VA’S TELESLEEP PROGRAM: REDUCING DISPARITIES IN RURAL SLEEP CARE

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Kathleen (Katie) F. Sarmiento, MD is boarded in Pulmonary Disease, Critical Care, and Sleep Medicine. She completed medical school and her master in public health at Tulane University, and her residency and both Pulmonary/Critical Care and Sleep Medicine fellowships at the University of Maryland. She has held faculty positions at the University of Maryland, University of California San Diego, and now is an Associate Professor of Medicine at the University of California San Francisco. She is the Director of Sleep Medicine at the San Francisco VA Health Care System, and is a national lead for the VA Pulmonary, Critical Care and Sleep Program Office. Dr. Sarmiento has led several initiatives within VA focused on building infrastructure for VA Sleep programs, including national approvals for remote monitoring of positive airway pressure devices, national stop code changes to improve tracking the type of sleep services provided in sleep programs, development of sleep event capture systems and associated productivity measures for respiratory therapists and sleep technologists, and modernization of technologies used in VA Sleep. She is the national lead on an Office of Rural Health $24m grant to expand sleep telemedicine enterprise-wide, and has gained recognition as an innovator and thought leader within VA related to improving health care delivery, reducing cost, sharing resources, and improving operational efficiency.
VA’s TeleSleep Program
Reducing Disparities in Rural Sleep Care

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• Meet VHA and its Veterans
• Rurality as a Disparity
• A Crisis in Sleep Care
• Proposed Solutions
• Proposed Outcomes
• Measuring Effectiveness
VHA HEALTHCARE SYSTEM

9.12 Enrolled Veterans
- 9.4% women
- 6.41m unique treated in FY17

1,243 health care facilities
- 5 Regions
- 18 VISNS
- 143 VA Hospitals

VHA DEMOGRAPHICS

- Projected U.S. Veteran Population: 19,998,799
  - Female: 1,882,848 (9.4%)
- Percentage of Veteran Population 65 or older: 47%
- Veteran Population by Race:
  - White 81.6%
  - Black 12.3%
  - Hispanic 7.4%
  - Other 3.5%
  - Asian/Pacific Islander 1.8%
  - American Indian/Alaska Natives 0.7%

Department of Veterans Affairs Veterans Population Projections Model (VetPop), 2016
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RURAL CHALLENGES

- Fewer housing, education, employment and transportation options
- Greater geographic and distance barriers
- Limited broadband internet
- Shortages of primary and specialty care providers
- Difficulty of safely aging in place in rural America
- Hospital closings due to financial instability
RURAL VETERAN CHARACTERISTICS

- 58% enrolled in VHA vs. 37% urban
- 6% are women
- 15% are minorities
- 27% do not have access to the internet at home
- 56% are over 65 years
- More likely to have obesity, hypertension, COPD and heart conditions than urban Veterans

Table 2: Prevalence of 50 Diagnoses in Rural and Urban Veteran Populations, Relative Risk Ratios, and 95% Confidence Intervals

<table>
<thead>
<tr>
<th>Disease Category</th>
<th>Rural N % (95%)</th>
<th>Urban N % (95%)</th>
<th>RR (95% CI)</th>
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<tbody>
<tr>
<td>Gastrointestinal disorders</td>
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<td>Peptic ulcer disease</td>
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<td>Diabetes</td>
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<td>Other cancer</td>
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<td>Chronic obstructive pulmonary disease</td>
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<td>Atrial fibrillation</td>
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<td>Peripheral vascular disease</td>
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<tr>
<td>Congestive heart failure</td>
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<td>Carotid vascular disease</td>
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<td>Malignancy</td>
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<tr>
<td>Acute disorders</td>
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<tr>
<td>Psychiatric disorders</td>
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<td>Hypertension</td>
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<td>Hyperlipidemia</td>
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<td>Renal disorders</td>
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<td></td>
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<tr>
<td>Other medical disorders</td>
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</tbody>
</table>

J Rural Health 2006;22:204-211.
Percentage Rural and Highly Rural Veterans Of the Total Veteran Population by State, FY14

Number of VHA Rural and Highly Rural Enrollees by State, FY14
WHERE ARE HEALTH/HEALTH CARE DISPARITIES IN VHA?

KQ1: For what Veteran groups/populations are health and healthcare disparities prevalent?

- Utilization least studied in all populations
- Strongest evidence of disparities in rural residence, distance to VA facility, and homelessness

Prevalence of and interventions to reduce health disparities in vulnerable Veteran populations: A map of the evidence. VA ESP Project #05-225; 2017
Few studies evaluating quality of care based on rurality/distance, with most showing no disparity or mixed/unclear.

- Overall very few studies reported disparities in health outcomes
- Exceptions: Veterans with mental health conditions and Veterans of lower SES
WHERE ARE HEALTH/HEALTH CARE DISPARITIES IN VHA?

KQ2: What are the effects of interventions implemented within VHA to reduce health disparities?

Figure: Evidence Map: Studies Examining Interventions Designed to Reduce Health Disparities in the VHA by Population and Intervention Type

Prevalence of and interventions to reduce health disparities in vulnerable Veteran populations: A map of the evidence. VA ESP Project #05-225. 2017

Disparities in Rural Sleep Care
VETERAN ASSESSMENTS: ARE WE MEETING NEEDS?

• Barriers to Getting Sleep Care
  – Too far to travel to San Francisco: 69%

• Preferred modality of care
  – In person visits: 59%
  – Video Chat clinics: 56%

• Accessibility
  – Access to the internet: 85%
  – Lives where there is cell tower coverage: 96%
  – MHV Logon credentials: 53%

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WHAT THE HECK CONSTITUTES SLEEP CARE?

Sleep Testing

AND Chronic disease management

VA Sleep Medicine

- 1.43m enrolled Veterans in FY16 had a diagnosis of OSA
  - 16.1% of all unique veterans enrolled that year
- FY17 unique Veterans seen in Sleep clinics: 1,197,447
- FY17 total encounters with Veterans for Sleep: 2,624,462
- Growth in VAMCs offering Sleep care:
  - FY 13: 92/152 (61%)
  - FY 15: 119/152 (78%)
  - FY 18: 133/143 (93%)
DEMAND FOR SLEEP CARE

Limited Access to Sleep Care
- Long wait times for testing and clinics
- High cost of outsourced care: $234,905,794

VA PROGRAMS WITH SLEEP TESTING
COMMUNITY CARE AS A DISPARITY: MS. Z

Time to Care: VA, FBC, Choice

- In-House VA 2012-17
- In-House VA 2018
- Fee-Based Care 2010-17
- Choice 2016-17

- Referral to sleep study
- Sleep study to CPAP
- Referral to CPAP

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AMERICA’S VETERANS THRIVE IN RURAL COMMUNITIES

The Office of Rural Health (ORH) implements a targeted, solution-driven approach to improve access to care for the 2.6 million veterans living in rural communities who rely on the U.S. Department of Veterans Affairs (VA) for health care. ORH leads the national effort to improve health care access and quality for veterans in rural areas.

The core solutions include:
- National Rural Needs Assessment
- Rural Promising Practices that offer new models of rural care
- Collaborative Rural Access Solutions with VA program offices

To learn more, visit www.ruralhealth.va.gov.

OFFICE OF RURAL HEALTH

- Promote health & well-being of rural veterans
- Generate/diffuse knowledge about rural Veterans’ health
- Strengthen community health care infrastructure that serves rural Veterans
- Inform policies that impact rural Veteran care delivery
- 2 Models
  - EWIs (>40 national programs)
  - Rural Promising practices (>15 models of care)
WHAT WE THINK WE SHOULD PROVIDE

• The same services we offer to urban Veterans
• Reduced travel burden to receive care
• Timely and appropriate care
• Cost-effective care

PROPOSED SOLUTIONS

• Shared resources across sites
  – Staff
  – Equipment
• Shared knowledge
  – Toolkits
• Build a community
• Increase standardization
  – Coding, equipment
A high performance TeleSleep network for Veterans in rural areas

- REVAMP
- Telephone clinics
- Home sleep apnea testing
- VTel clinics
- Remote wireless monitoring of PAP data
- VA Video Connect

Veterans in rural areas

CBOCs

VAMCs with no sleep program

>50% Rurality

Comprehensive Sleep Center

Local and Virtual Staff
Application of telehealth technologies for diagnosis and management of OSA

1. Initial In-person
2. In-lab PSG
   - Diagnostic PSG
   - Split PSG
   - AutoCPAP treatment
   - CPAP treatment
3. Home sleep study
   - Store and forward
   - Store and forward of wireless data
4. AutoCPAP treatment
5. Clinic FU
   - Phone or video teleconference
6. Long term management
   - Phone or video teleconference

Remote Veteran Apnea Management Platform
About REVAMP

REVAMP is a Veteran and provider-facing web application designed to help facilitate the remote diagnosis and management of obstructive sleep apnea.

• Complete Diagnostic Questionnaires from Home
• View PAP device data
  o Philips & Resmed
• Access OSA Education
• Message Their Provider
• Remotely Collect & Score Patient Questionnaires
• Generates Templated Progress Notes
• One-stop shop for PAP data
• Develop Reports

REVAMP Integrations

1. Master Veteran Index (MVI)
   Clinicians use MVI to import patient profile / demographics

2. Identity Management (SSO / SSOe)
   Veterans log in to REVAMP with DS Logon and Clinicians with PIV.

3. Future Integrations
   Depending on the PAP device used by the patient, REVAMP pulls data from the manufacturer system to import PAP usage and mask leak data.

Phils Respironics
Resmed Cloud
Fisher & Paykel
Devilbiss

EHR
ROES PAP re-supply
Home Sleep Apnea Testing

- Home testing
  - Mailed
  - CBOC delivery
  - T3, watchpat

VA Video Connect & VTel
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• Proposed Measures/Outcomes
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TELESLEEP MEASURES

• ORH
  – Number of rural Veterans served
  – Women, OIF/OEF/OND, ethnicity

• Program Office
  – Access metrics (wait times)
  – Types of services offered

• Patient
  – Satisfaction with care
  – Functional Outcomes
  – Equivalent Treatment use/Efficacy
  – Access to support and education
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INDICATIONS OF EFFECTIVENESS

• System
  – Utilization
  – Access
  – Reduced NVC visits & cost
• Patient Engagement
  – Tools and ability to participate in care
  – Goals of Care
  – Understand where sleep fits as a priority
    • Personal, cultural, societal influences
TELESLEEP MEASURES

- FY18
- 7 hubs, 11 → 23 spokes
- 105 Personnel trained
  - 57 clinicians
  - 48 staff

- Of the 77,528 sleep visits occurring at the sites serving this program 25,384 (32.7%) involved rural Veterans
- Rural Veterans in the TeleSleep program utilized telemedicine at a higher rate (53%) than rural Veterans outside the program (31%)
- Increased access to diagnostic testing:
  - 19% increase in HSAT vs. 1.4% PSG
EFFECTIVENESS: SYSTEM LEVEL

• Demonstrate effective implementation of healthcare delivery tools
  HSAT Resourcing Initiative
    • $6m ORH, 1,300 devices
    – 54 programs resourced
      • 13 without HSAT
      • 5 with no diagnostic testing
    – Surveys
      • Baseline, 3-mo, 6-mo

Impact of Recorder Resourcing

<table>
<thead>
<tr>
<th>Measure</th>
<th>Goal (%)</th>
<th>Achieved (%)</th>
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<tbody>
<tr>
<td>Reduce overall wait times</td>
<td>89</td>
<td>50</td>
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<tr>
<td>Improve Veteran satisfaction</td>
<td>53</td>
<td>58</td>
</tr>
<tr>
<td>Increase sleep study throughput</td>
<td>83</td>
<td>23</td>
</tr>
<tr>
<td>Reduce Veteran travel</td>
<td>81</td>
<td>43</td>
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<tr>
<td>Reduce Choice referrals</td>
<td>61</td>
<td>59</td>
</tr>
<tr>
<td>Improve staff satisfaction</td>
<td>53</td>
<td>58</td>
</tr>
<tr>
<td>Increase ability to partner with another VA</td>
<td>47</td>
<td>82</td>
</tr>
<tr>
<td>Increase efficiency of sleep testing</td>
<td>33</td>
<td>58</td>
</tr>
</tbody>
</table>
EFFECTIVENESS: SYSTEM LEVEL

• Demonstrate effective implementation of healthcare delivery tools
• Demonstrate accessibility of data to measure outcomes (i.e., PAP adherence, patient questionnaire responses)

National Wireless PAP Accounts

Organization

VA National Account (Vendor Server)

Offices

Portland  San Francisco  Philadelphia  Atlanta

Administrators

Lead Administrator Access to all Offices

Users

VA Sleep Providers & DME Staff Access to Local Office Only

EA: 53 Sites
Airview: 51 Sites
MEASURING EFFECTIVENESS

• Capture of health factor measures in EHR
  – Sleep Specific measures (i.e., AHI)
  – Patient questionnaire responses
    • Sleepiness
    • Insomnia severity
    • HRQOL
    • Functional Outcomes

SUMMARY

• Opportunities
  – Identify Gaps
  – Evaluate disparities, interventions, implementation, outcomes

• Challenges
  – Asking the right questions to assess needs
  – Knowing how to adapt to meet needs
  – Setting up accurate data capture for evaluations
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- Jill Reichert (PM)
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VA Office of Rural Health
VA Telehealth Services
VA Connected Care
VA Community Care

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