The Patient Centered Medical Home at the VHA: The Patient Aligned Care Team (PACT)

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VA HEALTH CARE Defining EXCELLENCE in the 21st Century

U.S. Department of Veterans Affairs

Overview

- Patient Aligned Care Team (PACT) initiative: reorganization of VHA primary care practice into patient centered medical homes
- Measurement of PACT implementation
- Overview of main findings
  - Clinical outcomes
  - Staff experience
  - Cost and health care use

Veterans Health Administration (VHA)
Largest U.S. Integrated Health Care System

> 5 million primary care patients

> 16 million primary care encounters annually

160 Medical centers, 802 community base outpatient clinics

- Capitated payment system
- Regional networks
- Salaried medical staff

VHA Transformations pre-1990s to the present

Pre-1990s

- Inpatient hospitals; <10% of patients assigned to primary care
- Loosely centralized

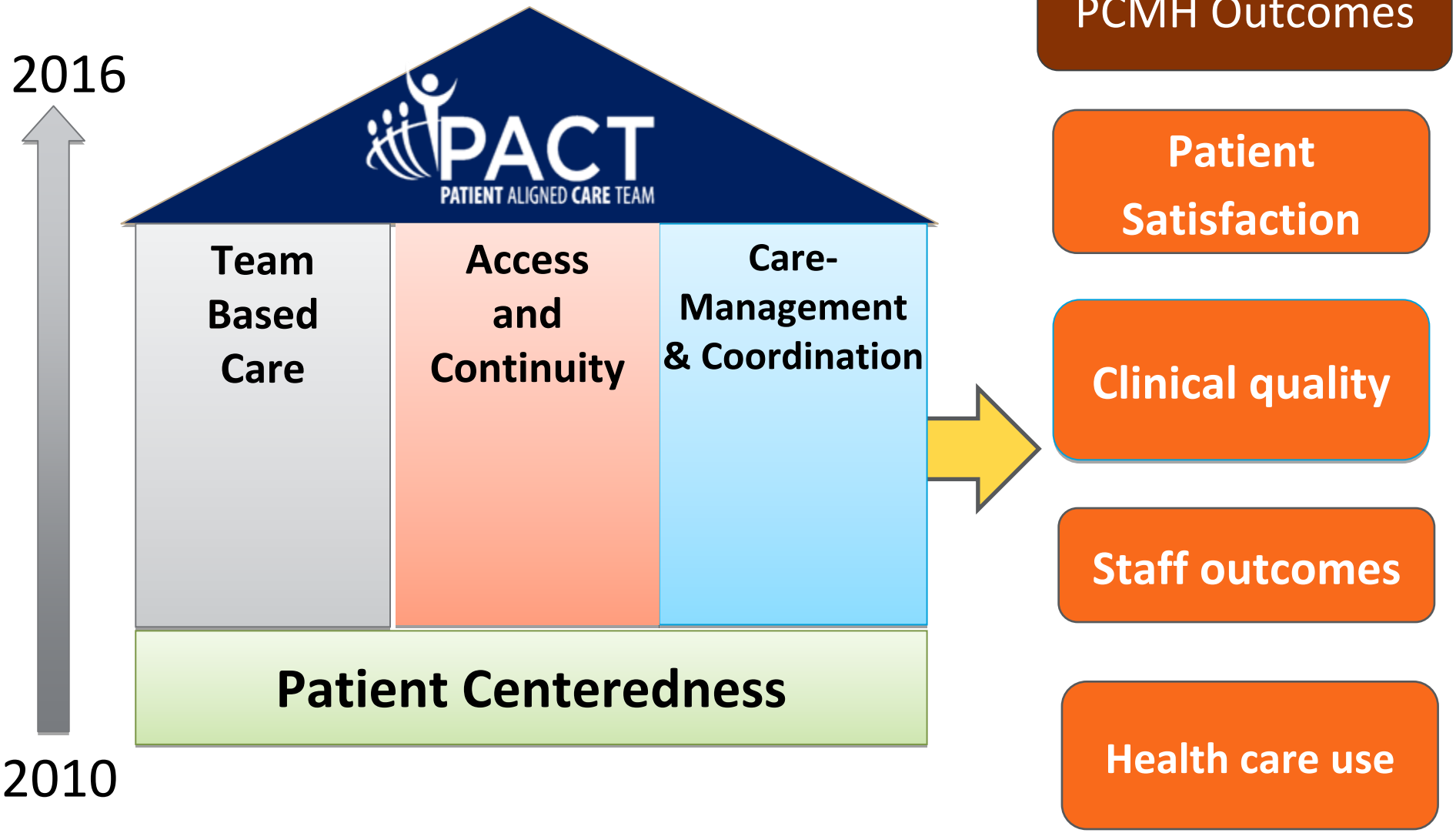
Mid-1990s

- Outpatient care – 80% of Veterans assigned to primary care
- Regional networks; funding for populations not facilities
- Universal EMR, Performance and quality improvement system

Current

- Funding for Primary Care Mental Health Integration (PC-MHI)
- Patient Aligned Care Teams (PACT)
- 95% of Veterans in VHA have assigned primary care provider

Kizer, American Journal of Medical Quality, 1999; Jha, NEJM, 2003
Kerr, Annals of Internal Medicine, 2004


2016
PACT
PATIENT ALIGNED CARE TEAM
Team Based Care
Access and Continuity
Care-Management & Coordination
Patient Centeredness
2010
PCMH Outcomes
Patient Satisfaction
Clinical quality
Staff outcomes
Health care use

VHA primary care practice re-design

AREAS OF FOCUS

- Team based care
- Expanded non face-to-face access (telephone clinics, secure messaging)
- Continuity

ELECTRONIC TOOLS

- Patient portal (Secure messaging)
- Referral management (specialty care); electronic consultation

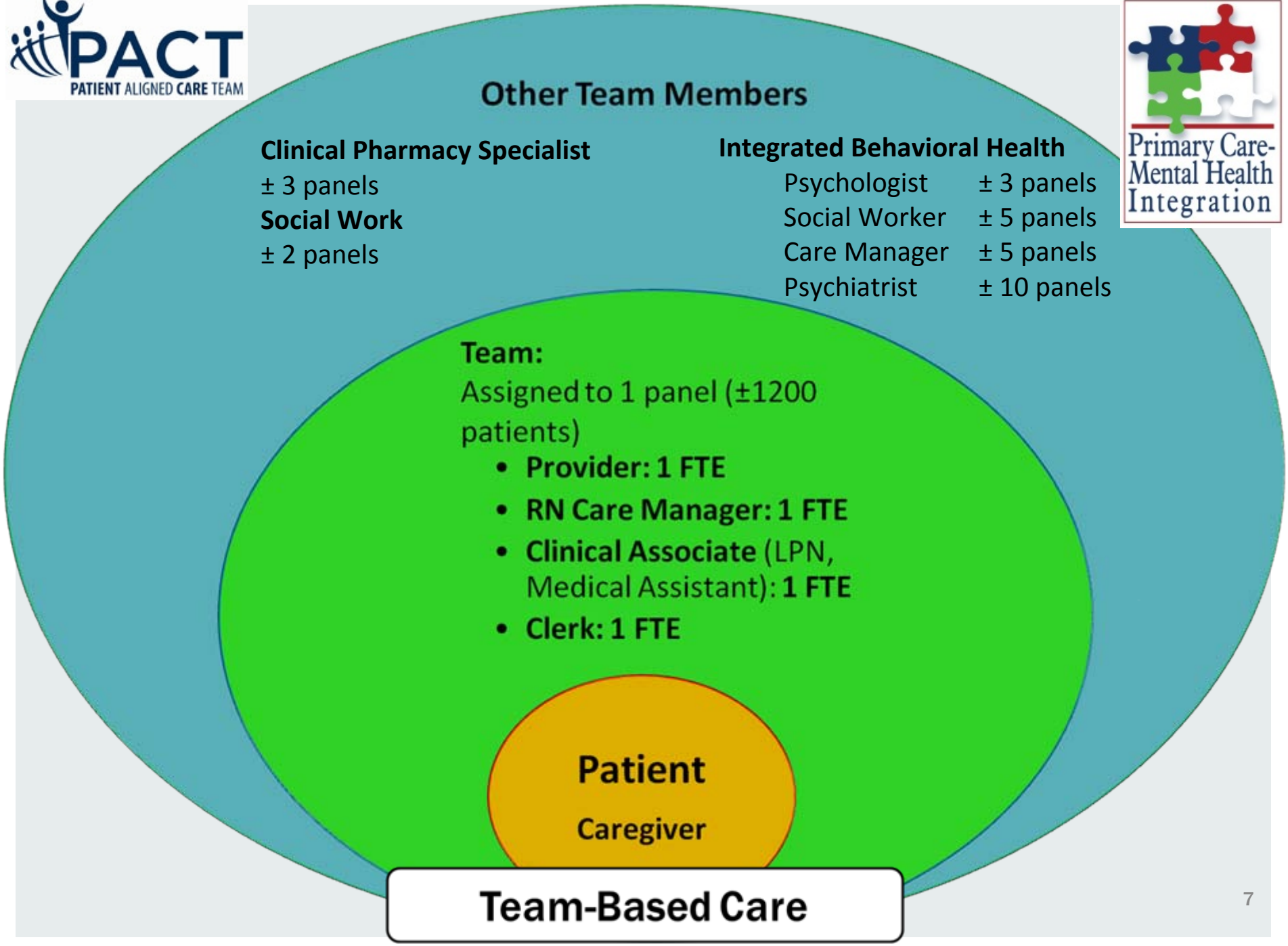
POPULATION HEALTH TOOLS (e.g. identify high risk patients)

INCREASED PRIMARY CARE SUPPORT STAFF

- from 2.3 per FTE to 3.0 per FTE primary care provider
- >1,000 RN case managers hired since 2010

TRAINING INITIATIVES FOR PACT

Rosland, *AJMC*, 2013


Other Team Members
Clinical Pharmacy Specialist
± 3 panels
Social Work
± 2 panels
Integrated Behavioral Health
Psychologist ± 3 panels
Social Worker ± 5 panels
Care Manager ± 5 panels
Psychiatrist ± 10 panels
Team:
Assigned to 1 panel (±1200 patients)
Provider: 1 FTE
RN Care Manager: 1 FTE
Clinical Associate (LPN, Medical Assistant): 1 FTE
Clerk: 1 FTE
Patient
Caregiver
Team-Based Care

CHALLENGES AND SOLUTIONS FOR THE NATIONAL EVALUATION

- No controls (implemented everywhere starting April 2010)
  - Interrupted time series analyses
  - Look for variation among sites in extent of implementation
- For some key measures, no baseline
  - Look for variation among sites in extent of implementation
- Many key changes for PACT are team care processes
  - Develop and field national survey

Challenges to Measuring Implementation for the National Evaluation

No gold standard for measuring PCMH

- ➢ NCQA is the most commonly used

VHA already had in place many features of the medical home

- ✓ Patient assigned to a primary care provider
- ✓ Universal Electronic Medical Record
- ✓ Performance & quality improvement system
- ✓ Panel management tools, e.g. disease registries
- ✓ National programs for care coordination
- ✓ Integrated behavioral and mental health services

PACT Implementation Progress Index (PI^2)

- Measures the extent of PCMH implementation in VHA
  - Utilizes existing patient, provider and administrative data
  - Reflects processes & attributes that are essential to effective primary care
- Describes variation in implementation across clinic sites
- Examines the relationship between PI^2 and key associations: patient satisfaction, staff burnout, clinical quality, and health care use

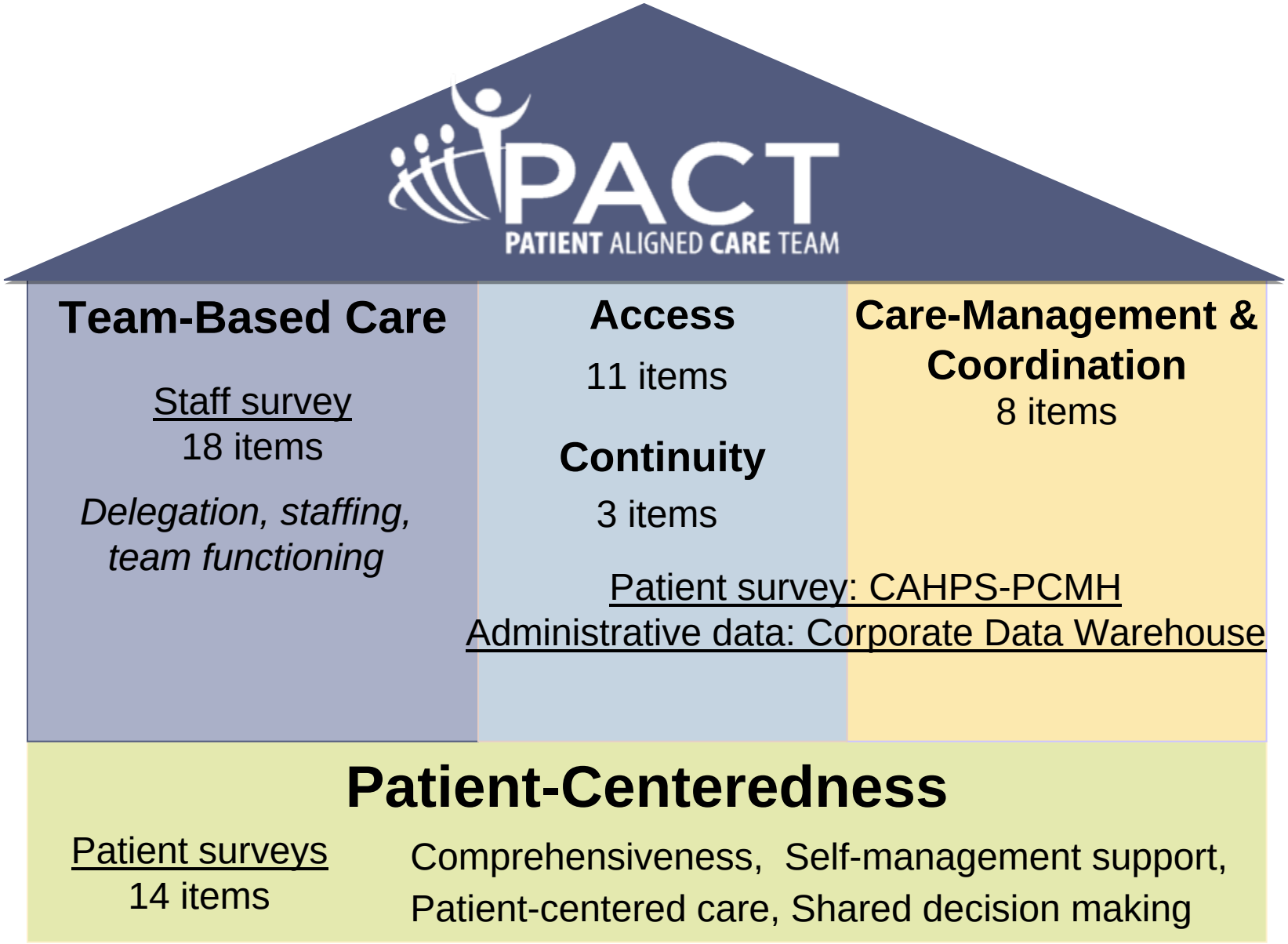
Nelson et al, *JAMA Internal Medicine,* 2014

Measuring Implementation of PACT

Goal: Utilize existing patient, provider and administrative data to measure nationwide implementation of PACT

- Patient surveys: n = 75,101 Veterans.
  - ✓ Consumer Assessment of Health Plans (CAHPS)-PCMH survey.
- PACT Primary Care Personnel survey: n = 5,404
- Corporate Data Warehouse (CDW): n = >5.6 million Veterans.
  - ✓ Administrative and clinical data.
  - ✓ Clinical quality data: External Peer Review Program (EPRP).

Nelson et al, *JAMA Internal Medicine,* 2014



PACT Implementation Progress Index

Nelson, *JAMA Internal Medicine*, 2014

Construction of PI^2 Scores

- Generate clinic-level domain score
  - Sum of the standardized means for each variable
  - Variables were standardized using national mean/SD
- Clinic PI^2 score
  - (# domains in top quartile) – (# domains in bottom quartile)
- Ranges from 8 to -8:

Number of sites by 2012 overall PI^2 score				
Low				High
-7 to -5	-4 to -2	-1 to +1	+2 to +4	+5 to +8
87	190	346	213	77

Original Investigation

Implementation of the Patient-Centered Medical Home in the Veterans Health Administration

Associations With Patient Satisfaction, Quality of Care, Staff Burnout, and Hospital and Emergency Department Use

Karin M. Nelson, MD, MSHS; Christian Helfrich, MPH, PhD; Haili Sun, PhD; Paul L. Hebert, PhD; Chuan-Fen Liu, MPH, PhD; Emily Dolan, PhD; Leslie Taylor, PhD; Edwin Wong, PhD; Charles Maynard, PhD; Susan E. Hernandez, MPA; William Sanders, AA, AS; Ian Randall, MHSA; Idamay Curtis, BA; Gordon Schectman, MD; Richard Stark, MD; Stephan D. Fihn, MD, MPH

Higher implementation clinics had:

- higher patient satisfaction
- lower staff burnout
- higher proportion of Veterans meeting criteria on multiple measures of quality
- lower emergency room use

JAMA Internal Medicine, 2014

SITES WITH HIGHER PI^2 SCORE HAD HIGHER PATIENT SATISFACTION AND LOWER BURNOUT

PI^2 scores		Overall health care rating, SHEP	Single item burnout measure, % burnt out		Maslach Burnout inventory, EES
		2012	2012	2013	2012
High	5 to 8	8.62	37	34	2.29
	2 to 4	8.49	36	34	2.47
	-1 to 1	8.32	36	37	2.56
	-4 to -2	8.15	37	41	2.62
Lowest	-8 to -5	7.87	37	44	2.80
		P < 0.001	p=0.58	p=0.01	P=0.016

p values test for trend

Sites with Higher PI^2 Score Had Lower ED Use

PI^2 scores		Number of emergency department encounters per 1000 patients*		Number of hospitalizations per 1000 patients*	
		2012	2013	2012	2013
High	5 to 8	208	205	72	79
	2 to 4	221	314	75	99
	-1 to 1	304	262	92	78
	-4 to -2	287	231	80	68
Lowest	-8 to -5	235	222	71	70
		p<0.001	p=0.091	p=0.12	p=0.14

p values – test for trend;

**adjusted for age, Gagne co-morbidity and Community Based Outpatient Clinic (CBOC)*

Examples of Clinical Quality Indicators by PI^2

19/48 indicators significantly higher at sites with higher scores

Patient cohort		PI^2 Score High				Low
Diabetes	**n**	**5 to 8**	**2 to 4**	**-1 to 1**	**-4 to -2**	**-7 to -5**
Aspirin in current meds	49,811	81.1%	79.3%	79.3%	74.4%	74.1%
Hypertension						
Diagnosis of HTN & BP < 140/90 mm Hg	107,033	80.2%	79.4%	79.1%	77.9%	76.9%
Prevention and Screening						
Alcohol misuse w/ timely counseling	8,957	86.8%	79.4%	80.7%	78.4%	79.4%
Cervical cancer screening women age 21-64	29,302	92.8%	91.8%	91.6%	91.6%	86.7%

The importance of integrated behavioral health

- 25% of veterans in VHA primary care had at least one common mental health condition
  - ✓ Depression (13%)
  - ✓ Posttraumatic stress disorder (PTSD) (9.3%)
  - ✓ Substance use disorder (8.3%)
  - ✓ Anxiety (4.8%)
  - ✓ Serious mental illness (3.7%)
- Patients with MH conditions have higher ED use and hospitalizations, except for those with PTSD
- Decrease in hospitalizations and ED visits for patients with depression, SUD and anxiety seen in Primary Care-Mental Health Integration

Trivedi, *American Journal of Public Health*, 2015

Staff and provider experience

Elements of Team-Based Care in a Patient-Centered Medical Home Are Associated with Lower Burnout Among VA Primary Care Employees

Christian D. Helfrich, MPH, PhD[1,2], Emily D. Dolan, MS, PhD[1], Joseph Simonetti, MD[1,2], Robert J. Reid, MD, PhD[3], Sandra Joos, PhD[4], Bonnie J. Wakefield, RN, PhD[5], Gordon Schectman, MD[6,7], Richard Stark, MD[8], Stephan D. Fihn, MD, MPH[9,10], Henry B. Harvey, MS[9], and Karin Nelson, MD, MSHS[1,10]

JGIM, 2014

- Primary care staff have high rates of burnout (39%), comparable to other US data
- Features of PCMH associated with lower burnout
- Burnout is significantly lower for primary care employees when:
  - They're on a full staffed team
  - There is no turnover on the team
  - Their panel is within capacity
  - They do not work extended weekend hours

Factors Associated with Burnout

		Odds ratio	95% Conf. Interval	
Lower odds of burnout	Perception of adequate staffing ratio	0.73	0.62	0.86
	Participatory decision making on team	0.64	0.56	0.73
Higher odds of burnout	Chaos/stress on team	4.66	4.02	5.40

Model adjusted for tenure with VA, supervisory level, occupation, clinic-level average capacity and workload, team functioning, working to top of competency, self-efficacy with implementation, delegation. n=4,218

All OR $p < 0.001$

Factors Associated with Effective Care

Facilitators	
n huddles	40.8%
Regular team meetings to discuss process/performance improvement.	32.6%

Barriers	
Clinical reminder volume	43.3%
Recruiting and retaining providers	41.8%
Lack of control over my schedule	38.8%

n = 6,467 Primary care personnel survey

Economic Evaluation

ACOS & MEDICAL HOMES

By Paul L. Hebert, Chuan-Fen Liu, Edwin S. Wong, Susan E. Hernandez, Adam Batten, Sophie Lo, Jaclyn M. Lemon, Douglas A. Conrad, David Grembowski, Karin Nelson, and Stephan D. Fihn

Patient-Centered Medical Home Initiative Produced Modest Economic Results For Veterans Health Administration, 2010–12

Health Affairs, 2014

Goals of economic evaluation

- Estimate economic effect of the PACT in terms of total healthcare utilization and costs
  - ✓ Analyzed data from 2003–12 to assess how trends in health care use and costs changed after PACT implementation
- Estimate the Return on Investment (ROI)
  - ✓ ROI in relation to the PACT investment

Return on Investment in relation to VA total healthcare utilization and costs

- Interrupted time-series analysis
  - VA facility level, quarterly from FY03Q1 to FY12Q4
  - Estimate VA-wide time trend, effect of PACT, and facility-level random components for time and PACT
  - Adjust for time-varying measure of health risk (Elixhauser), facility-specific unemployment rate, number of primary care patients at facility
- Predicted utilization with and without PACT
- Change in costs = (change in utilization)*(cost-per-unit)
  - Discounted 4% per year

Patients and setting

- All patients in primary care
- Rolling cohorts of about 11 million patients
- 972 clinics
- 2003Q1-2010Q2 pre-PACT period
- 2010Q2-2012Q3 post-PACT period

	Full cohort
Unique patients, n	11.0 million
Unique facilities, n	972
Mean age, years	63.3
% Male	94%
% White	75%
% African American	9%
Mean Elixhauser	1.6 conditions

Outcome Measures

Outpatient Utilization Categories

- Primary care visits
- Specialty mental health care visits
- Specialty care visits
  - major subspecialty
  - procedure-based
- Emergency department visits
- Urgent care visits

Inpatient Utilization Categories

- Total hospitalizations
- Hospitalizations for ambulatory care-sensitive conditions (ACSCs)
- Hospitalizations for medical conditions
- Hospitalizations for mental health conditions

 = Statistically significant effect of PACT

Summary Results: Utilization

	% Change in utilization due to PACT		
Utilization significantly affected by PACT	Age <65	Age 65+	Total
Hospitalizations for ambulatory care-sensitive conditions	-4.2%	-0.2%	-1.7%
Outpatient primary care visits	-1.2%	3.5%	1.0%
Outpatient mental health visits	-7.8%	-5.2%	-7.3%

Modest overall effect on health care utilization and costs

- Potential costs avoided from April 2010 to FY2012 $596 million
  - Does not incorporate health benefits
- Initial estimate of ROI as of FY12 was -$178 million (potential net loss)

Hebert, *Health Affairs,* 2014

Conclusions

- Implementation can be measured using administrative, provider and patient level data at the national level
- Sites with higher measured implementation had: higher patient satisfaction, lower staff burnout, improved clinical quality, modestly lower rates of emergency department use
- Integrated behavioral health services lead to positive outcomes in veterans with MH conditions.
- Burnout rates are high (similar to national data)
- Modest overall effect of PACT on health care utilization & costs

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