Partnered Research Cyberseminar Series

Session 2:

Using VA data and information systems to support the ORH TeleSleep Enterprise-Wide Initiative (a QUERI/operational partnership)

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Objectives

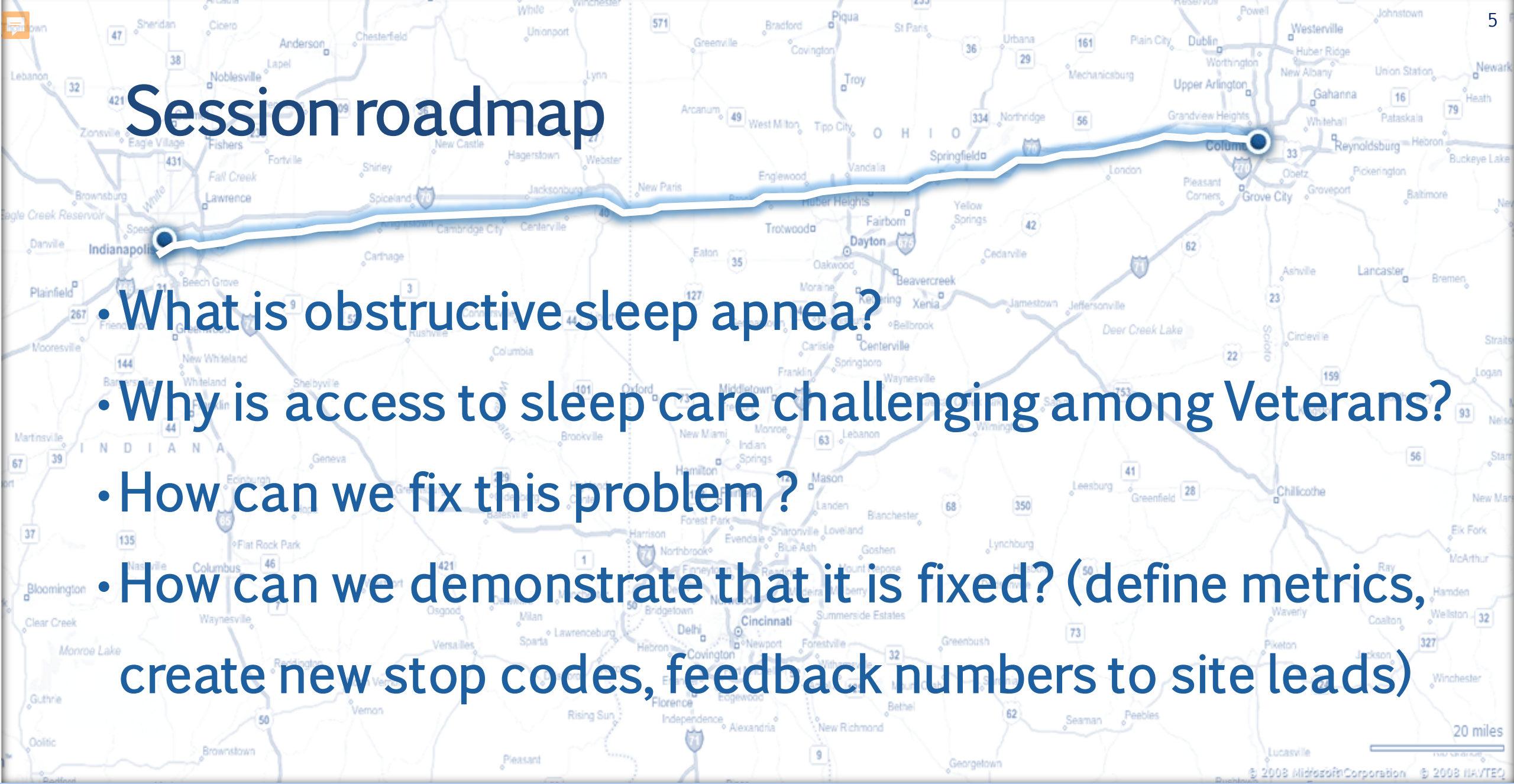
Understand how a research-operational partnership can contribute to the use of data in a Learning Health System, including

- Identify data sources to evaluate various aspects of a clinical initiative
- Describe a standardized process for validating electronic health record data in the context of a Learning Healthcare System

Understand the synergy of research-operational partnerships: how each side becomes better by understanding perspectives and methods of the other

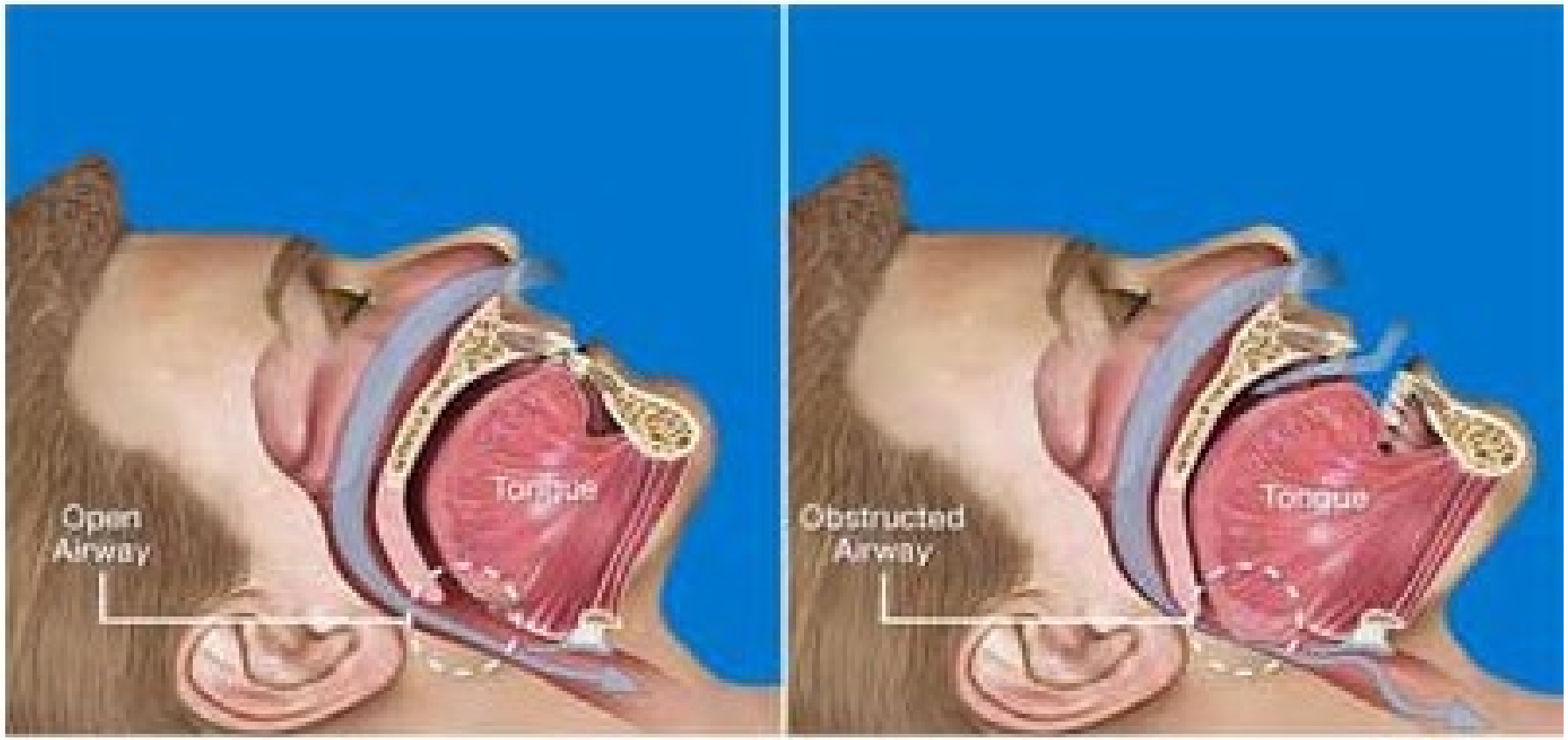
- Understand how an evaluation partner can enhance the strength of a clinical operational project

Session roadmap



- What is obstructive sleep apnea?
- Why is access to sleep care challenging among Veterans?
- How can we fix this problem ?
- How can we demonstrate that it is fixed? (define metrics, create new stop codes, feedback numbers to site leads)

Obstructive Sleep Apnea: Intermittent Pharyngeal Airway Closure

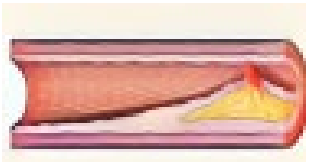


Non-Obstructed Airway **Obstructed Airway**

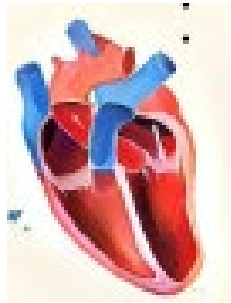
Sleep Apnea Risk Factors

- Age >50 years
- Male
- Hypertension
- Overweight, Obesity
- Anatomic narrowing of the upper airway
  - Sinuses (deviated septum, nasal polyps, enlarged turbinates)
  - Retrognathia (overbite)
  - Big tongue
  - High arched palate
- Symptoms of Snoring or being Tired
- Witnessed pauses in breathing
- Alcohol consumption

Clinical Consequences of Untreated OSA



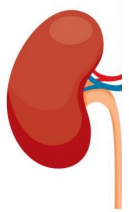
Blood vessels:
- Atherosclerosis
- Arterial Hypertension
- Peripheral vascular disease
- Erectile dysfunction
- Ocular changes



Heart:
- Myocardial infarction
- Congestive heart failure
- Atrial fibrillation
- Other arrhythmias
- Pulmonary hypertension

Brain:
- Excessive sleepiness
- Cognitive impairment
- Mood disturbances
- Stroke/TIA

Liver/Pancreas:
- Impaired diabetic control
- Hyperlipidemia
- Steatohepatitis



Kidney:
- Altered perfusion
- Impaired renal function

- Motor vehicle collisions
- Reduced Quality of Life
- Bedpartner Discord
- Work impairment/ decreased productivity

Malignancy:
- Tumorigenensis
- Increased invasiveness

Polysomnography

Home Sleep Apnea Testing

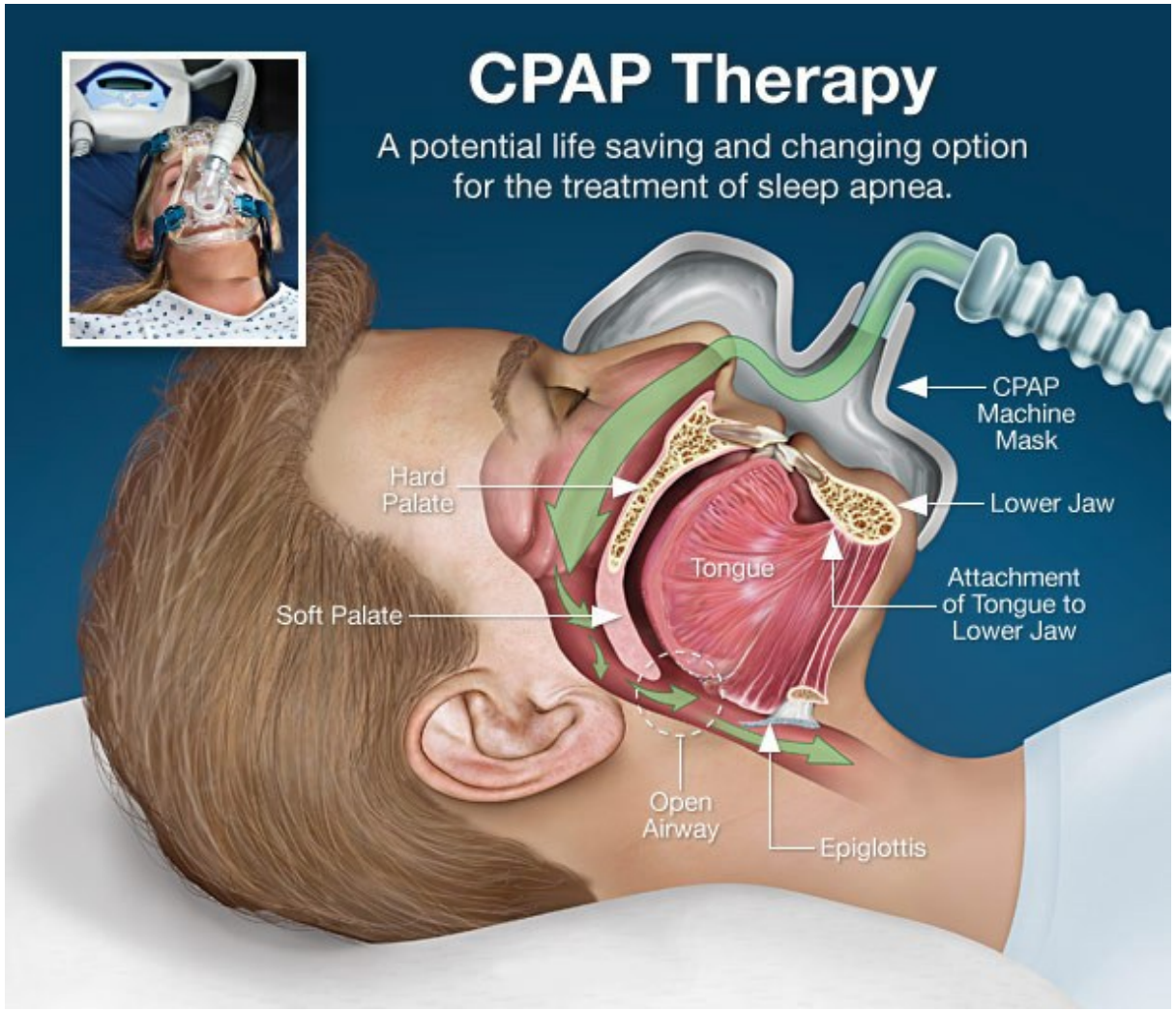
Type 3 Device

Peripheral Arterial Tonometry Device

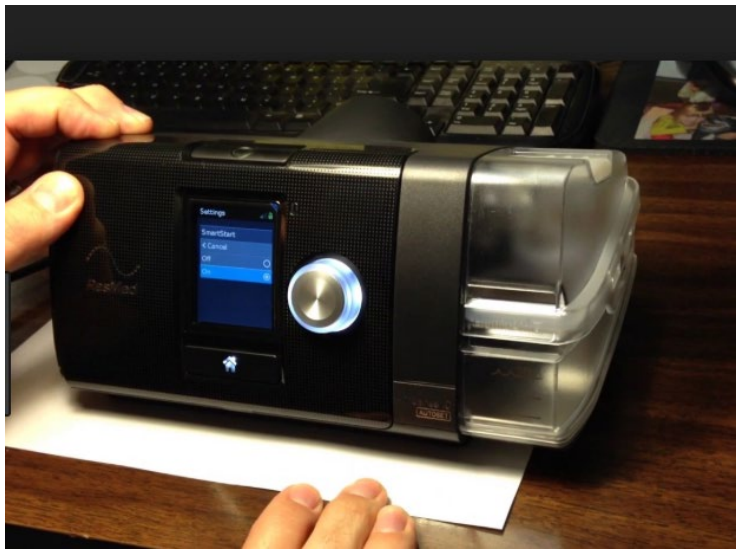
Treatments for OSA

- Positive Airway Pressure
- Oral Appliances
- Weight loss
- Medical treatments of nasal congestion and rhinitis
- Positional Therapies: non-supine and HOB elevation
- Surgical Interventions
  - Septoplasty, Turbinate reduction, Uvulopalatopharyngoplasty
  - Hypoglossal Nerve Stimulation
  - Maxillomandibular advancement, Distraction osteogenesis maxillary expansion
- Nasal Expiratory Valves
- Oxygen, Medications

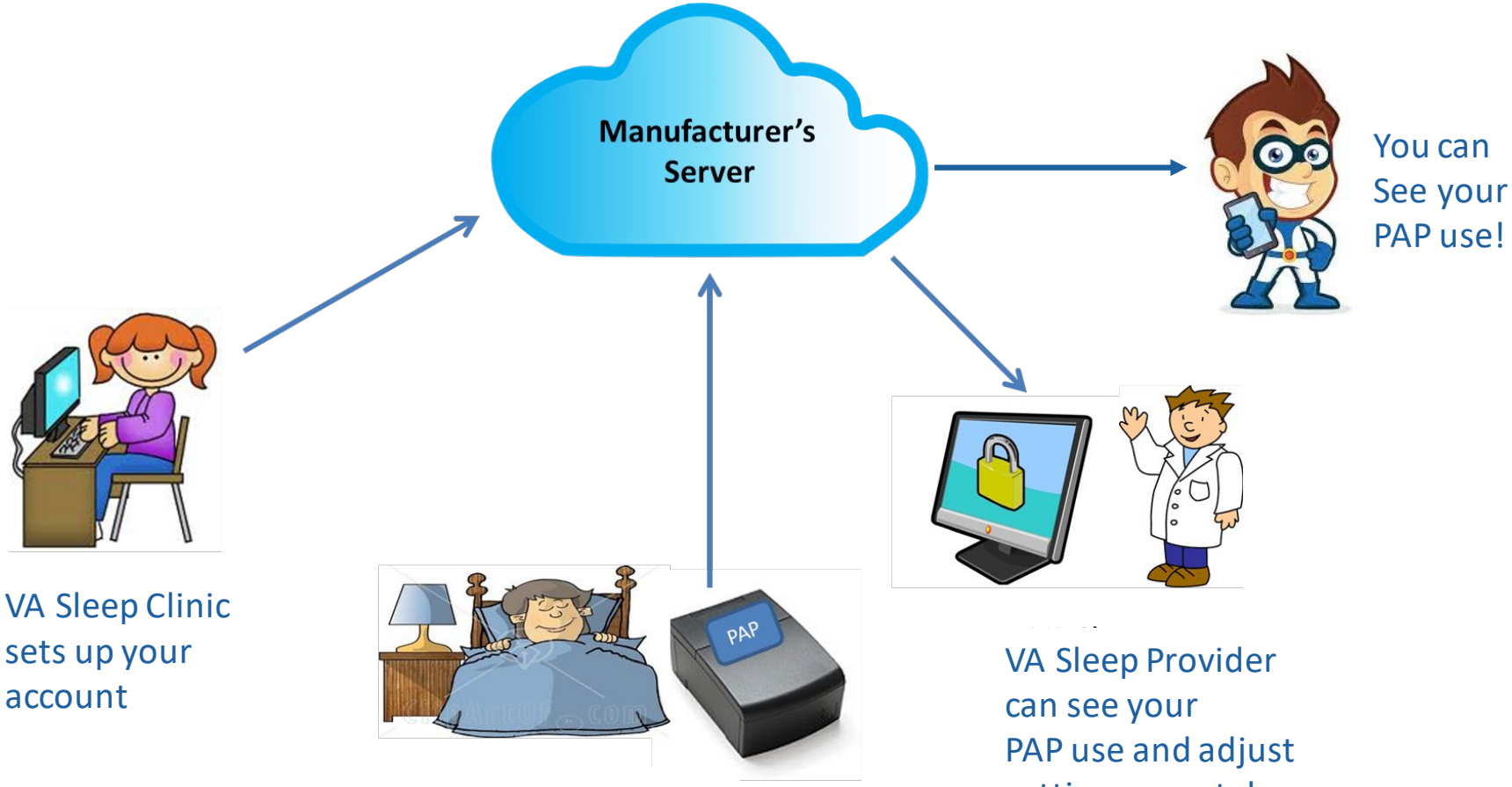
Continuous Positive Airway Pressure (CPAP)



Current Generation of CPAP Devices



Wireless Monitoring via CPAP Modems



Why is Access to Sleep Care Challenging?

Limited Human Resources

1,243,280 unique Veterans with OSA (excludes other sleep disorders)

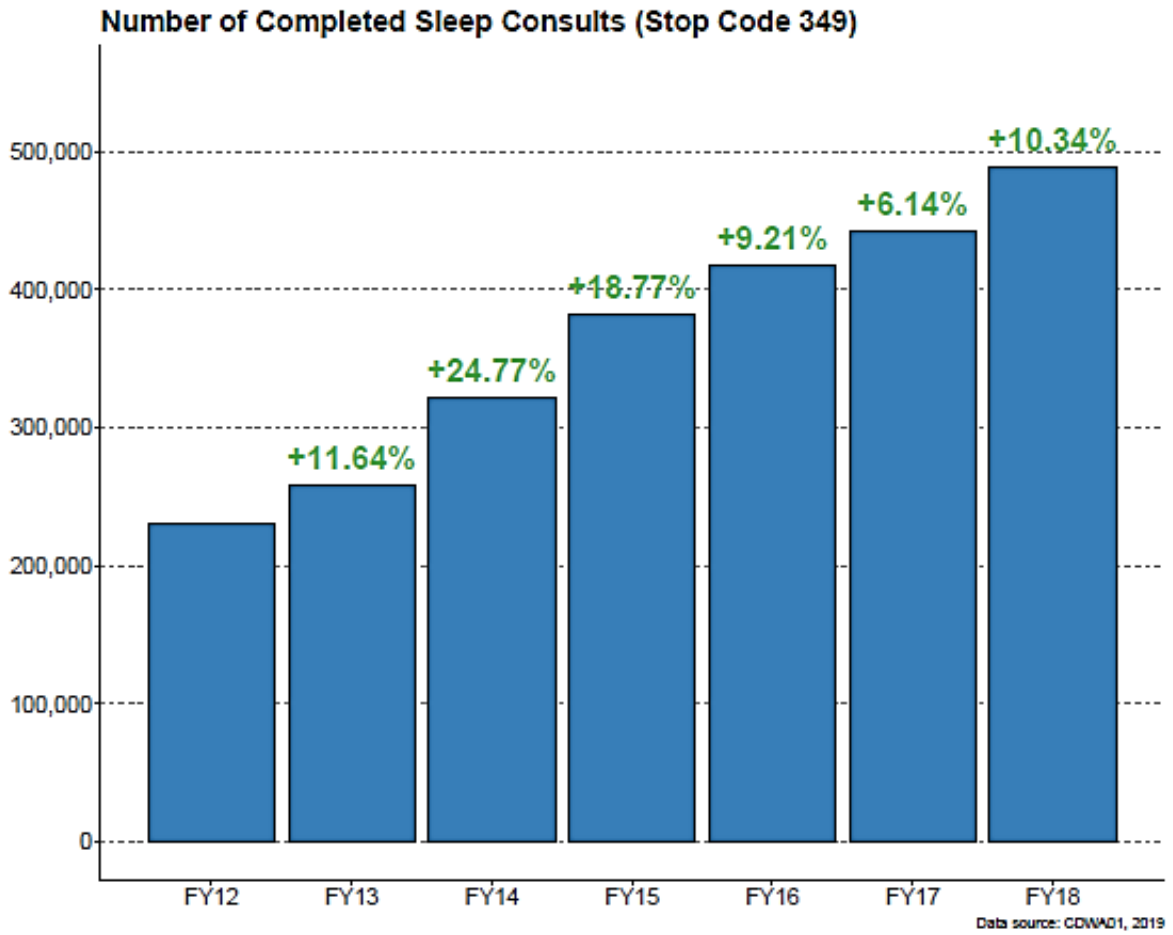
- **1:5,095 Veterans with OSA, 1:36,885 Veterans enrolled in VHA**
  - 163 sleep physicians
    - 1:7,627 Veterans with OSA; 1:55,214 Veterans enrolled in VHA
  - 81 advanced practice providers
    - 1:15,349 Veterans with OSA; 1:111,111 enrolled in VHA
- **1:2,579 Veterans with OSA; 1:18,672 Veterans enrolled in VHA**
  - 261 respiratory therapists (supporting PAP use and HSAT programs)
  - 221 daytime sleep technologists (supporting PAP use and HSAT programs)

2019 HAIG Inventory

Growth of Sleep Medicine in VA

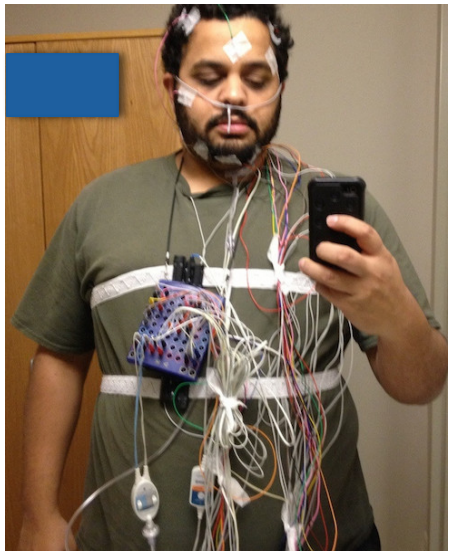
- Sleep Medicine inclusive of all sleep disorder, not limited to OSA
- 1.2 million Veterans with OSA enrolled in the Veterans Health Administration (VHA) in FY18
- Many are undiagnosed and therefore untreated
- Greater annual growth in Sleep than in primary care or other specialty care services

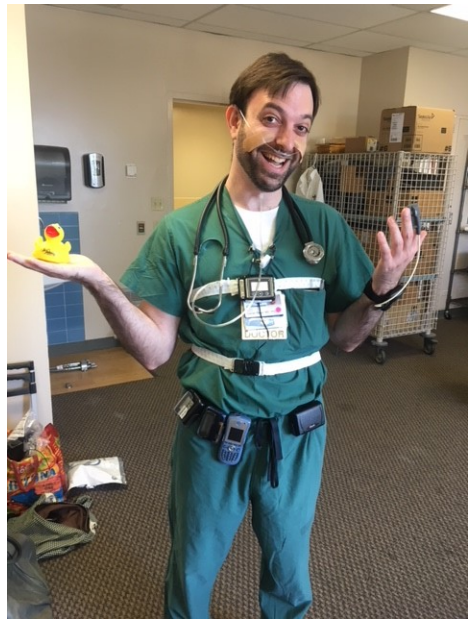
(Office of Enrollment and Forecasting 10P1A)



Sleep Testing

- In-lab Polysomnography
  - Available at 88/150 VAMCs
    - Limited by number of beds and technologists
  - Higher Community Care Cost
    - 2020 $621-648
  - Also diagnoses non-breathing disorders
  - Measures sleep using EEG





- Home testing
  - Available at 110/150 VAMCs
    - Limited by number of devices
  - Lower Cost
    - 2020 $141-173
  - Intended for use in patients with a mod-high pretest probability of OSA
  - More likely to underestimate OSA severity

CDW 2018 CPTS: PSG 95810, 95811; HSAT 95800, 95801, 95806

VA Sleep Medicine

- Misconception Sleep Medicine= Sleep Testing
  - Single data point in a patient's journey to better sleep health
- 20% of VAMCs offer no or limited sleep service
- Long wait times at VAMCs with a sleep laboratory
  - Increased outsourcing of sleep testing to the community

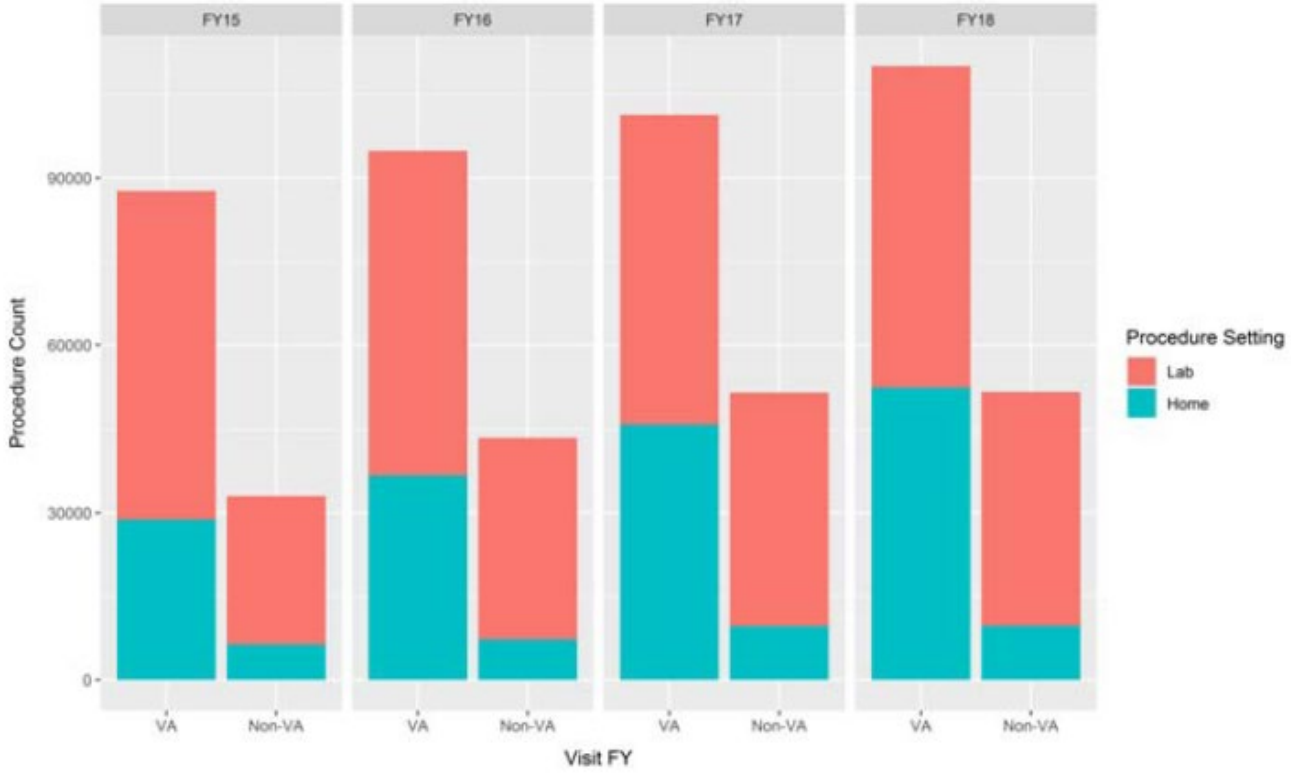


Figure 2 Sleep tests by VA and community FY2015–2018.

Data has been inconsistent and unreliable

Understanding data for sleep has been challenging

- Lack of use of Sleep Stop Codes (sleep buried under Pulmonary, Neurology, IM)
- Inconsistent coding of ICD-9/10s
- Different numbers for each office pulling data (and every person doing data pull-no "github" for VA data pulls)
- No validation of data with "boots on the ground"
- No way to identify resourcing of programs, local processes used
- Unclear volume and cost of outsourced sleep care in the community

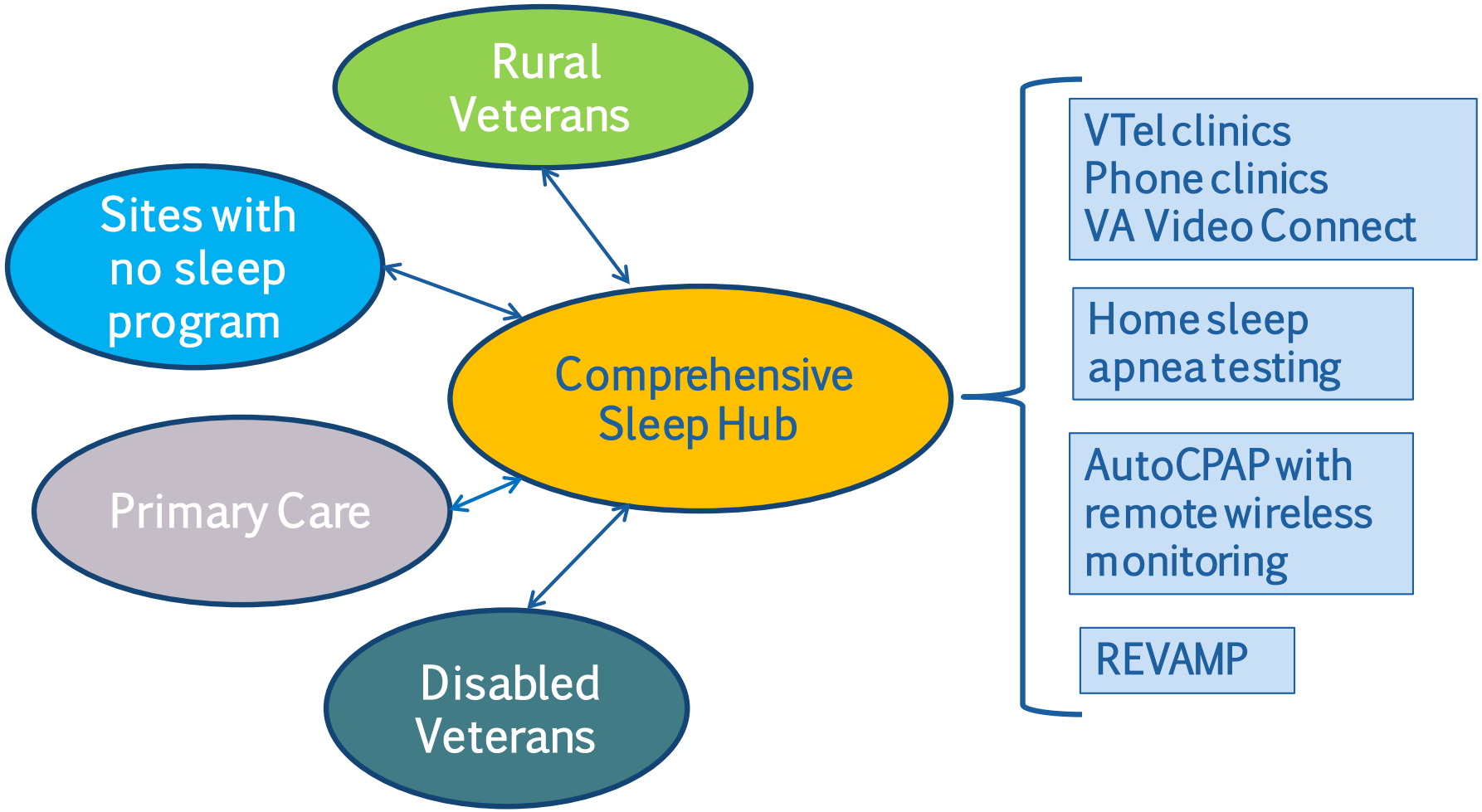
Summary

- Limited Human Resources
- Rising volume each year of new patient referrals
- Sleep as a model of chronic disease management
  - Unlike other consultative specialty care services
- Understanding data for sleep has been challenging

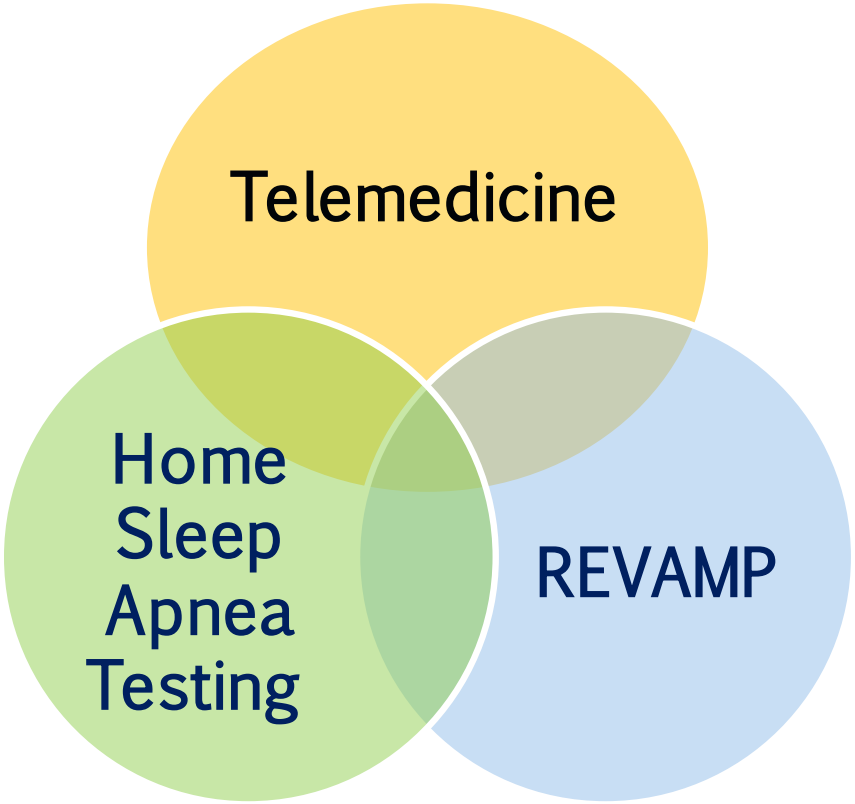
How can we fix this problem?

https://www.ruralhealth.va.gov/providers/Enterprise_Wide_Initiatives.asp

TeleSleep: A Hub-Spoke Model to Deliver Care to Rural Veterans with Sleep Disorders

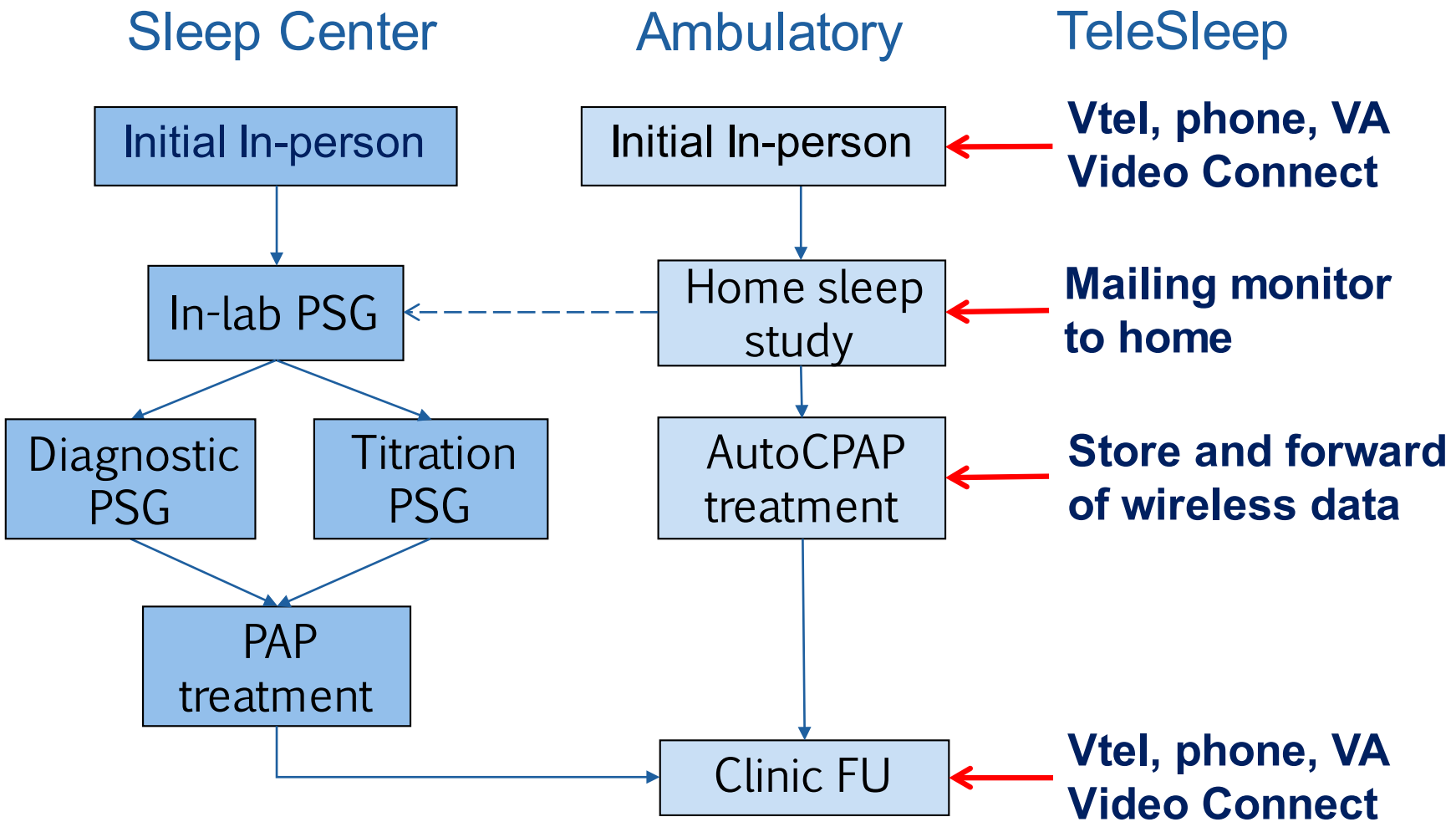


TeleSleep Components

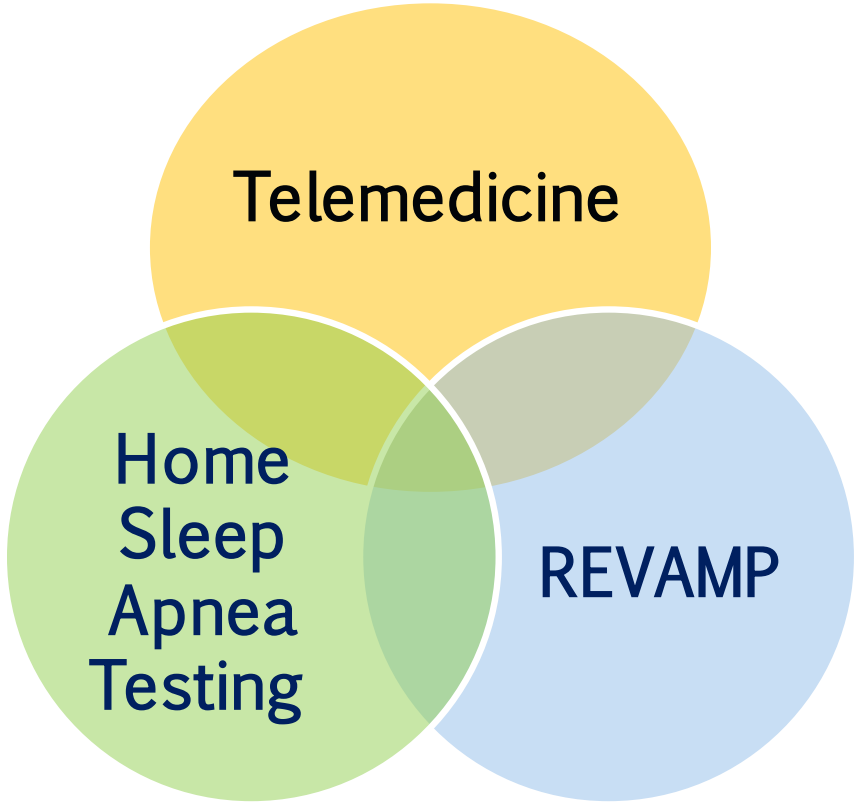


- **Telemedicine:** provide care for OSA using virtual (versus in person) encounters
- **Home Sleep Apnea Testing:** diagnose OSA using home (versus facility-based) testing
- **REVAMP:** develop and implement a web application for Veterans and their providers to monitor symptoms, sleep quality, and use of positive airway pressure.

Clinical Pathways to Diagnose & Manage OSA

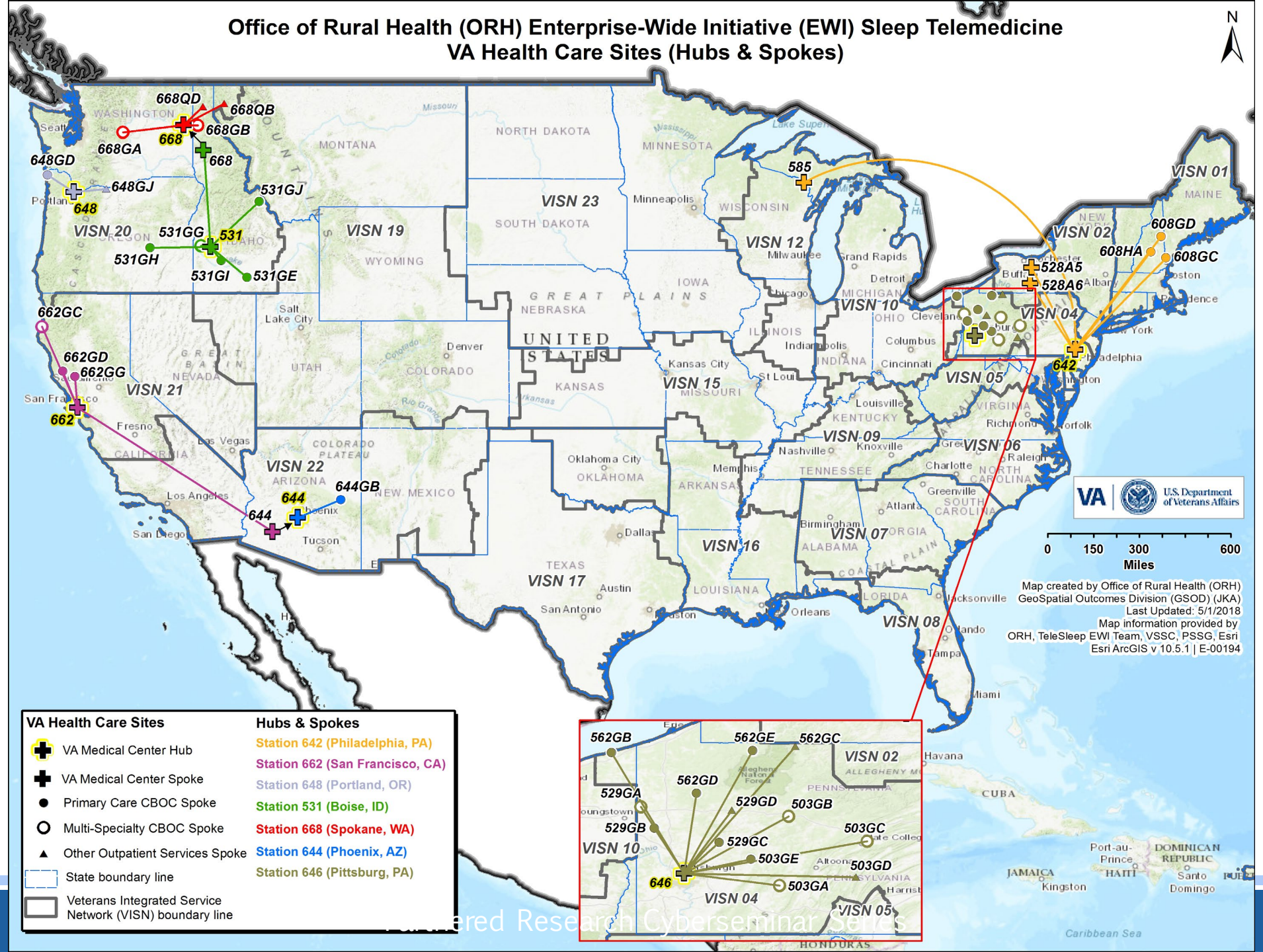


Goals of TeleSleep



- Improve diagnosis and treatment of OSA
- Enhance patient experience
- Reduce wait times (Improve Access)
- Improve staff satisfaction and efficiency

FY18


Office of Rural Health (ORH) Enterprise-Wide Initiative (EWI) Sleep Telemedicine
VA Health Care Sites (Hubs & Spokes)
N
668QD
668QB
668GB
668
668GA
668
648GD
648GJ
648
531GJ
VISN 20
531GG
531
531GH
531GI
531GE
VISN 19
VISN 23
662GC
662GD
662GG
662
VISN 21
644GB
644
644
VISN 22
585
VISN 12
VISN 10
VISN 01
608GD
608HA
608GC
VISN 02
528A5
528A6
VISN 04
642
VISN 05
VISN 15
VISN 09
VISN 06
VISN 16
VISN 07
VISN 08
VISN 17
562GB
562GE
562GC
562GD
529GA
529GD
503GB
529GB
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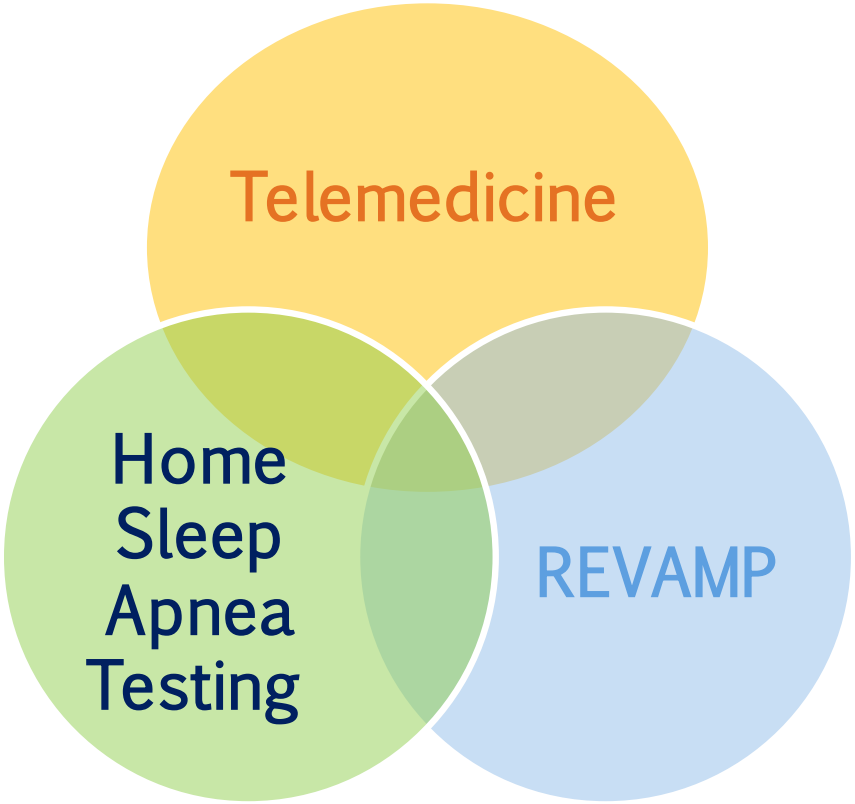
529GC
503GE
503GD
503GA
646
VISN 10
VISN 02
VISN 04
VISN 05
VA | U.S. Department of Veterans Affairs
0 150 300 600
Miles
Map created by Office of Rural Health (ORH)
GeoSpatial Outcomes Division (GSOD) (JKA)
Last Updated: 5/1/2018
Map information provided by
ORH, TeleSleep EWI Team, VSSC, PSSG, Esri
Esri ArcGIS v 10.5.1 | E-00194
VA Health Care Sites
VA Medical Center Hub
VA Medical Center Spoke
Primary Care CBOC Spoke
Multi-Specialty CBOC Spoke
Other Outpatient Services Spoke
State boundary line
Veterans Integrated Service Network (VISN) boundary line
Hubs & Spokes
Station 642 (Philadelphia, PA)
Station 662 (San Francisco, CA)
Station 648 (Portland, OR)
Station 531 (Boise, ID)
Station 668 (Spokane, WA)
Station 644 (Phoenix, AZ)
Station 646 (Pittsburg, PA)

Table 2. VA facilities participating in the three components of the TeleSleep EWI.

TeleMedicine Hubs & Spokes		Home Testing			REVAMP		
Boise	**Pittsburgh**	Ann Arbor	Indianapolis	Portland	**Wave 1**	**Wave 2**	**Wave 3**
Twin Falls	Johnstown	Augusta	Iron Mountain	Prescott	Atlanta	Ann Arbor	Buffalo
Caldwell	DuBois	Bath	Jackson	Providence	Boston	Augusta	Chicago
Burns	State College	Beckley	Las Vegas	San Antonio	Cleveland	Baltimore	Chillicothe
Mountain Home	Huntingdon	Boise	Leavenworth	San Francisco	Gainesville	Bath	Louisville
Salmon	Indiana Co	Bronx	Long Beach	San Juan	Omaha	Boise	Cincinnati
Spokane	Lawrence Co	Buffalo	Los Angeles	Seattle	Philadelphia	Canandaigua	
Philadelphia	Hermitage	Canandaigua	Louisville	Spokane	Portland	Detroit	Clarksburg
Bath	Armstrong Co	Chillicothe	Manchester	St. Cloud	San Diego	Iron Mountain	Memphis
Canandaigua	Clarion Co	Cincinnati	Miami	Syracuse	San Francisco	Manchester	Dayton
Iron Mountain	Ashtabula	Clarksburg	Minneapolis	Tampa	Seattle	Orlando	Miami
Tilton	McKean Co	Coatesville	Mountain Home	Topeka		Phoenix	Fresno
Conway	Venango Co	Denver	Northport	Tucson		Pittsburgh	St. Cloud
Somersworth	Warren Co	Des Moines	Oklahoma City	Washington DC			Wichita
Phoenix	**Portland**	Detroit	Omaha	West Haven		Rochester	Houston
Show Low	The Dalles	Fort Harrison	Phoenix	White River Junction		San Antonio	Milwaukee
San Francisco	North Coast	Grand Junction	Pittsburgh	Wilkes Barre		San Juan	Indianapolis
Eureka	**Spokane**	Honolulu		Wilmington		Spokane	Leavenworth
Ukiah	Wenatchee	Houston				Tucson	Los Angeles
Clearlake	Sandpoint					Washington	New Orleans
Phoenix	Libby					White River Junction	

Home Sleep Apnea Testing



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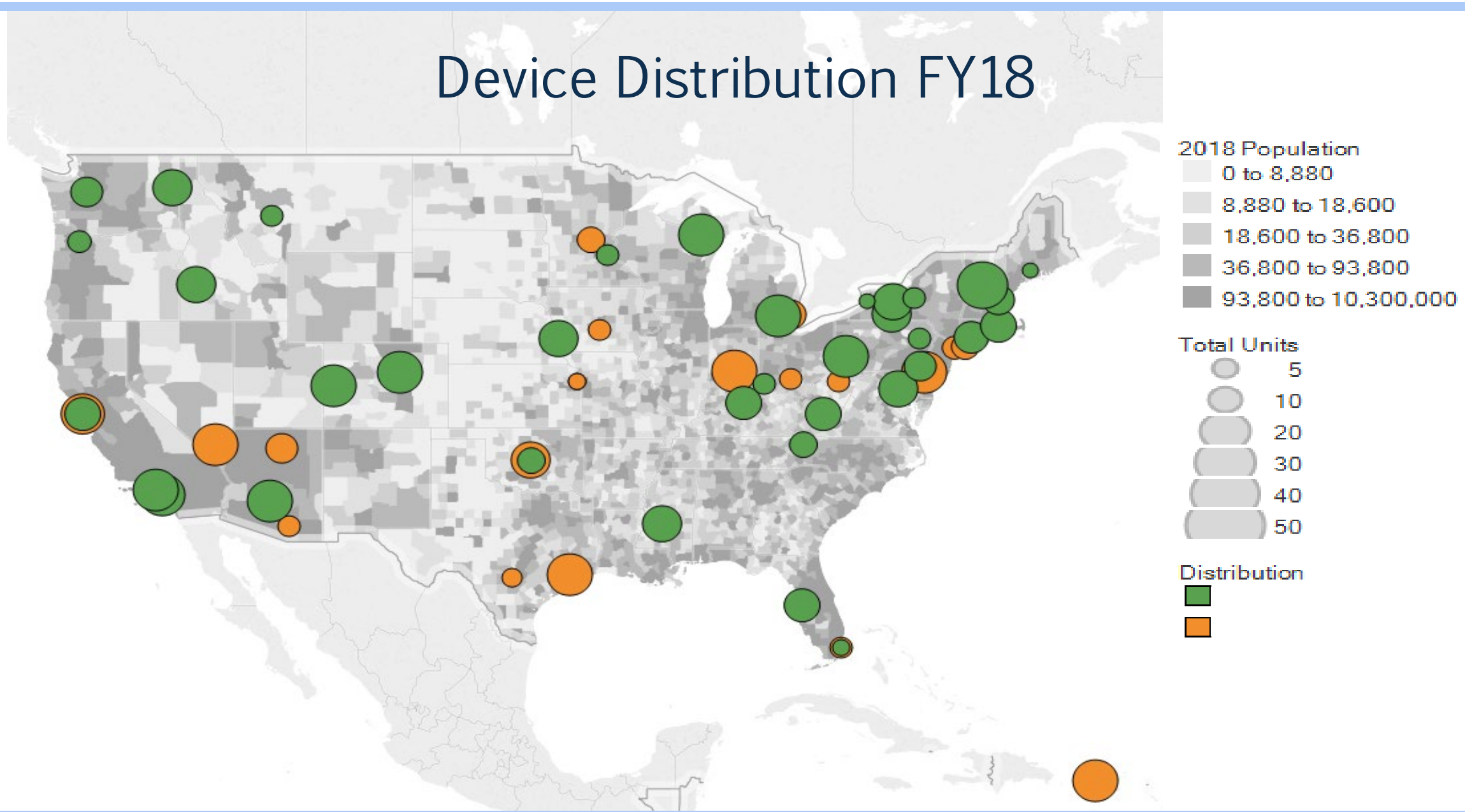
Strategies used to Increase HSAT

- Device Distribution funded by ORH ($6m)
  - Year end funds, partnered with SAC, coordinated distribution to 54 facilities
- Developed Toolkits to support implementation of new or expanding programs
  - Stop codes, process maps, SOPs
- Strengthened partnerships with stakeholder offices (TH, MCAO) to ensure correct processes and standardization
  - Business rules ensured and sleep aligned with the rest of SFT TH
  - Instituted monitoring of compliance with changes in stop codes and SFT visits and support to make changes when problems arose
- Established a single email for sites to seek assistance from
  - 1:1 meetings when needed to offer more in-depth support
- Disseminated information via Webinars, newsletters

Device Distribution FY18



How can we demonstrate that it's fixed?

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Understand how a research-operational partnership can contribute to the use of data in a Learning Health System, including

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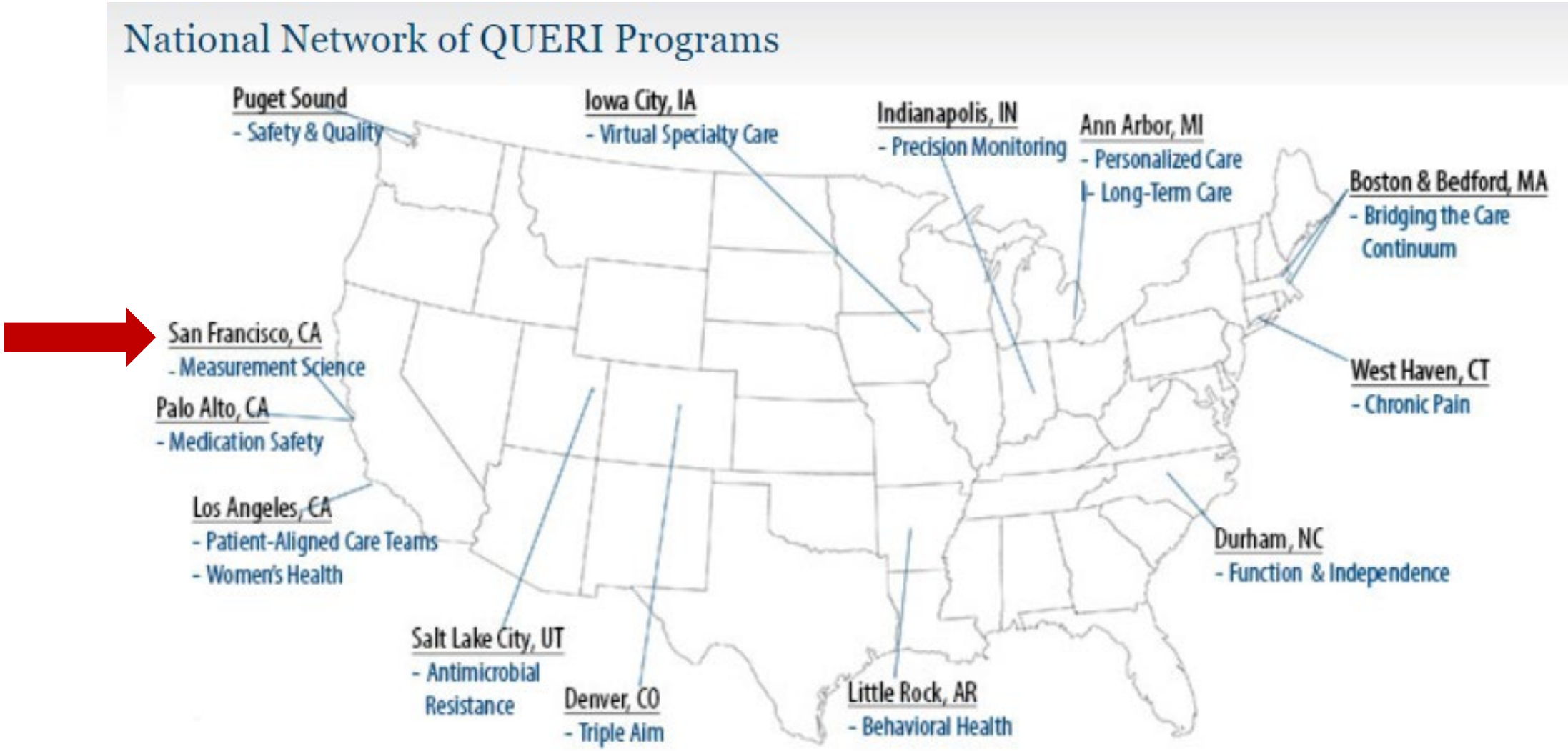
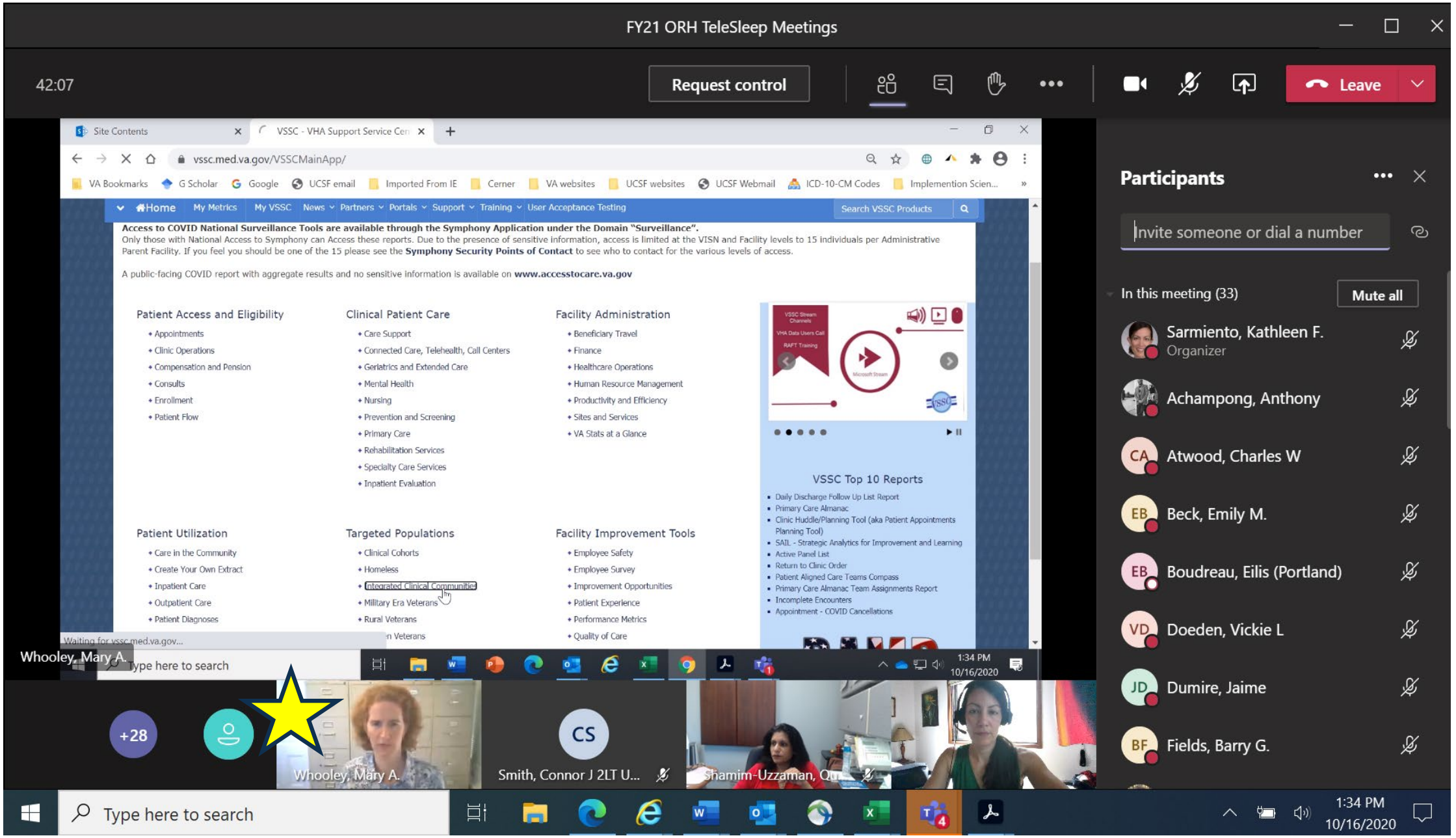
VA Quality Enhancement Research Initiative Programs



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

Where to obtain metrics?	Data source	Work with local stakeholders to adjust front end coding and clinic builds with back-end data
Prevalence of sleep disorders	CDW outpatient and inpatient **diagnoses**	Verify face validity of data based on local experience and patient logs
Demand for services (volume of consults)	CDW **consults**	Work with clinical applications coordinators to attach correct stop codes to consults
Use of HSAT vs. PSG	CDW outpatient and inpatient **procedures**	Educate providers on use of correct Current Procedural Terminology codes
Use of virtual care vs. face-to-face encounters	CDW outpatient **stop codes**	Ensure Managerial Cost Accounting/DSS office attaches correct stop codes to note titles
Community care services	CDW - **PIT** domain CDW - **FEE** domain CDW - **FBCS** domain	Contact Office of Community Care to verify number of referrals and cost
Durable medical equipment	CDW - **prosthetics**	Engage logistics and prosthetics to understand how equipment data get captured in VistA
Cerner data from Spokane	[CDWWork2]. **[BillingMill].** [General Ledger]	Verify face validity of data based on local experience and patient logs


FY21 ORH TeleSleep Meetings
42:07
Request control
Leave
Site Contents
VSSC - VHA Support Service Cen
vssc.med.va.gov/VSSCMainApp/
Home
My Metrics
My VSSC
News
Partners
Portals
Support
Training
User Acceptance Testing
Search VSSC Products
Access to COVID National Surveillance Tools are available through the Symphony Application under the Domain "Surveillance".
Only those with National Access to Symphony can Access these reports. Due to the presence of sensitive information, access is limited at the VISN and Facility levels to 15 individuals per Administrative Parent Facility. If you feel you should be one of the 15 please see the Symphony Security Points of Contact to see who to contact for the various levels of access.
A public-facing COVID report with aggregate results and no sensitive information is available on www.accesstocare.va.gov
Patient Access and Eligibility
Appointments
Clinic Operations
Compensation and Pension
Consults
Enrollment
Patient Flow
Clinical Patient Care
Care Support
Connected Care, Telehealth, Call Centers
Geriatrics and Extended Care
Mental Health
Nursing
Prevention and Screening
Primary Care
Rehabilitation Services
Specialty Care Services
Inpatient Evaluation
Facility Administration
Beneficiary Travel
Finance
Healthcare Operations
Human Resource Management
Productivity and Efficiency
Sites and Services
VA Stats at a Glance
Patient Utilization
Care in the Community
Create Your Own Extract
Inpatient Care
Outpatient Care
Patient Diagnoses
Targeted Populations
Clinical Cohorts
Homeless
Integrated Clinical Communities
Military Era Veterans
Rural Veterans
Facility Improvement Tools
Employee Safety
Employee Survey
Improvement Opportunities
Patient Experience
Performance Metrics
Quality of Care
VSSC Top 10 Reports
Daily Discharge Follow Up List Report
Primary Care Almanac
Clinic Huddle/Planning Tool (aka Patient Appointments Planning Tool)
SAIL - Strategic Analytics for Improvement and Learning
Active Panel List
Return to Clinic Order
Patient Aligned Care Teams Compass
Primary Care Almanac Team Assignments Report
Incomplete Encounters
Appointment - COVID Cancellations
Waiting for vssc.med.va.gov...
Type here to search
1:34 PM
10/16/2020
Whooley, Mary A.
Participants
Invite someone or dial a number
In this meeting (33)
Mute all
Sarmiento, Kathleen F.
Organizer
Achampong, Anthony
Atwood, Charles W
Beck, Emily M.
Boudreau, Eilis (Portland)
Doeden, Vickie L
Dumire, Jaime
Fields, Barry G.
+28
Whooley, Mary A.
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Smith, Connor J 2LT U...
Shamim-Uzzaman, Qu...
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10/16/2020

Example: Quarterly data on number of Veterans receiving virtual care at each site

Number of Veterans who received virtual care for sleep during FY20 quarter 4		Synchronous Clinical Video Telel			Asynchronous (Store/Forward)			Other Virtual Care				TOTAL
		CVT provider (same station)	CVT provider (different station)	Total CVT	S/F provider (same station) interprets study	S/F provider (different station) interprets study	Total Store and Forward	VA Video Connect (to home)	Telephone visit	Chart ("E") consult	Secure messaging	Any virtual visit
Station	Primary stop code	349	349	349	143	143	143	349	181, 324, 325, 338, 424, or 527	349	349	at least one of these virtual visits
	Secondary stop code	692	693	692 or 693	695	696	695 or 696	179	349	697	719	
506	Ann Arbor	14	0	14	0	0	0	231	711	22	3	1177
508	Atlanta	1	0	1	1	0	0	579	3617	122	25	4085
531	Boise	7	2	9	146	137	243	71	1145	306	0	1831
562	Erie	0	0	0	0	0	0	0	0	0	0	94
589	Kansas City	62	0	62	96	0	96	122	1283	0	1	1904
642	Philadelphia	0	2	2	214	76	290	335	2041	164	0	2501
644	Phoenix	0	0	0	223	0	223	194	852	396	27	1457
646	Pittsburgh	0	29	29	0	41	41	69	1021	4	0	1151
648	Portland	4	0	4	0	0	0	51	1384	359	37	1710
649	Prescott VA	0	0	0	0	0	0	0	160	0	0	162
662	San Francisco	9	0	9	56	0	56	208	326	315	6	865
668	Spokane	15	0	15	0	0	0	58	676	0	0	1708
691	West LA	0	0	0	240	0	240	261	921	673	56	2412
589A7	Wichita	0	0	0	128	0	113	7	173	0	0	307

Example:

Monitor number of sleep studies performed quarterly using home sleep testing versus polysomnography

Sleep procedures during FY20 quarter 4		Number of HSAT procedures	# unique Veterans tested with HSAT	Number of PSG procedures	# unique Veterans tested with PSG
Station	Site name	CPT: 95800, 95801, 95806, G0398, G0399, G0400		CPT: 95807, 95808, 95810, 95811	
506	Ann Arbor	0	0	66	66
508	Atlanta	239	192	0	0
531	Boise	366	281	34	34
562	Erie	7	6	0	0
589	Kansas City	200	160	112	106
642	Philadelphia	978	463	6	5
644	Phoenix	222	221	38	36
646	Pittsburgh	613	432	146	138
648	Portland	25	24	129	128
649	Prescott VA	3	2	0	0
662	San Francisco	77	64	0	0
668	Spokane	126	99	0	0
691	West LA	768	634	586	561
589A7	Wichita	143	138	58	54

HSAT Evaluation

- What worked?
- What didn't?
- Why didn't it work?
- What did you do to try to make it work?

Feedback from sites used in toolkit development and addressed by starting an implementation team (TH, TeleSleep SMEs, Stop Code team)

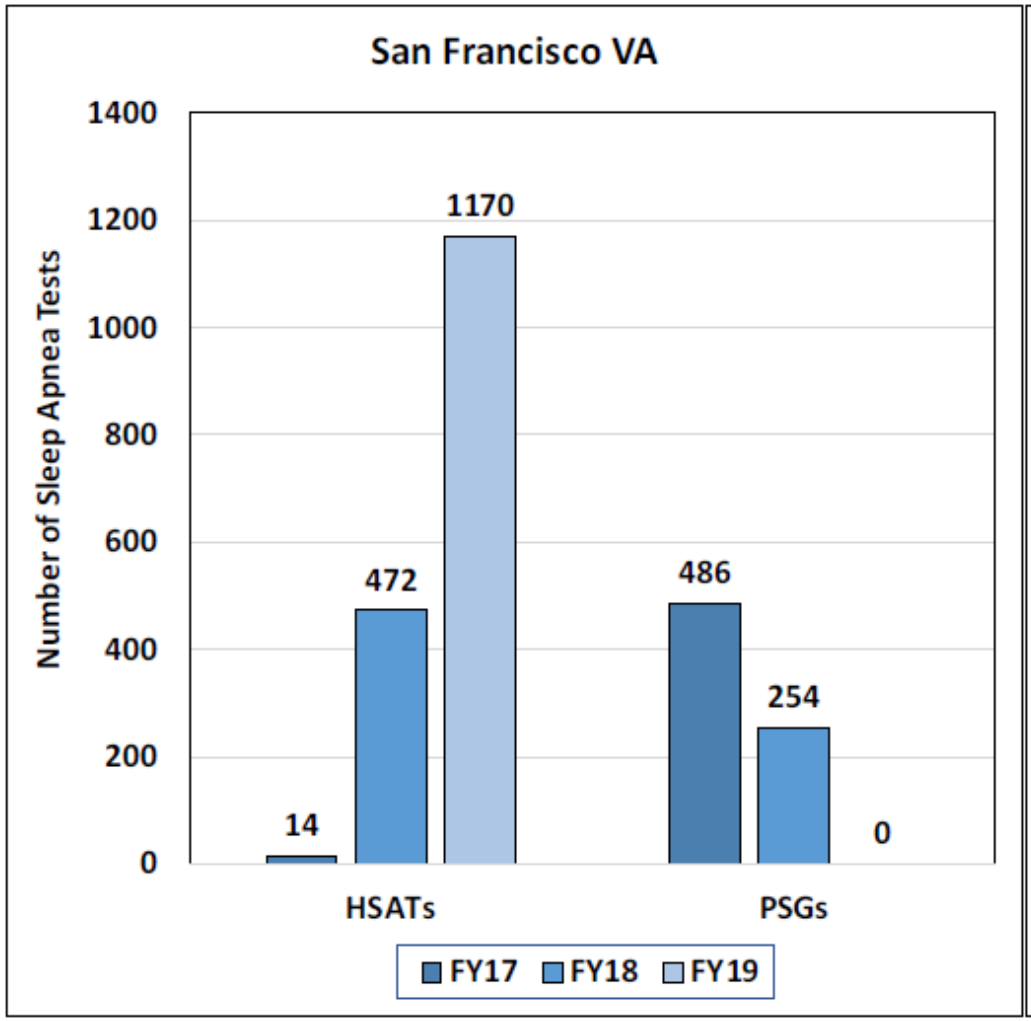
Table 11: Home Sleep Apnea Testing IMPLEMENTATION: Barriers and Facilitators were identified from an online survey of 36 sites who received HSAT recorders, site visits, and program calls.

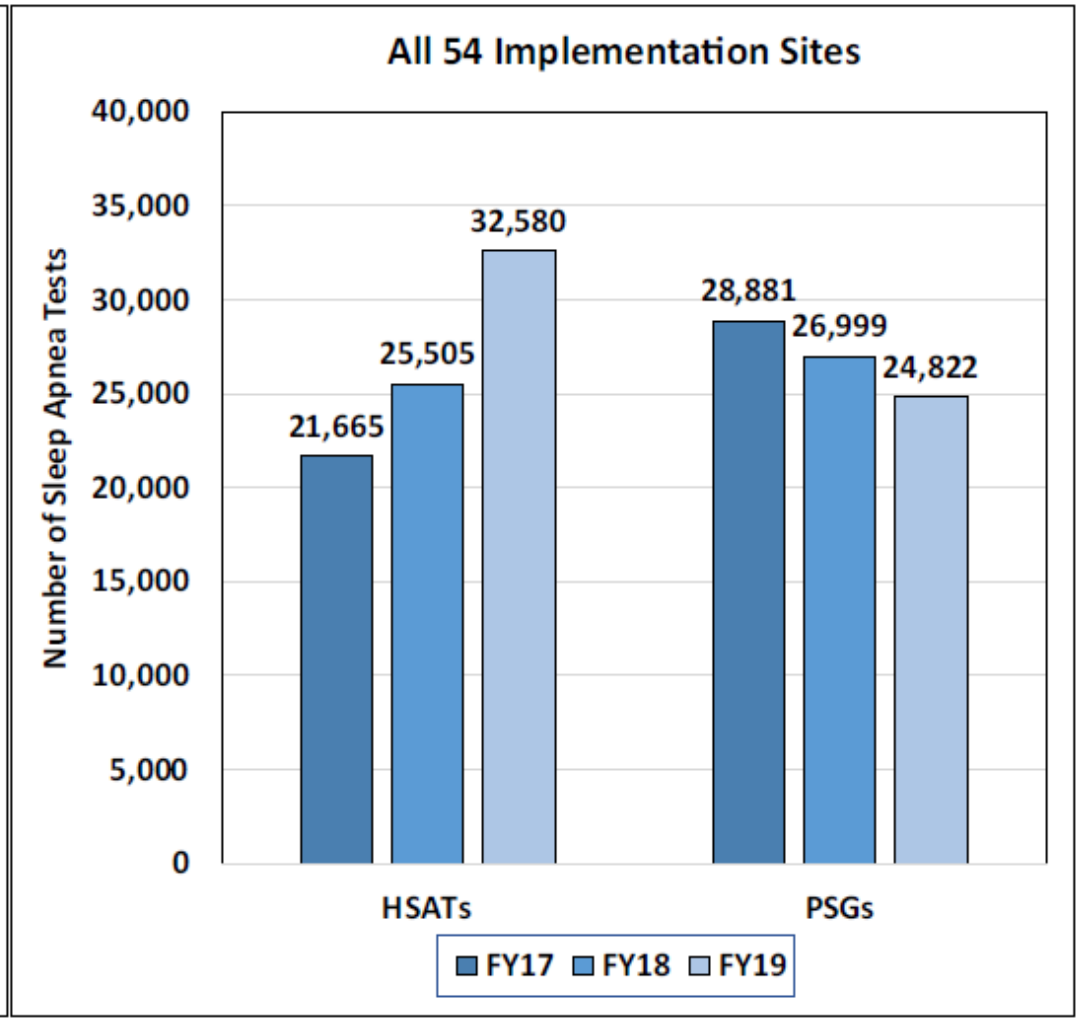
Key Theme	Description or Examples
Facilitators	
Leadership and Staff Support	-Helpful program leadership and useful set up packet -In-person site visit to get buy-in from staff and help with integration into workflows -Regular conference calls and updates provided support
Dedicated Resources	-Staff hires in progress to expand to all PACT teams -Extra recorders have expanded services -Interest in cross training staff -Expansion of REVAMP from CPAP to HST will require additional personnel and resources -Tablet on-site for enrollment Telemedicine clinical technician on-site
Perception of value for clinicians/positive feedback from Veteran	-Learning curve for set up has been fairly simple -Extra recorders for CBOCs and ability to return by UPS help Veterans who live more than 2 hours from clinic -Veterans value being in new program
Better Data	-Provided important clinical data in a standardized format -Veterans more knowledgeable about their care
Barriers	
Insufficient staff or staff time	-HSAT deferred until additional technician is hired -Struggling to hire staff -Have not started due to lack of staff; not enough staff to get scheduling done -Slow hiring process; lack of one member can have a huge impact on program.
VA system issues	-Privacy and IT guidance not clear -DS logon to REVAMP is problematic -Competing priorities for leadership
Local VA issues	-Programs not installed in time for training -Local IT not set up for recorder -Set up should not take 6 months -IT and Biomed processes are difficult -Program does not fit local model of care delivery
Technology: Program Specific	-Understanding of technology set up for remote sleep study reading not complete -Need for functionality for clinicians such as changing patient email, easier data entry -Delays in receiving data from vendors so data is missing in REVAMP
Lack of perceived usefulness	-Medical Center RT leadership resistant to new procedures -Veterans perceive that too many questionnaires must be completed to register

Survey of sites receiving HSAT devices

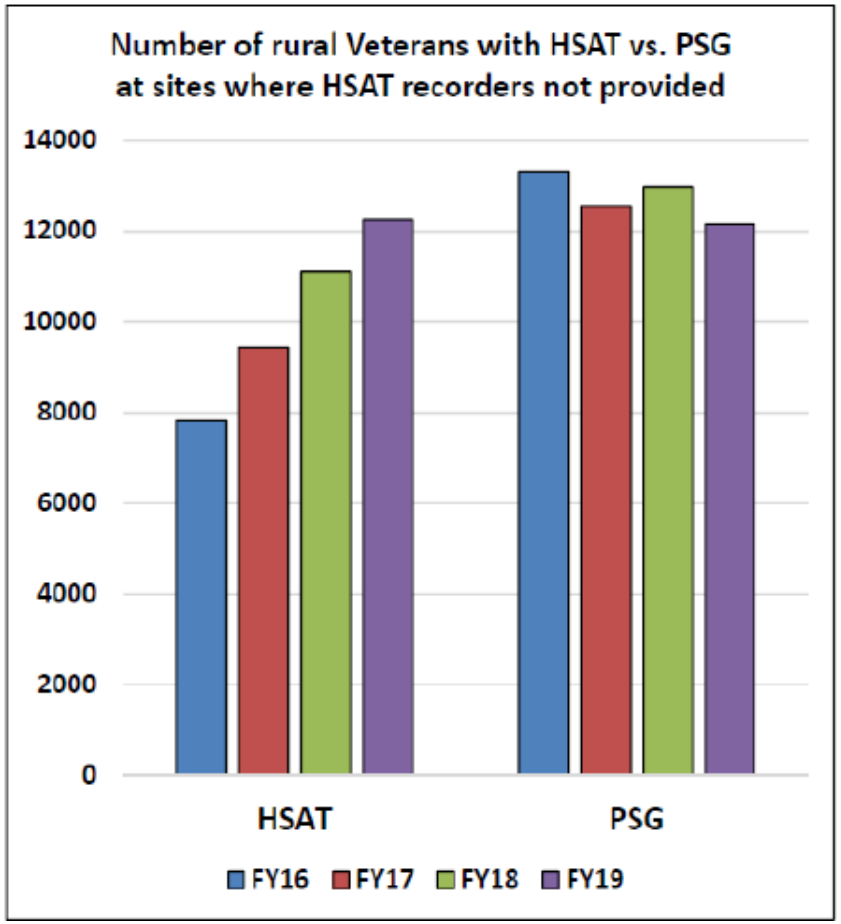
Self-reported measures of access:	Baseline	3 month	6 month
Number of respondents	36	34 (95%)	27 (75%)
Existing HSAT program (# programs)	31		
Recorders per site (avg.)	32	38	37
Home sleep studies in past 4 weeks (avg.)	18	43	61
Sleep Study Wait Time (days, avg.)	26	12	14
Polysomnograms per week (avg.)	22	21	20
In-lab Wait Time (days, avg.)	44	37	28

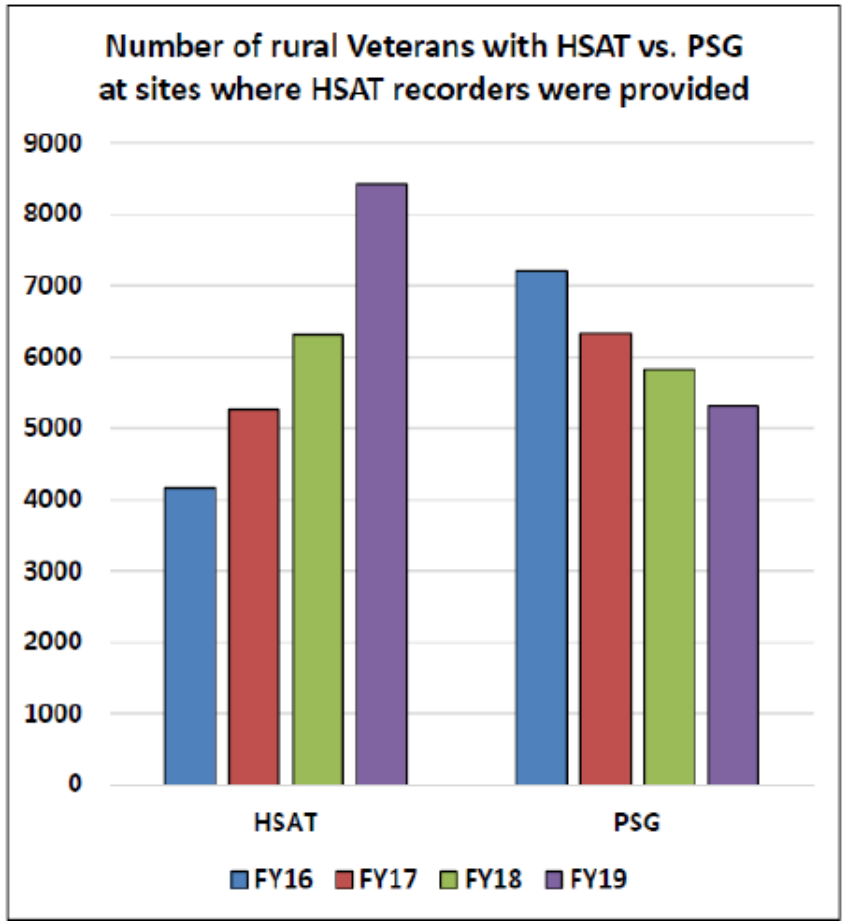
Number of overnight sleep tests completed using home sleep apnea testing (HSAT) or polysomnography (PSG) during fiscal years 17, 18, and 19.





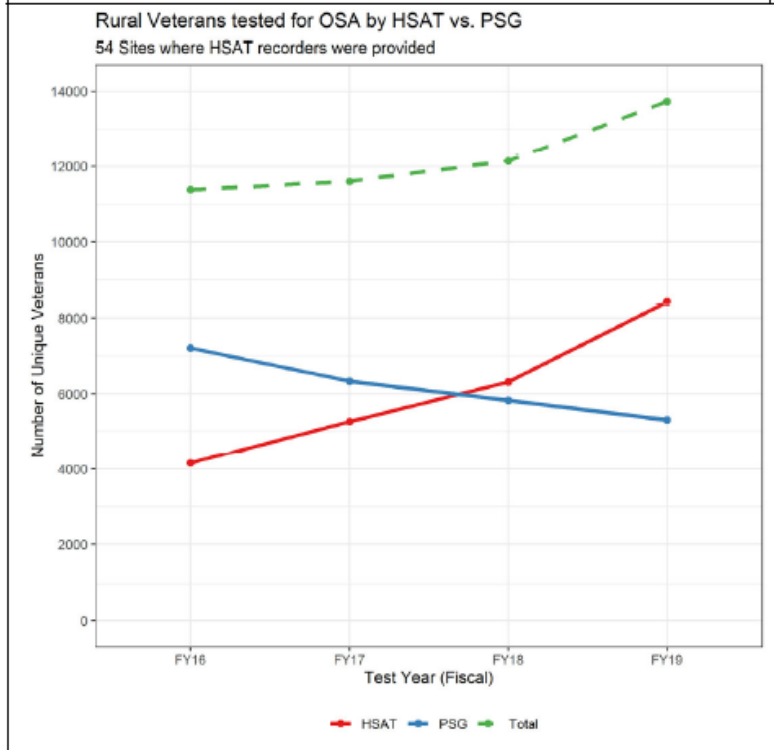
Number of overnight sleep tests completed using home sleep apnea testing (HSAT) or polysomnography (PSG) during fiscal years 16, 17, 18, and 19 in RURAL Veterans



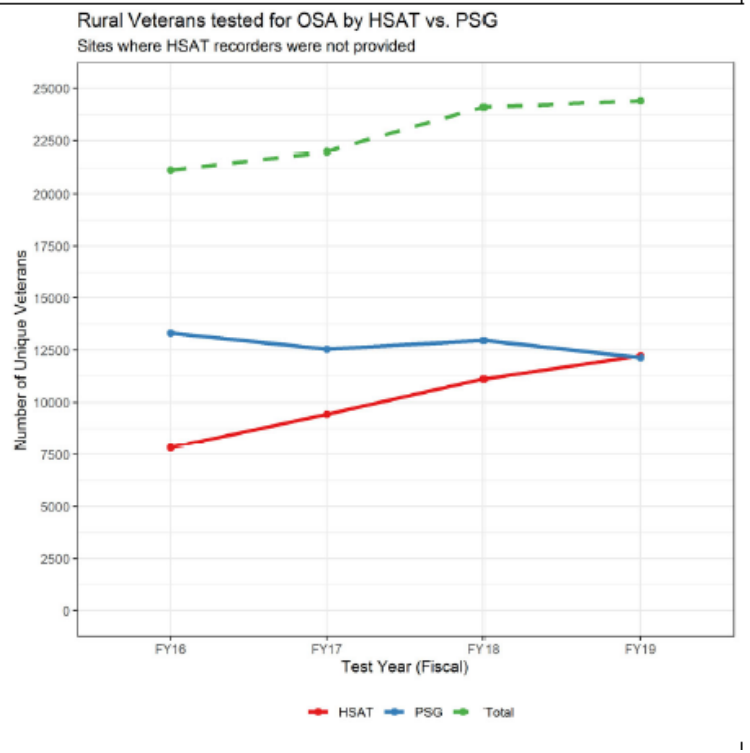


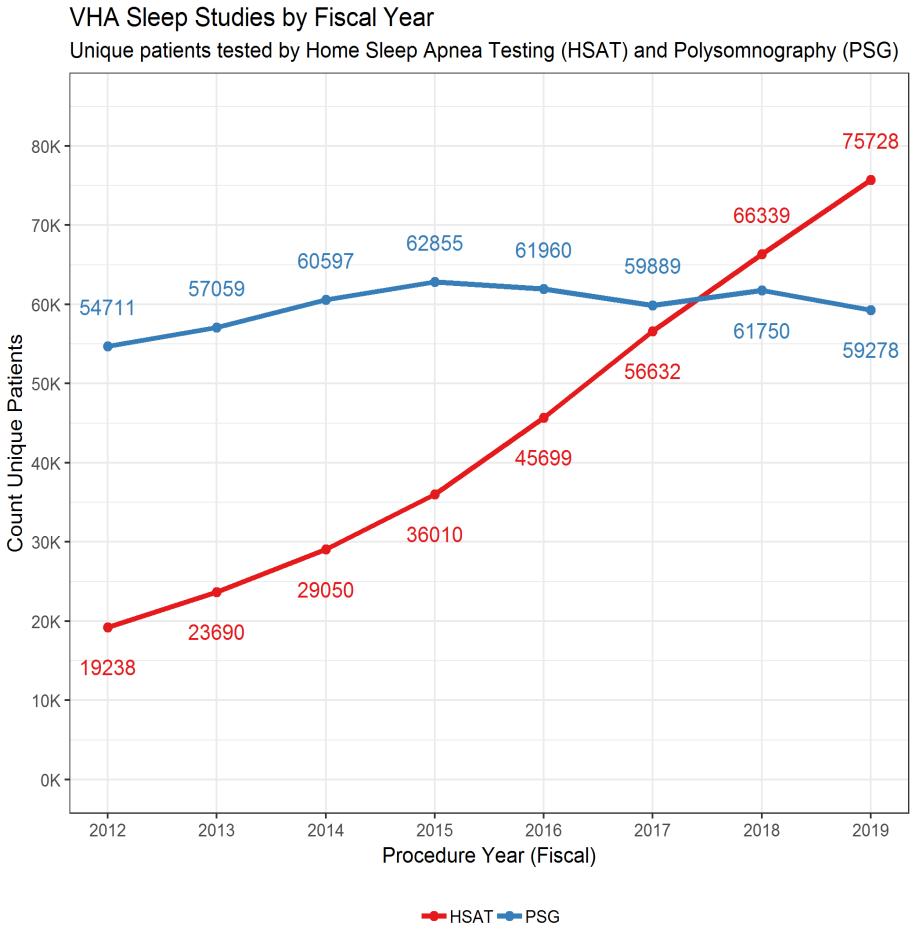
National use of HSAT and PSG: Rural and Overall

Number of rural Veterans tested for OSA with HSAT vs. PSG at 54 sites that received HSAT recorders



Number of rural Veterans Tested for OSA with HSAT vs. PSG at ~90 sites that did not receive HSAT recorders





Data source: CDWRB03, 2019

Research and Operations: A Complementary Partnership

- Operational teams function on different principles
  - Is what we want to do going to avoid harm? Cost less?
  - Can it be measured in some way/shape/form?
  - If yes, then implement/scale the intervention.
- Research teams may spend years on the lifecycle of a project
  - Highly rigorous methodology
  - Non-inferiority or significant benefit must be shown
  - Disconnect with findings at a single or handful of sites and actual implementation nationally

Research and Operations: A Complementary Partnership

When Operations and Research are required to work together we get:

- Enhanced communication on operational priorities and how to measure effectiveness of an intervention or clinical program
- Immediate feedback/data is available to facilitate decision making about continuing, modifying, or shifting the direction of the intervention/program
- Development of data dashboards that are usable by clinical sites and created by professionals! (we are all then looking at the same data for decision making and evaluation of local effectiveness of our programs)
- Synergy in asking new questions relevant to learning healthcare systems
- Improved dissemination of work performed (other than memos, talks, internal communication) that promotes VHA

CLINICAL REVIEW

Prevalence and management of sleep disorders in the Veterans Health Administration

Robert L. Folmer [a, b, *], Connor J. Smith [c], Eilis A. Boudreau [a, c, d], Alex W. Hickok [a], Annette M. Totten [c], Bhavika Kaul [e, f], Carl J. Stepnowsky [g, h], Mary A. Whooley [e, f], Kathleen F. Sarmiento [e, f]

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Sleep Medicine Reviews 2020,
https://doi.org/10.1016/j.smrv.2020.101358

Effects of Computer-Based Documentation Procedures on Health Care Workload Assessment and Resource Allocation: An Example From VA Sleep Medicine Programs

Kathleen F. Sarmiento, MD, MPH; Eilis A. Boudreau, MD, PhD; Connor J. Smith, MS; Bhavika Kaul, MD; Nancy Johnson, RN, MSA, BSN; and Robert L. Folmer, PhD

Fed Pract 2020, https://doi.org/10.12788/fp.0023

Implementation Strategies for Frontline Healthcare Professionals: People, Process Mapping, and Problem Solving

Amy D. Lu, MD, MAS[1,2], Bhavika Kaul, MD[1,2], Jill Reichert, BA[1,3], Amy M. Kilbourne, PhD, MPH[4,5], Kathleen F. Sarmiento, MD, MPH[1,2,3], and Mary A. Whooley, MD[1,2,4]

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J Gen Intern Med 2020, https://doi.org/10.1007/s11606-020-06169-3

Comparing VA and Community-Based Care: Trends in Sleep Studies Following the Veterans Choice Act

Frances M. Weaver, PhD[1,2], Alex Hickok, MA[3], Bharati Prasad, MD[4,5], Elizabeth Tarlov, PhD[1,6], Qiuying Zhang, MA[7], Amanda Taylor, PhD[7], Brian Bartle, MPH[1], Howard Gordon, MD[1,4,8], Rebecca Young, MA[3], Kathleen Sarmiento, MD[9,10], and Denise M. Hynes, PhD[3,11,12]

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J Gen Intern Med 2020, https://doi.org/10.1007/s11606-020-05802-5

TeleSleep: A successful program because of this partnership

- Renewed funding by ORH for FY21-23
- Annual budget in TH/OCC to support Sleep equipment for all programs
- Established the model for a research/operational partnership in new specialty care clinical resource hubs
  - V21 Sleep Clinical Resource Hub
    - Primary goal is to reduce utilization and cost of community care
      - Expansion of HSAT
      - Share staff and equipment across VISN
      - Centralize services within a VISN

ORH Hubs/Spokes

Fiscal Year	Hubs	Spokes
17/18	7	35
19	7	43
20	11	61
21	16	68