cadre

University of Iowa Carver College of Medicine

University of Iowa Health Care

TELE-HEALTH IN VA SPECIALTY CARE

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VA SOTA Conference in Rural Health

9/12/16 Washington, DC

Objectives

1. Perspective of clinical leadership
2. Review research in use of tele-health for specialty care
2. Outline future research areas

REVIEW

A Re-conceptualization of Access for 21st Century Healthcare

John C. Fortney, PhD[1,2,3], James F. Burgess, Jr. PhD[4,5], Hayden B. Bosworth, PhD[6,7], Brenda M. Booth, PhD[1,3], and Peter J. Kaboli, MD[8,9,10]

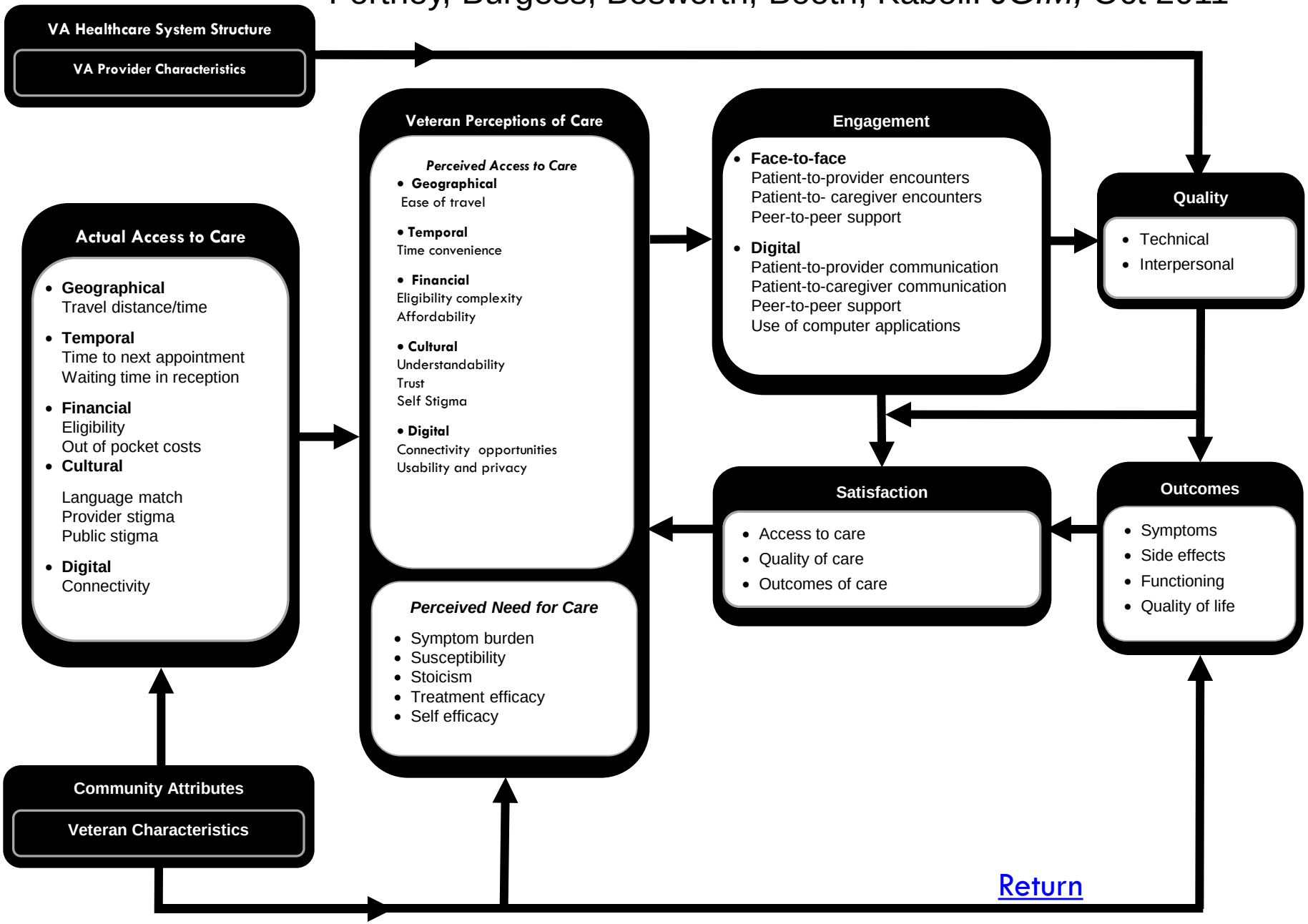
J Gen Intern Med 26(Suppl 2):639–47

- **Access to Care** represents the potential ease of having virtual or face-to-face interactions with a broad array of healthcare providers including clinicians, caregivers, peers, and computer applications.
  - **Actual:** represents those directly-observable and objectively measurable dimensions of access.
  - **Perceived:** represents those self-reported and subjective dimensions of access.

Framework/Model for Access

- Set of specific dimensions that characterize the fit between the patient and the healthcare system.
- Actual and Perceived
- Dimensions:
  - Geographical
  - Temporal
  - Financial
  - Cultural
  - Digital

Fortney, Burgess, Bosworth, Booth, Kaboli. *JGIM,* Oct 2011



Tele-Health in Specialty Medicine:
View from a Chief of Medicine

- Access, Access, Access
  - Is there a clinic with 30-day access problem?
- Clinical Champions to Lead
  - Tele-HIV, -ICU, -Cardiac Rehab
    - [Tele-Derm, Neurology/MS, SCAN-ECHO]
- Space and Bandwidth
  - CBOC to CBOC limitation for CVT
- Equipment/Approvals
  - Always a risk when depending upon IT

Examples: Specialty Tele-Health

1. HIV Care
2. Cardiac Rehab
3. Tele-ICU

Rural HIV Care

J Gen Intern Med 28(9):1165–73

Mixed-Methods Evaluation of a Telehealth Collaborative Care Program for Persons with HIV Infection in a Rural Setting

Michael Ohl, MD, MSPH[1,2,3], Dena Dillon, PharmD[1,2,3], Jane Moeckli, PhD[1,2], Sarah Ono, PhD[1,2], Nancee Waterbury, PharmD[4], Jo Sissel, RN[4], Jun Yin, MS[5], Brian Neil, MD[6], Bonnie Wakefield, RN, PhD[1,2,7], and Peter Kaboli, MD, MS[1,2,3]

[1]VA Office of Rural Health (ORH), Veterans Rural Health Resource Center—Central Region, Iowa City VAMC, Iowa City, IA, USA; [2]Center for Comprehensive Access and Delivery Research and Evaluation (CADRE), Iowa City VA Medical Center, Iowa City, IA, USA; [3]Department of

Rural Residence Is Associated With Delayed Care Entry and Increased Mortality Among Veterans With Human Immunodeficiency Virus Infection

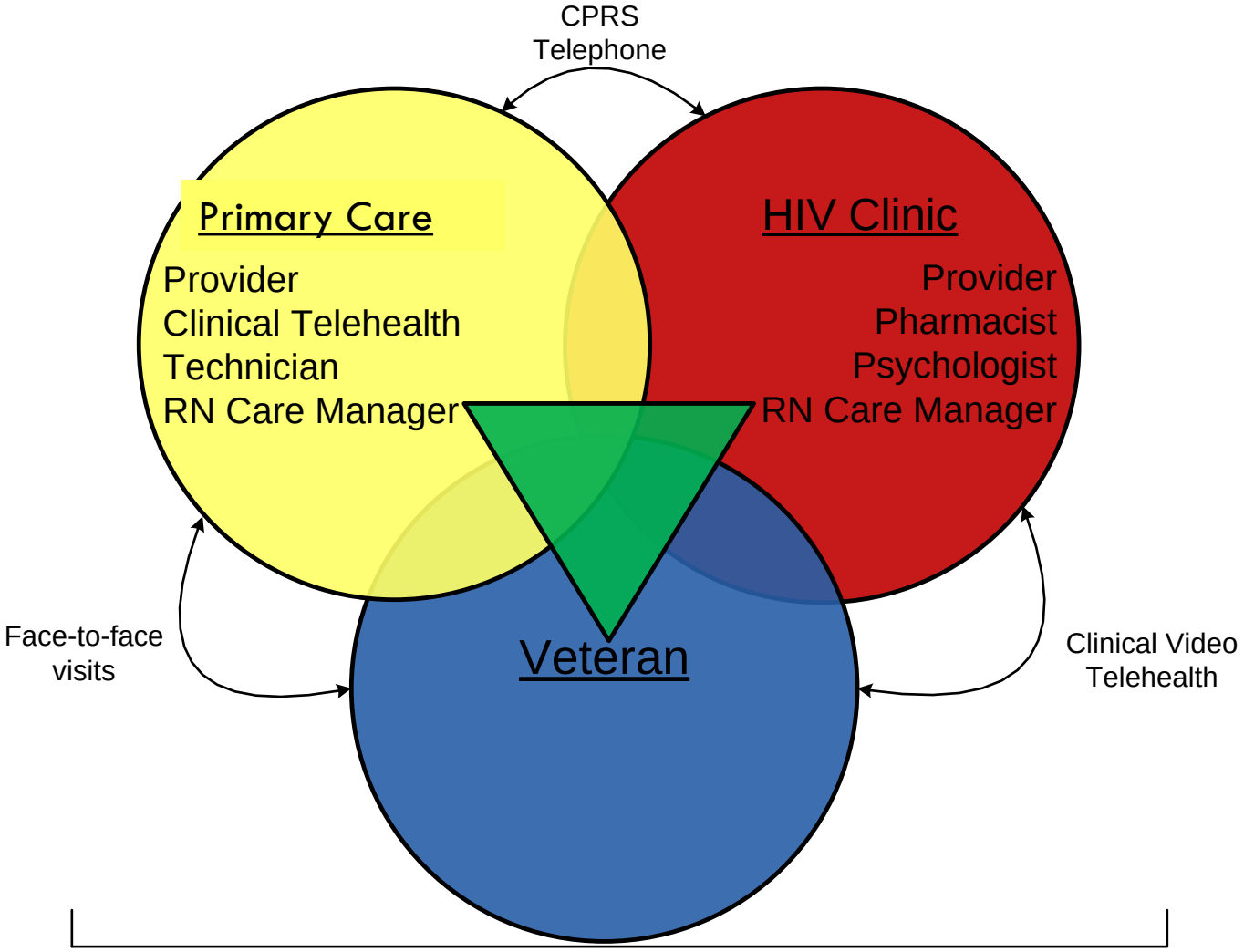
Michael Ohl, MD, MSPH,†‡ Janet Tate, MPH,§ Mona Duggal, MD, MHS,§¶ Melissa Skanderson, MSW,§ Matthew Scotch, PhD, MPH,‖ Peter Kaboli, MD, MS,*†‡ Mary Vaughan-Sarrazin, PhD,*†‡ and Amy Justice, MD, PhD§**††*

Medical Care • Volume 48, Number 12, December 2010

Why HIV Care for Tele-Health?

- VA largest provider of HIV care in US (~24,000)
  - 12-18% with HIV live in rural areas
- Identified a need
  - Quality gap in care
  - Travel burden to drive to HIV specialty clinic when closer clinic with tele-health capability
- Establish trusting relationships between specialty and primary clinic teams
- Create communities of practice around specific patient populations

Telehealth Collaborative Care



- Shared Registry
- “True Team”: self aware as team, defined roles, responsibilities, and communication processes

Pre/Post Telehealth Collaborative Care for HIV

Table 3. Care Measure Results

	Measure	Pre-TCC (*N*=17)		Post-TCC (*N*=24)		p
		N *eligible*	N *met* (%)	N *eligible*	N *met* (%)	
HIV Quality Measures	1. Retention in care	17	13 (76)	24	24 (100)	0.13
	2. CD4 Measurement	17	14 (82)	24	24 (100)	0.25
	3. HIV viremia control	15	15 (100)	24	23 (96)	0.99
	4. Syphilis screening	17	6 (35)	24	24 (100)	0.001
	5. HCV screening	17	17 (100)	24	24 (100)	—
	6. HBV screening	17	13 (76)	24	22 (92)	0.5
	7. Influenza vaccination	17	8 (47)	24	23 (96)	0.008
	8. Pneumococcal vaccination	17	15 (88)	24	23 (96)	0.99
	9. HBV vaccination	5	2 (40)	10	9 (90)	0.25
Cardiovascular Risk Factor Measures	10. Hypertension control	10	10 (100)	14	14 (100)	—
	11. Glycemia control	4	3 (75)	5	5 (100)	0.99
	12. Lipid monitoring	17	16 (94)	24	24 (100)	0.95
	13. Tobacco cessation	17	5 (29)	24	24 (100)	0.001
Other	14. Alcohol screening	17	3(18)	24	24(100)	< 0.001
	15. Depression screening	17	0(0)	24	24(100)	< 0.001
	16. Very/completely satisfied with care	—	—	18	16(88)	—
	17. Travel time, minutes, median (IQR)	17	320 (180–594)	24	170 (39–221)	< 0.001

TCC Telehealth Collaborative Care

Qualitative Evaluation

- Stigma and privacy: not barriers to TCC implementation
- Access improved through convenience
  - Trade-off with care coordination at 2 sites
  - Still relied on telephone for questions
- High value placed on specialist care
  - Little interest in turning all care over to PCP (SCAN-ECHO model)

COM View of the Tele-HIV

- Could not have happened without champion (Mike Ohl) and building relationships
- Can it spread? See one, do one, teach one
- Established local expertise with equipment, scheduling, and broadband to CBOCs
- Zero sum game for *actual* clinic access
  - improved *perceived* access for patient

Intensive Care Unit

ELSEVIER

Journal of Critical Care

journal homepage: www.jccjournal.org

Technology/Monitoring

Staff acceptance of a telemedicine intensive care unit program: A qualitative study ☆,☆☆,★,★★

Jane Moeckli, PhD [a,*], Peter Cram, MD, MBA [a,b], Cassie Cunningham, MPH [a], Heather Schacht Reisinger, PhD [a,b]

[a] Center for Comprehensive Access and Delivery Research and Evaluation, Iowa City VA Health Care System, Iowa City, IA
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Original Investigation

Impact of an Intensive Care Unit Telemedicine Program on Patient Outcomes in an Integrated Health Care System

Boulos S. Nassar, MD, MPH; Mary S. Vaughan-Sarrazin, PhD; Lan Jiang, MS; Heather S. Reisinger, PhD; Robert Bonello, MD; Peter Cram, MD, MBA

The effect of Tele-ICU on ICU inter-hospital transfers in Veterans Affairs Health Care System

Spyridon Fortis, Brice Beck, Mary Vaughan Sarrazin, Heather Schacht Reisinger

Staff Acceptance of Tele-ICU

Pre-Implementation

- Understanding
- Perceived need
- Training
- Org Factors

Post-Implementation

- Understanding
- Impact on work
- Usefulness
- Relationships
- Disruptions
- Unmet expectations

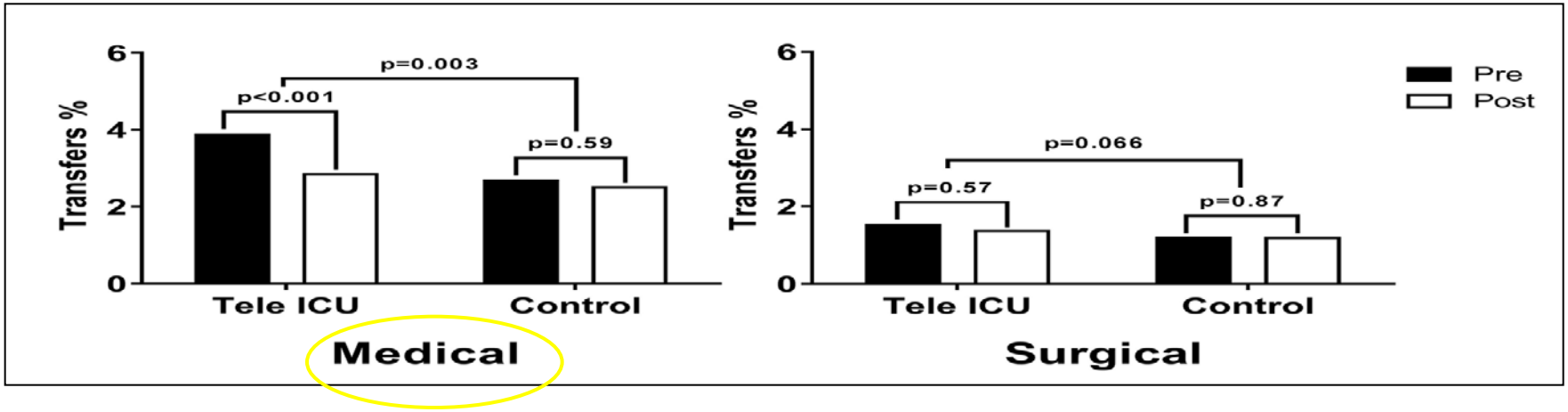
Clinical Outcomes of Tele-ICU

- Overall mixed results
- Still working on who benefits the most and in what setting
- Is there evidence it can impact transfers to a higher level ICU?

Tele-ICU on ICU Inter-Hospital Transfers

Unadjusted Transfer and Mortality rates

	Tele-ICU Group			Control Group			P value
	Pre (n=36,551)	Post (n=12,004)	P value	Pre (n=115,183)	Post (n=117,441)	P value	
Transfers	1569(4.3%)	393(3.3%)	<.001	2924(2.5%)	2946(2.5%)	0.64	<.001
Mortality	3095(8.5%)	1004(8.4%)	0.72	11822(10.3%)	11494(9.8%)	<.001	0.33



COM View of the Tele-ICU

- In the right setting, has great potential
  - Rural and/or small ICUs
  - Lacking Critical Care MDs
  - Medical > Surgical
- Risk of driverless/driver assist cars
  - Can you take your hand off the wheel, or do you need to still pay attention?
- Local Champions to accept, model, and promote use

Cardiac Rehab

Original Research

Feasibility and Effectiveness of Remote, Telephone-Based Delivery of Cardiac Rehabilitation

Bonnie Wakefield, RN, PhD,[1,2] Kariann Drwal, MS,[1,2]
Melody Scherubel,[1,2] Thomas Klobucar, PhD,[3]
Skyler Johnson, MS,[1,2] and Peter Kaboli, MD, MS[1,2,4]

VOL. 20 NO. 1 • JANUARY 2014 **TELEMEDICINE and e-HEALTH**

Why Cardiac Rehab for Tele-Health?

- Access to Cardiac Rehab at Iowa City VA
  - No on-site program (fee-basis/Project HERO)
  - Safety/efficacy questions of home-based
  - ORH 2011 Pilot Project
    - Higher Home-based completion (84% vs. 73%)
    - Cost comparable to center-based
    - High patient satisfaction

Patient Satisfaction

Patient Satisfaction	
Question	Mean (SD)
The education information given to me during the rehab program was helpful.	4.7 (.5)
Completing the rehab program at home was convenient.	4.8 (.5)
The person who guided my cardiac rehab was helpful.	4.8 (.5)
The person who guided my cardiac rehab had a good understanding of my medical condition.	4.7 (.6)
I would recommend this program to other Veterans who would need it.	4.8 (.4)
On a rating where 1= strong disagree, 2=disagree, 3=neutral, 4=agree, 5=strong agree	

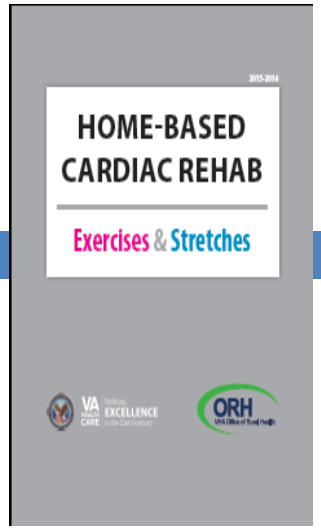
Pilot Cost Analysis

Cost Comparison Between Remote Delivery and Usual Care		
	Using estimated costs for remote program as administered (patient n=48)	Actual estimated costs for a constant panel of 100 patients per year
Contract cost per patient	$1,157	$1,157
Remote delivery cost per patient	$1,245	$807
Absolute difference	$88	$350

What is the Home-based Model?

- 12 Weeks:
  - Individualized weekly phone calls by a cardiac rehabilitation professional
  - Exercise prescription, nutrition counseling, medication adherence, stress management, smoking cessation
- Inclusions:
  - Stable Heart Failure
  - Stable Angina
  - Coronary artery disease
  - Post PCI, MI, CABG
  - Post valve replacement/repair

Home-based model



The Program

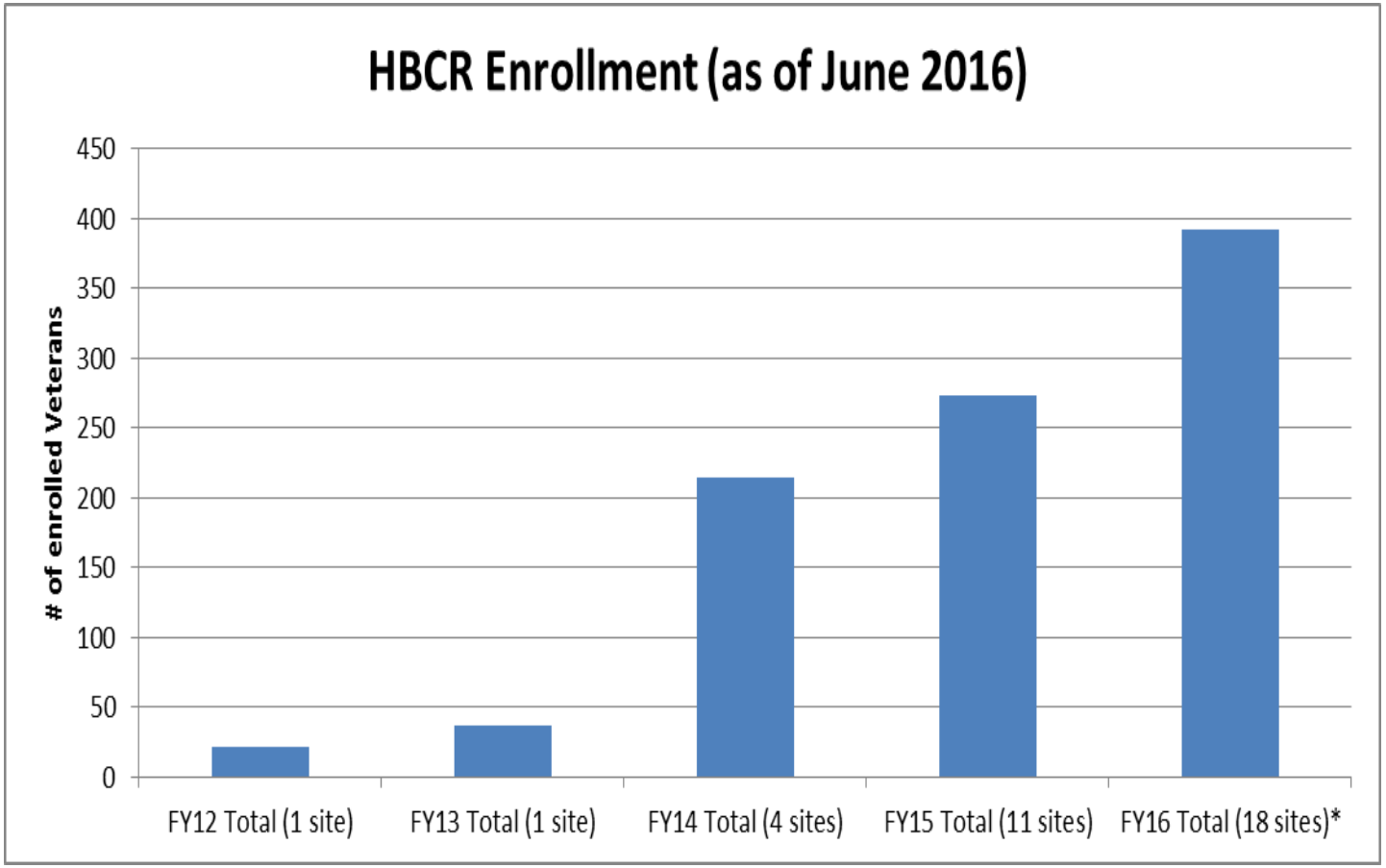
- Enrollment appointment in person or by video
- Equipment & Education Provided (peddler, pedometer, resistance bands, patient workbook).
- Weekly calls with individualized tailored education and exercise prescription
- Additional referrals as needed

Program Staff

- Medical Director
- Program Director
- Other Staff
  - Additional cardiac rehab providers
  - Assistants

Home-based CR Sites

Program Growth: ORH Promising Practice



COM View of Tele-Cardiac Rehab

- Access:
  - Telephone is simplest form of telehealth
  - Overcomes transportation/time barriers
  - Previously rarely offered (fee-basis)
  - Patient choice
- Cost-neutral or savings with little space needs
- Expandable to a hub-and-spoke model

Practical Barriers to TH Adoption

Acceptance:

- Providers: serve as t
- Administration: TH a
  something special, a
- Payors: currently 26
  payments for insuran
- Patients: try it once

Future Directions in Research

- Refining metrics for both Access and Quality
- The virtual waiting room
- Is there a tele-health “tipping point” in which we have gone too far?
  - Potentials for harm?
  - Substitute for F2F vs. complement
    - Group visits, asynchronous secure messaging, peer-support, caregiver-support
- Audience ideas?

Thank you