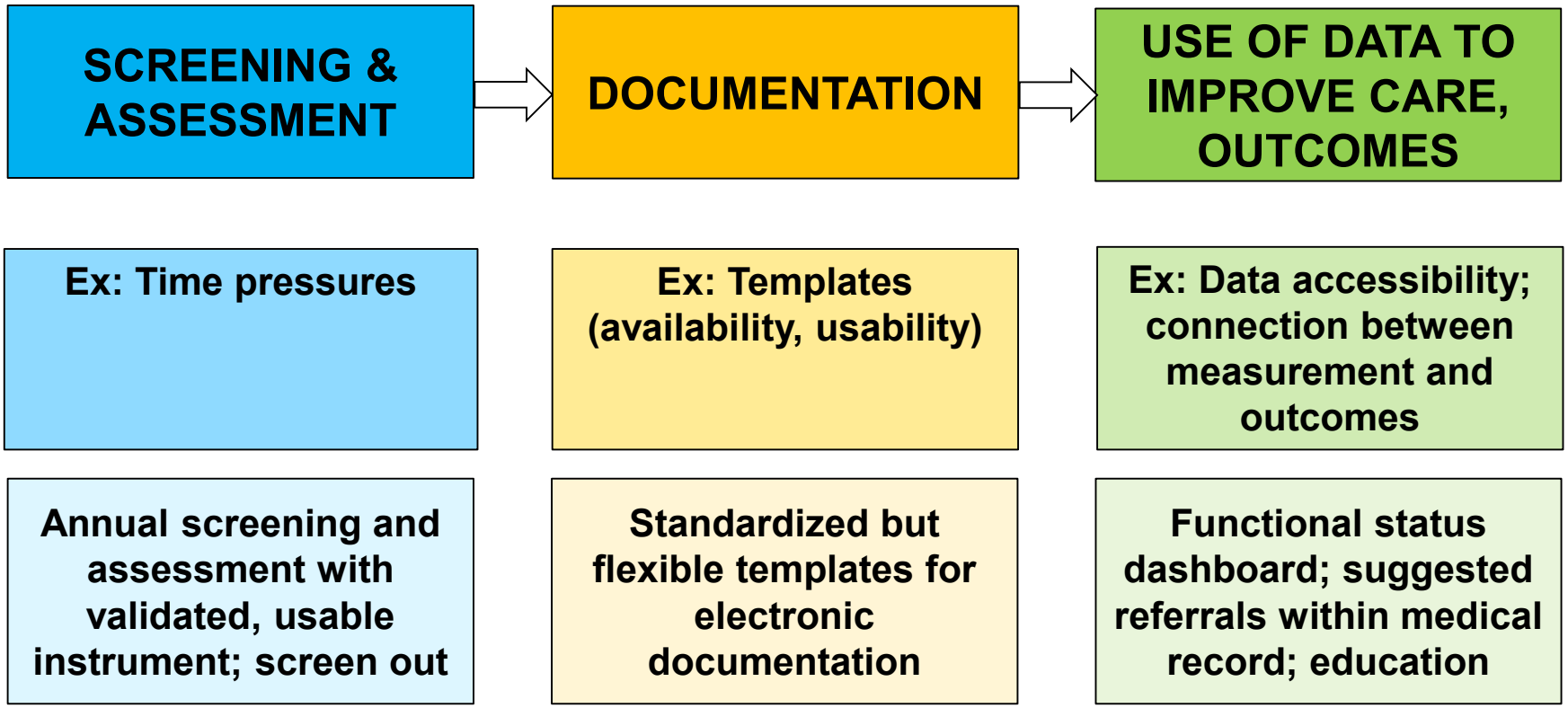
Results: 3 aspects of measurement

Spar MJ et al, *Fed Pract*, 2017
Nicosia FN et al, *JAGS*, 2018

Results: Aim 1 (barriers/facilitators)



Results: Aim 2 (develop/implement)



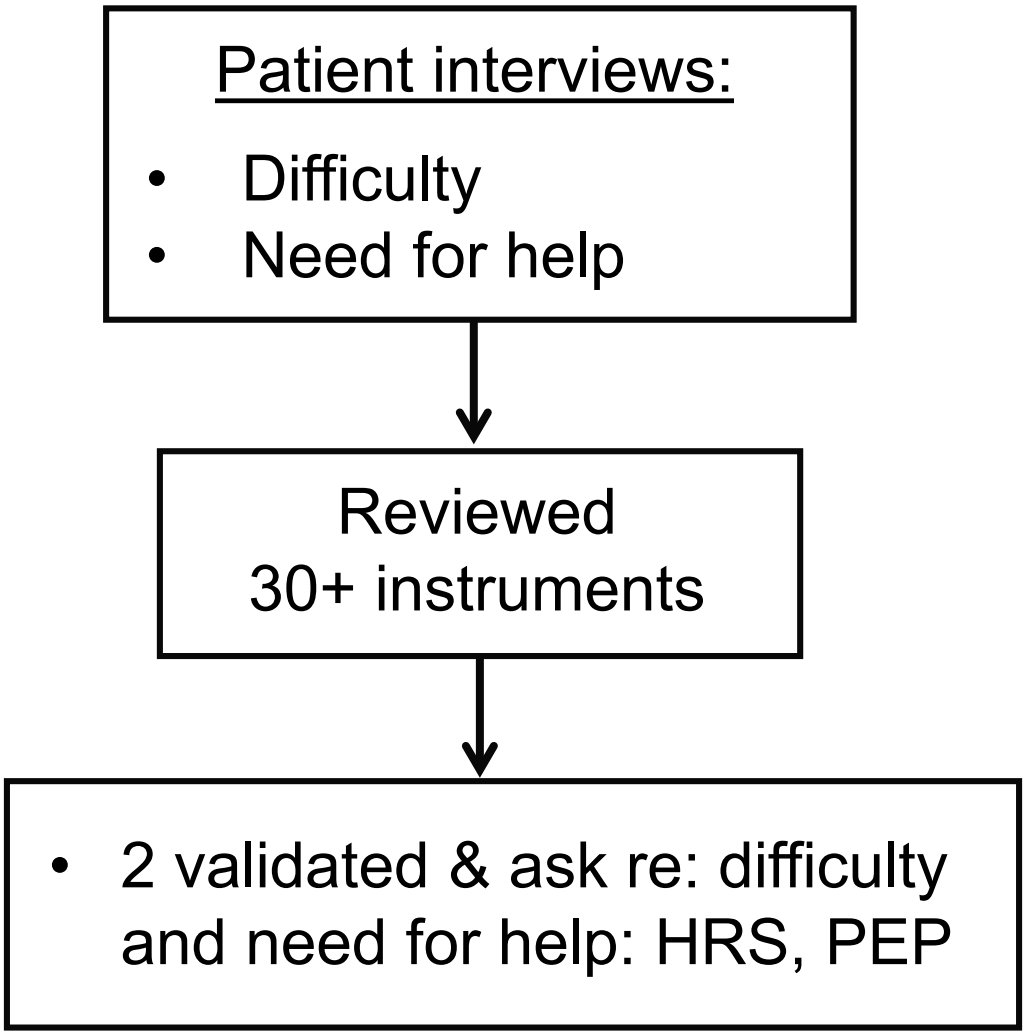
Clinical reminder: 2 parts

- **Goal: address barrier of time pressures and reminder burden for front-line staff**
  - Part 1: Initial brief screener
  - Part 2: Full reminder for those who screen in

Clinical reminder: initial screener

- **Wording from American Community Survey**
- **ADLs/IADLs which are most commonly impaired**
  - Do you have any difficulty shopping for groceries or preparing a meal?
    - YES → full IADL screener
    - NO → proceed to ADL brief screener
  - Do you have any difficulty with bathing or dressing?
    - YES → full ADL screener
    - NO → done

Full reminder: difficulty & need for help



Old vs. new reminder

Old reminder

- Cumbersome, lengthy
- Manually add score
- Data into “black box”

New reminder

- Initial brief screener
- Automatically add score
- Clear wording re: difficulty and need for help
- Provider alert for positive screen

Aim 2: Pilot intervention

- Annual screening for Vets 75+
- Improved clinical reminder
- Provider note template
- Interdisciplinary training
- Adaptable workflows
- Dashboard

Aim 3: Evaluation

- **Implementation outcomes**
  - Acceptability
  - Adoption
  - Fidelity
  - Adaptability
- **Process outcomes**
  - Screening rates
  - Referral rates
- **Preliminary effectiveness outcomes**
  - Health care utilization
  - Function

Conclusion

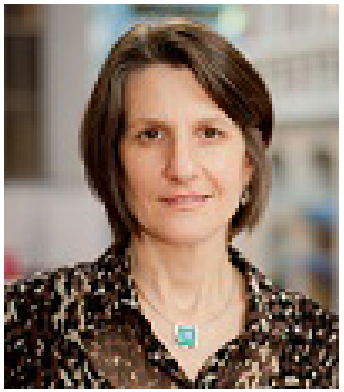
- **Current approaches to measuring functional status have challenges**
  - Cumbersome
  - Inaccurate
- **Incorporating stakeholder perspectives is a promising approach to develop acceptable and effective methods for measuring function**

Study team

Rebecca Brown, MD, MPH
Principal Investigator

Michael Steinman, MD
Co-investigator

Francesca Nicosia, PhD
Qualitative Methodologist



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Medical Sociologist

Malena Spar, BA
Research Coordinator

Molly Silvestrini, BA
Research Coordinator

Maureen Barrientos, BA
Research Coordinator

Anael Rizzo, BA
Research Coordinator

Accelerating Implementation of Evidence-Based Therapies

- Overview of the VA Quality Enhancement Research Initiative
- Improving colonoscopy quality (Dr. Kaltenbach)
- Enhancing chronic pain management (Dr. Seal)
- Standardizing Measurement of Functional Status (Dr. Brown)
- Expanding participation in cardiac rehabilitation (Dr. Whooley)

CARDIAC REHABILITATION

CardioSmart
American College of Cardiology

What is CARDIAC REHABILITATION?

1 Regular Exercise

From supervised activities, to a daily walk in the park, the idea is to get moving.

2 Adopt a Heart Healthy Diet

This includes meals that are low in salt and rich in whole grains, fruits, vegetables, low-fat meats and fish.

3 Reduce Stress

Learn to control your daily stress through relaxation techniques, recreation, music and other various methods.

4 Medical Therapy

Follow your doctor's instructions carefully and take your medications as directed.

5 Stop Smoking

Most cardiac rehab programs offer methods to help you kick this harmful habit.

For more information, visit CardioSmart.org/CardiacRehab

Performance Measures from American Medical Association Physician Consortium for Performance Improvement

ACCF/AHA/AMA–PCPI Performance Measures

ACCF/AHA/AMA–PCPI 2011 Performance Measures for Adults With Coronary Artery Disease and Hypertension

A Report of the American College of Cardiology Foundation/American Heart Association Task Force on Performance Measures and the American Medical Association–Physician Consortium for Performance Improvement

Developed in Collaboration With the American Academy of Family Physicians, American Association of Cardiovascular and Pulmonary Rehabilitation, American Association of Clinical Endocrinologists, American College of Emergency Physicians, American College of Radiology, American Nurses Association, American Society of Health-System Pharmacists, Society of Hospital Medicine, and Society of Thoracic Surgeons

Drozda et al. Circulation. 2011;124:248-270

Patients Should be Referred to Cardiac Rehabilitation After:

- Acute myocardial infarction
- Coronary artery bypass grafting
- Percutaneous coronary intervention
- Cardiac valve surgery
- Heart transplantation

Class I Recommendation

Level of Evidence A

Drozda et al. Circulation. 2011;124:248-270

Geographic Variation in Cardiac Rehabilitation Participation in Medicare and Veterans Affairs Populations

Opportunity for Improvement

Editorial, see p 1909

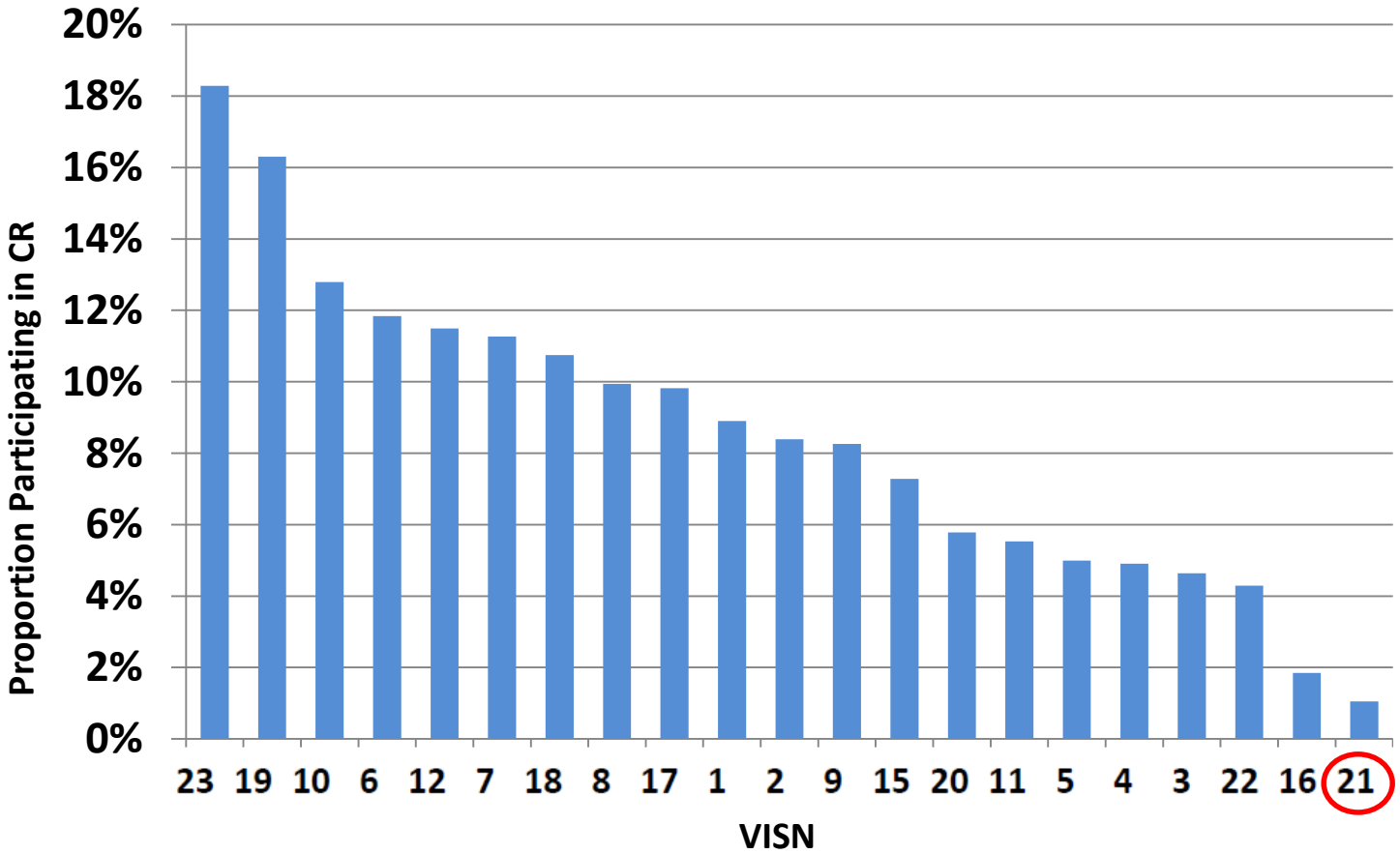
Alexis L. Beatty, MD, MAS
Michael Truong, MS
David W. Schopfer, MD, MAS
Hui Shen, MS
Justin M. Bachmann, MD, MPH
Mary A. Whooley, MD

BACKGROUND: Cardiac rehabilitation is strongly recommended after myocardial infarction, percutaneous coronary intervention, or coronary artery bypass surgery, but it is historically underused. We sought to evaluate variation in cardiac rehabilitation participation across the United States.

METHODS: From administrative data from the Veterans Affairs (VA) healthcare system and a 5% Medicare sample, we used International Classification of Diseases, 9th Revision codes to identify patients hospitalized for myocardial infarction, percutaneous coronary intervention, or coronary artery bypass surgery from 2007 to 2011. After excluding patients who died in ≤30 days of hospitalization, we calculated the percentage of patients who participated in ≥1 outpatient visits for cardiac rehabilitation during the 12 months after hospitalization. We estimated adjusted and standardized rates of participation in cardiac rehabilitation by state using hierarchical logistic regression models.

Circulation. 2018;137:1899–1908. DOI: 10.1161/CIRCULATIONAHA.117.029471

Only 10% of Eligible Veterans Participated in Cardiac Rehabilitation (FY2007-FY2011), *Schopfer et al, JAMA Int Med 2014*



CARDIAC REHABILITATION

Factors Associated With Utilization of Cardiac Rehabilitation Among Patients With Ischemic Heart Disease in the Veterans Health Administration

→ Geographic distance the largest barrier!

David W. Schopfer, MD, MAS; Susan Priano, RN, MSN; Kelly Allsup, BS; Christian D. Helfrich, PhD; P. Michael Ho, MD, PhD; John S. Rumsfeld, MD, PhD; Daniel E. Forman, MD; Mary A. Whooley, MD

J Cardiovasc Pulm Rehab 2016

Veterans Health Administration

The Design and Implementation of a Home-Based Cardiac Rehabilitation Program

Gregory Rohrbach, DNP; David W. Schopfer, MD; Nirupama Krishnamurthi, MBBS, MPH; Mark Pabst, MPH; Michael Bettencourt; Jo Loomis, DNP; Mary A. Whooley, MD

A home-based cardiac rehabilitation program improves access and enrollment by using an evidence-based alternative model of care.

Federal Practitioner; May 2017:30-35

http://www.sanfrancisco.va.gov/services/HealthyHeart_.asp

Healthy Heart Program

- A to Z List of Services
- Caregivers
- Homeless Veterans
- Returning Service Members
- Women Veterans

HEALTHY HEART PROGRAM

Take control of your life.

Begin your journey to a healthier heart!

Introduction

Cardiovascular disease affects more than 1 in 3 American adults and is the leading cause of death in the United States. The Healthy Heart Program is a free, 12-week, home-based, customized exercise and lifestyle program that is intended to help Veterans achieve and maintain optimal cardiovascular health.

CONTACT INFO

Location

Building 203, 1st Floor, Room 1A-13A

Contact Number(s)

415-750-2016

Hours of Operation

Monday - Friday
8 a.m. - 4:30 p.m.

http://www.sanfrancisco.va.gov/services/HealthyHeart_.asp

Effects of Home-Based Cardiac Rehabilitation on Time to Enrollment and Functional Status in Patients With Ischemic Heart Disease

J Am Heart Assoc. 2020; DOI: 10.1161/JAHA.120.016456

David W. Schopfer, MD, MAS; Mary A. Whooley, MD; Kelly Allsup, BS; Mark Pabst, MPH; Hui Shen, MS; Gary Tarasovsky, BS; Claire S. Duvernoy, MD; Daniel E. Forman, MD

BACKGROUND: Cardiac rehabilitation is an established performance measure for adults with ischemic heart disease, but patient participation is remarkably low. Home-based cardiac rehabilitation (HBCR) may be more practical and feasible, but evidence regarding its efficacy is limited. We sought to compare the effects of HBCR versus facility-based cardiac rehabilitation (FBCR) on functional status in patients with ischemic heart disease.

METHODS AND RESULTS: This was a pragmatic trial of 237 selected patients with a recent ischemic heart disease event, who enrolled in HBCR or FBCR between August 2015 and September 2017. The primary outcome was 3-month change in distance completed on a 6-minute walk test. Secondary outcomes included rehospitalization as well as patient-reported physical activity, quality of life, and self-efficacy. Characteristics of the 116 patients enrolled in FBCR and 121 enrolled in HBCR were similar, except the mean time from index event to enrollment was shorter for HBCR (25 versus 77 days; $P<0.001$). As compared with patients undergoing FBCR, those in HBCR achieved greater 3-month gains in 6-minute walk test distance (+95 versus +41 m; $P<0.001$). After adjusting for demographics, comorbid conditions, and indication, the mean change in 6-minute walk test distance remained significantly greater for patients enrolled in HBCR (+101 versus +40 m; $P<0.001$). HBCR participants reported greater improvements in quality of life and physical activity but less improvement in exercise self-efficacy. There were no deaths or cardiovascular hospitalizations.

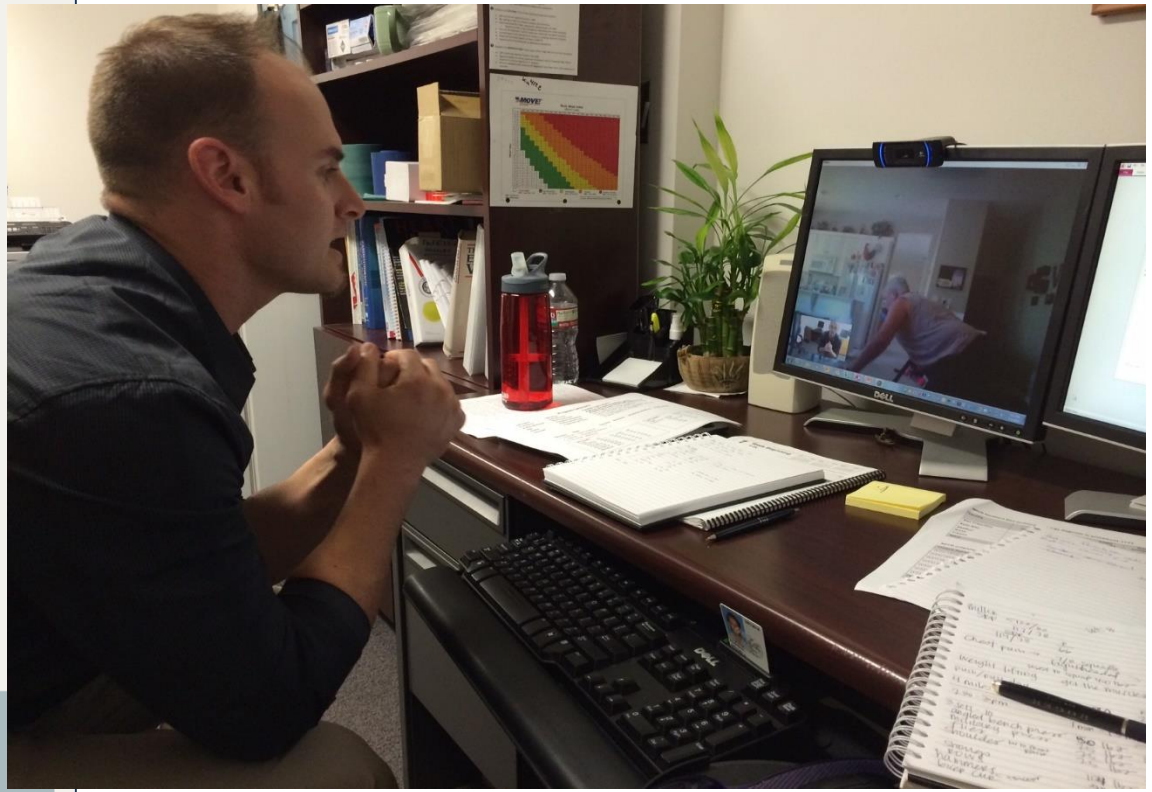
CONCLUSIONS: Patients enrolled in HBCR achieved greater 3-month functional gains than those enrolled in FBCR. Our data suggest that HBCR may safely derive equivalent benefits in exercise capacity and overall program efficacy in selected patients.

VHA Office of Rural Health

Congress established the Veterans Health Administration (VHA) Office of Rural Health (ORH) in 2006 (38 USC § 7308) to conduct, coordinate, promote and disseminate research on issues that affect the nearly five million Veterans who reside in rural communities. The mandate also requires ORH to develop, refine and promulgate policies, best practices, lessons learned, and innovative and successful programs.

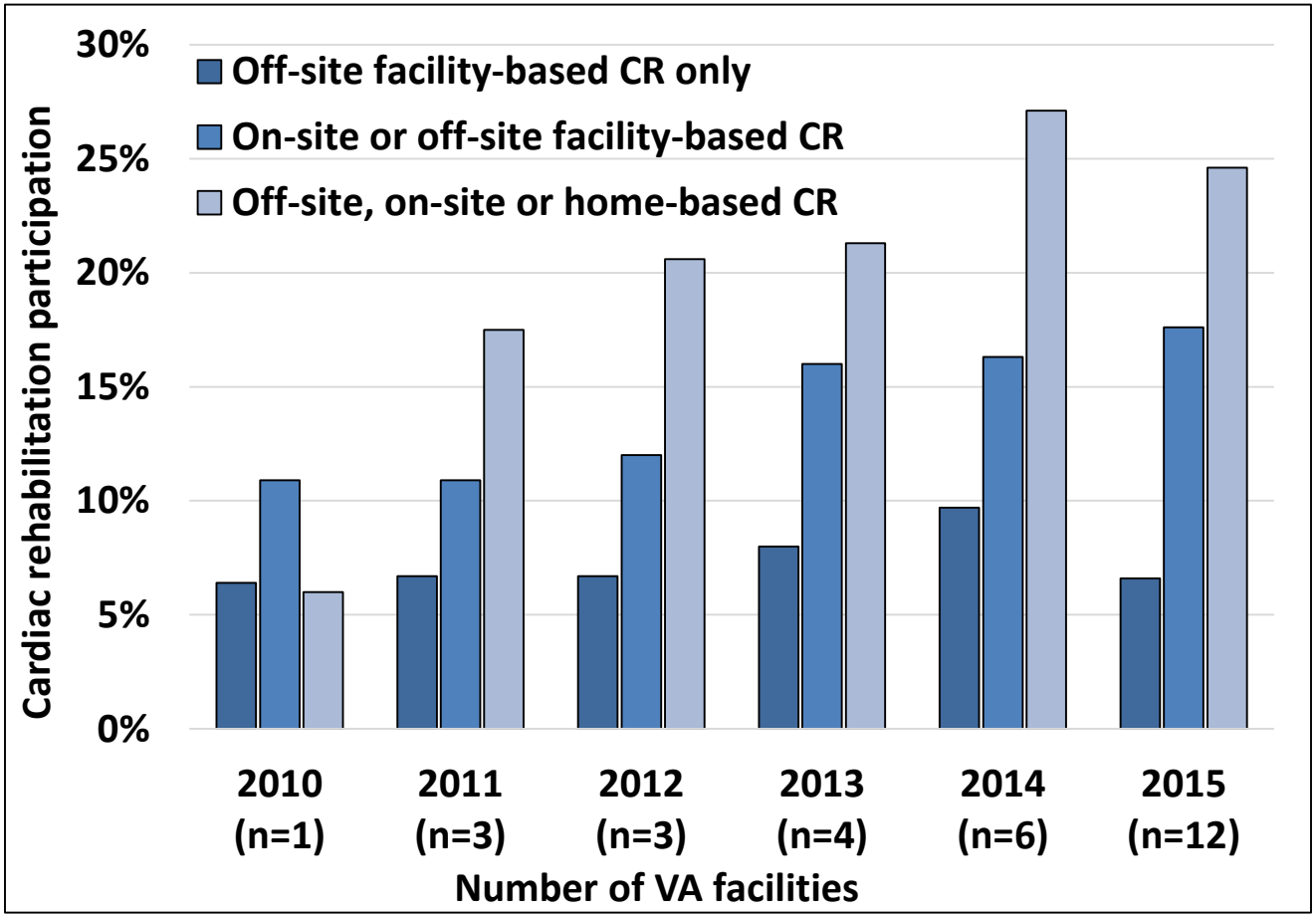
ORH fulfils its mission by supporting targeted research, developing innovative programs and identifying new care models. Working through its five Veterans Rural Health Resource Centers as well as partners from academia, state and local governments, private industry and non-profit organizations, ORH strives to break down the barriers separating rural Veterans from quality care.

Program & Research Support



https://www.ruralhealth.va.gov/index.asp

Availability of home-based CR → quadrupled participation



Schopfer et al, JAMA-Int Med, 2018

Predictors of Patient Participation and Completion of Home-Based Cardiac Rehabilitation in the Veterans Health Administration for Patients With Coronary Heart Disease

Nirupama Krishnamurthi, MBBS, MPH[a,b], David W. Schopfer, MD, MAS[a,b], Tara Ahi, BS[a], Michael Bettencourt, MBA[b], Kimberly Piros, RN[b], Rebecca Ringer, RD[b], Hui Shen, MS[b], Janice P. Kehler, PT, MSC, MA[d], and Mary A. Whooley, MD[a,b,c,*]

Traditional, facility-based cardiac rehabilitation (CR) is vastly underutilized in the United States. The Veterans Health Administration (VA) has developed new home-based cardiac rehabilitation (HBCR) programs to address this issue. However, the characteristics of patients who choose HBCR are unknown. We sought to determine predictors of participation and completion of HBCR at the San Francisco VA (SFVA). We evaluated patients hospitalized for ischemic heart disease between 2013 and 2016 at SFVA. Logistic regression models were used to identify predictors of participation and completion of HBCR. In 724 patients with ischemic heart disease who were eligible for CR between 2013 and 2016, 314 (43%) enrolled in HBCR. Older age was associated with lower odds of participation in HBCR (odds ratio [OR] 0.84; $p < 0.01$). Additionally, patients with coronary artery bypass grafting (CABG) were twice as likely as those with percutaneous coronary intervention to participate in HBCR (OR 2.03; 95% confidence interval 1.40, 2.97). In HBCR participants, 48% (150/314) completed ≥ 9 sessions. Patients with CABG were twice as likely as those with percutaneous coronary intervention to complete the HBCR program (OR 2.02; 95% confidence interval 1.18, 3.44). There were no differences in participation or completion rates by gender, race, ethnicity, or rurality. Our study showed that the SFVAMC HCBR program achieved a 43% participation rate, well above the VA average of 13%. There were no disparities by gender, race, or rurality in terms of participation and adherence. CABG as the indication for CR was the most significant predictor of participation and completion of HBCR. **(Am J Cardiol 2019;123:19−24)**

Patient Perspectives on Declining to Participate in Home-Based Cardiac Rehabilitation

A MIXED-METHODS STUDY

David W. Schopfer, MD, MAS; Francesca M. Nicosia, PhD; Linda Ottoboni, PhD, RN; Mary A. Whooley, MD

Purpose: A minority of eligible patients participate in cardiac rehabilitation (CR) programs. Availability of home-based CR programs improves participation in CR, yet many continue to decline to enroll. We sought to explore among patients the rationale for declining to participate in CR even when a home-based CR program is available.

Methods: We conducted a mixed-methods evaluation of reasons for declining to participate in CR. Between August 2015 and August 2017, a total of 630 patients were referred for CR evaluation during index hospitalization (San Francisco VA Medical Center). Three hundred three patients (48%) declined to participate in CR. Of these, 171 completed a 14-item survey and 10 patients also provided qualitative data through semistructured phone interviews.

Results: The most common reason, identified by 61% of patients on the survey, was "I already know what to do for my heart." Interviews helped clarify reasons for nonparticipation and identified system barriers and personal barriers. These interviews further highlighted that declining to participate in CR was often due to competing life priorities, no memory of the initial CR consultation, and inadequate understanding of CR despite referral.

ditional facility-based programs. Distance and travel issues are known barriers to participation among veterans.[6] In response to these barriers, the Veterans Health Administration (VA) has been implementing home-based CR programs. Home-based CR is increasingly becoming recognized as an alternative delivery method of CR for some individuals who may not otherwise participate in traditional CR.[7]

Recent investigation into CR programs in VA has shown that the availability of a home-based CR program has improved participation in CR.[5,8] Yet, participation in CR remains well below the recommended goal of 70%.[5,9] Reasons patients gave for declining to participate in CR when a home-based CR program is available have not been previously investigated. Identification of barriers to participation is critical to improving patient engagement in CR program from recruitment to enrollment to participation. We conducted a mixed-methods study to identify barriers related to decision by patients to decline to participate in CR despite the availability of a home-based CR program.

METHODS

Journal of Cardiopulmonary Rehabilitation and Prevention 2020;00:1-6

Scientific Statement jointly published by three societies

Home-Based Cardiac Rehabilitation

A Scientific Statement From the American Association of Cardiovascular and Pulmonary Rehabilitation, the American Heart Association, and the American College of Cardiology

ABSTRACT: Cardiac rehabilitation (CR) is an evidence-based intervention that uses patient education, health behavior modification, and exercise training to improve secondary prevention outcomes in patients with cardiovascular disease. CR programs reduce morbidity and mortality rates in adults with ischemic heart disease, heart failure, or cardiac surgery but are significantly underused, with only a minority of eligible patients participating in CR in the United States. New delivery strategies are urgently needed to improve participation. One potential strategy is home-based CR (HBCR). In contrast to center-based CR services, which are provided in a medically supervised facility, HBCR relies on remote coaching with indirect exercise supervision and is provided mostly or entirely outside of the traditional center-based setting. Although HBCR has been successfully deployed in the United Kingdom, Canada, and other countries, most US healthcare organizations have little to no experience with such programs. The purpose of this scientific statement is to identify the core components, efficacy, strengths, limitations, evidence gaps, and research necessary to guide the future delivery of HBCR in the United States. Previous randomized trials have generated low- to moderate-strength evidence that HBCR and center-based CR can achieve similar improvements in 3- to 12-month clinical outcomes. Although HBCR appears to hold promise in expanding the use of CR to eligible patients, additional research and demonstration projects are needed to clarify, strengthen, and extend the HBCR evidence base for key subgroups,

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Circulation. 2019; 140;e69-e89. DOI: 10.1161/CIR.0000000000000663

DEPARTMENT OF VETERANS AFFAIRS

Memorandum

VA National Director of Cardiology

Date: July 2, 2019

From: Richard Schofield MD, FACC, FAHA

Subject: Home-Based Cardiac Rehabilitation (HBCR)

To: VA Facility Directors

The VA National Office of Cardiology, in partnership with the VA Office of Rural Health, the VA Quality Enhancement Research Initiative, the VA Office of Connected Care, and the Million Hearts Cardiac Rehabilitation (CR) Collaborative, endorses providing Home-Based CR (HBCR) to clinically appropriate Veterans who (within the prior 12 months) have experienced:

- Acute Myocardial Infarction
- Percutaneous Coronary Intervention
- Coronary Artery Bypass Surgery
- Heart Failure (with preserved or reduced ejection fraction)
- Cardiac Valve Surgery
- Peripheral Artery Disease -- or --
- Cardiac Transplantation

Measurement Science QUERI 2015–2020 (Summary)

The Measurement Science QUERI addressed VHA modernization priorities by collaborating with operational partners to implement evidence-based practices that were united by the need to clearly define and continuously monitor standardized metrics to improve quality of care.

Key operational partners and alignment with VHA Modernization Priorities

Operational partners	Evidence-based practice	Modernization priority
Office of Gastroenterology	Improve measurement of colonoscopy quality	Reduce unwarranted variation
Office of Cardiology	Implement home-based cardiac rehabilitation	Mission Act: Improve access to care
Office of Patient-Centered Care	Expand integrated pain management	Engage Veterans in lifelong well-being
Office of Geriatrics and Extended Care	Standardize measurement of functional status	Commit to zero harm

QUERI
VA Quality Enhancement Research Initiative

Principal Investigators: Tonya Kaltenbach MD MS, Karen Seal MD MPH, Rebecca Brown MD MPH, and Mary Whooley MD

THANK YOU!

SFVA Research Office

- Walter Holleran, PharmD
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- Eva Lau
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- Jennifer Ransom
- Alex Smetaniuk
- Grace Tinaliga
- Tara Yule
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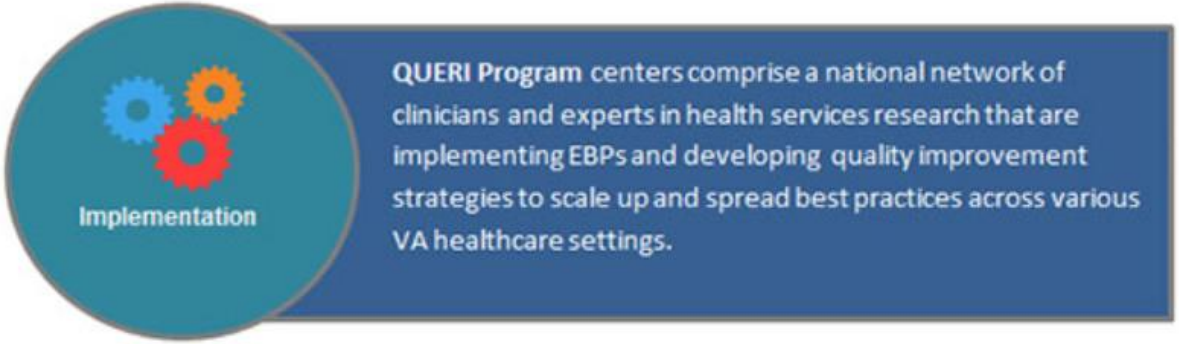
National Operational Partners

- Office of Cardiology
- Office of Gastroenterology
- Office of Geriatrics & Extended Care
- Office of Mental Health
- Office of Patient-Centered Care
- Office of Primary Care
- Office of Research & Development



https://www.queri.research.va.gov/about/default.cfm