Super Users' Proactive Integrated Use of Virtual Healthcare Resources to Inform Best Practices in Rehabilitation Specialty Care Settings

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Announcements

- 1. OCC Letter of Support Request Portal live on SharePoint
- 2. REDCap questionnaire about self-report measures for Virtual Care
- 3. Upcoming cyberseminar: Effects of Early Implementation of Clinical Resource Hubs on Primary Care Quality in the Veterans Health Administration

To subscribe to the VC CORE listserv, please email VHAVirtualCareCORE@va.gov







Project Overview



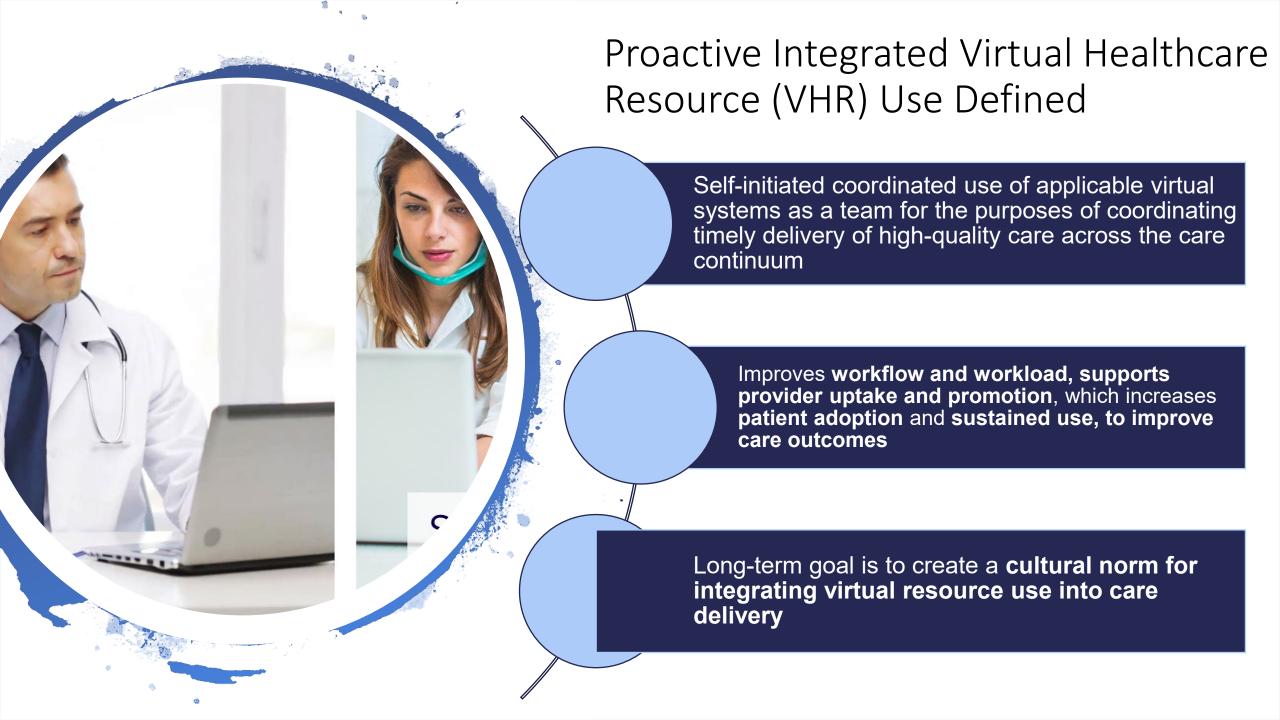
Data Findings



Data Visualization & Product Development



Future Directions



Background

Previous studies on the use of virtual healthcare resources (VHRs) such as Secure Messaging (MHV), mobile apps, and telehealth services are typically adopted by patients when reinforced by clinical care team members.

Previous studies have not demonstrated established proactive integrated use of available VHRs, across the healthcare continuum, or within service-specific clinical workflows.

Early adopters of VHRs, known as "Super Users" are paving the way for new best practices utilizing VHRs in clinical workflows.

This project addresses the need to build knowledge and capacity for the proactive integrative use of VHRs to complete tasks across the continuum of care and determine if service-specific workflows are needed.

Evidence-Base: Secure Messaging Adoption

> J Med Internet Res. 2014 Mar 6;16(3):e75. doi: 10.2196/jmir.2976.

Evaluating user experiences of the secure messaging tool on the Veterans Affairs' patient portal system

Jolie N Haun ¹, Jason D Lind, Stephanie L Shimada, Tracey L Martin, Robert M Gosline, Nicole Antinori, Max Stewart, Steven R Simon

> J Med Internet Res. 2015 Dec 21;17(12):e282. doi: 10.2196/jmir.5152.

Large-Scale Survey Findings Inform Patients'
Experiences in Using Secure Messaging to Engage in
Patient-Provider Communication and Self-Care
Management: A Quantitative Assessment

Jolie N Haun 1, Nitin R Patel, Jason D Lind, Nicole Antinori

Original Article

EVALUATING SECURE MESSAGING FROM THE VETERAN
PERSPECTIVE: INFORMING THE ADOPTION AND SUSTAINED USE
OF A PATIENT-DRIVEN COMMUNICATION PLATFORM

Jolie N. Haun, Jason D. Lind, Stephanie L. Shimada, Steven R. Simon

First published: 02 September 2014 | https://doi.org/10.1111/napa.12029 | Citations: 9

Evidence-Base: Secure Messaging Adoption

Appl Clin Inform. 2017 Oct; 8(4): 1003-1011.

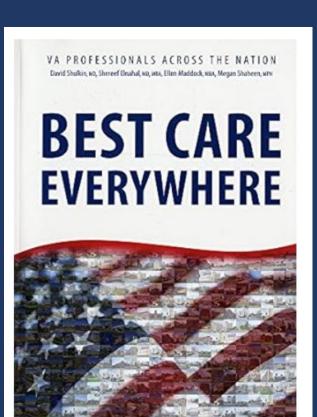
Published online 2017 Dec 14. doi: 10.4338/ACI-2017-05-RA-0088

PMCID: PMC5802310

PMID: 29241240

Clinical Practice Informs Secure Messaging Benefits and Best Practices

Jolie N. Haun, ^{1,2} Wendy Hathaway, ¹ Margeaux Chavez, ¹ Nicole Antinori, ¹ Brian Vetter, ³ Brian K. Miller, ⁴ Tracey L. Martin, ⁵ Lisa Kendziora, ⁶ Kim M. Nazi, ⁷ and Christine Melillo ¹



Haun, JN, Chavez, M, Hathaway, W, Antinori, N, Vetter, B, Miller, B, Martin, T, Ruggerie, T Kendziora, L. Nazi, K. Promoting Proactive Use of Secure Messaging Using Promising Practices. In Best Care Everywhere. Eds. David Shulkin, Shereef Elnahal, Ellen Maddock, Megan Shaheen. US Department of Affairs. 2017. Pages 6-7.

Evidence-Base: Health Information Exchange Systems Integration

JMIR Res Protoc. 2015 Jan-Mar; 4(1): e28.

Published online 2015 Feb 27. doi: 10.2196/resprot.3815

PMCID: PMC4376141 PMID: 25803324

A Participatory Approach to Designing and Enhancing Integrated Health Information Technology Systems for Veterans: Protocol

Monitoring Editor: Gunther Eysenbach

Reviewed by Donald McInnes and Jason Owen

Jolie N Haun, EdS, PhD,^{®1} Kim M Nazi, BS, MA, PhD,² Margeaux Chavez, MPH, MA,¹ Jason D Lind, MPH, PhD,¹ Nicole Antinori, MBA,¹ Robert M Gosline,³ and Tracey L Martin, MSN, RN⁴

> J Med Internet Res. 2016 Oct 6;18(10):e266. doi: 10.2196/jmir.6499.

Developing a Health Information Technology Systems Matrix: A Qualitative Participatory Approach

Jolie N Haun ¹, Margeaux Chavez, Kim M Nazi, Nicole Antinori

> J Med Internet Res. 2017 Oct 23;19(10):e359. doi: 10.2196/jmir.8614.

Veterans' Preferences for Exchanging Information Using Veterans Affairs Health Information Technologies: Focus Group Results and Modeling Simulations

Jolie N Haun ^{1 2}, Margeaux Chavez ¹, Kim Nazi ³, Nicole Antinori ¹, Christine Melillo ¹, Bridget A Cotner ^{1 4}, Wendy Hathaway ¹, Ashley Cook ⁵, Nancy Wilck ⁵, Abigail Noonan ⁵

Evidence-Base: VHR Workflow Integration

Virtual Medical Modality Implementation Strategies for Patient-Aligned Care Teams to Promote Veteran-Centered Care: Protocol for a Mixed-Methods Study

Jolie Haun ^{1 2}, Margeaux Chavez ¹, Wendy Hathaway ¹, Nicole Antinori ¹, Christine Melillo ¹, Bridget A Cotner ^{1 3}, Julie McMahon-Grenz ¹, Brian Zilka ⁴, Shilpa Patel-Teague ^{1 5}, William Messina ⁴, Kim Nazi ⁶

Research article Open Access Published: 12 August 2021

Proactive integrated virtual healthcare resource use in primary care

Jolie N. Haun, Bridget A. Cotner, Christine Melillo ™, Vanessa Panaite, William Messina, Shilpa Patel-Teague & Brian Zilka

Research Open Access | Published: 15 November 2022

Provider reported value and use of virtual resources in extended primary care prior to and during COVID-19

Jolie N. Haun, Vanessa Panaite, Bridget A. Cotner, Christine Melillo [™], Hari H. Venkatachalam, Christopher A. Fowler, Brian Zilka & William Messina

Research Open Access | Published: 18 November 2022

Primary care virtual resource use prior and post COVID-19 pandemic onset

Jolie N. Haun, Vanessa Panaite [™], Bridget A. Cotner, Christine Melillo, Hari H. Venkatachalam, Christopher A. Fowler, William Lapcevic, Amy C. Alman, Dustin D. French, Brian Zilka & William Messina

Project Aims

Aim 1

Describe inputs, activities, and outcomes of identified virtual healthcare resources (VHR) super users across five specialty services (i.e., Cardiology, Whole Health, Spinal Cord Injury, Rehabilitation, Education).

Aim 2

Collaborate with operational partners to develop a VHR Best Practices Navigation Guide Blueprint to inform the development of navigation support to VHR education/information resources (e.g., Talented Management System (TMS).

Aim 3

Develop data visualization assets to organize and illustrate super users' best practices across the care continuum in 5 specialty services.







Overall Project Objective: Describe virtual health resource superusers' activities and outcomes to document their practices, to inform identification and dissemination of current and best practices.



Qualitative Methods Employed to Identify Best Practices of Virtual Healthcare Resources

Initial Interviews

Rapid Iterative
Content
Analysis

Follow-Up Interviews

Rapid Iterative
Content
Analysis

15 Superusers were identified in five special services



12 Superusers from the initial cohort conducted follow-up interviews for validation and VHR demonstrations



Project Notables

- This is a scan of "best practices" identified by super. Content may not be exhaustive due to respondents' knowledge base practices may have not been reported or respondents may be unaware a practice exists, or their "workaround" may not be an ideal practice.
- 2. With the constant changing virtual healthcare climate, especially post pandemic, these data are moving targets; policies and practices change regularly which impact accuracy of these data as our virtual systems evolve.
- 3. During analysis, we had to balance brevity and precision with a comprehensive illustration of proactive integrated use of VHRs.
- In general, only practices that emerged from the data are illustrated; however, we integrated knowledge that we know from the field these inclusions are denoted throughout.

Data Analysis & Visualization



Identified

Data Analysis & Visualization





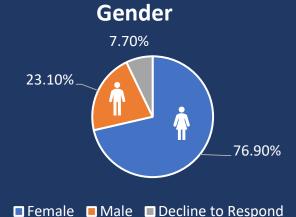
Mapped best practice VHR use (n=60) across specialties within categorization index

4

an index of 11 categories &

43 subcategories Contextualized best practices within Care Continuums

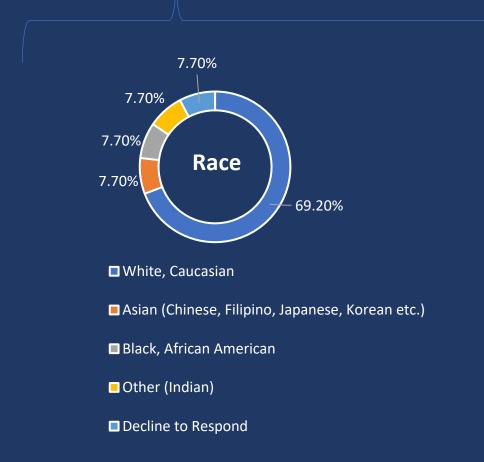
Demographics of Superusers (n=13)

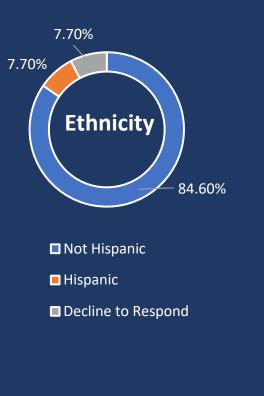


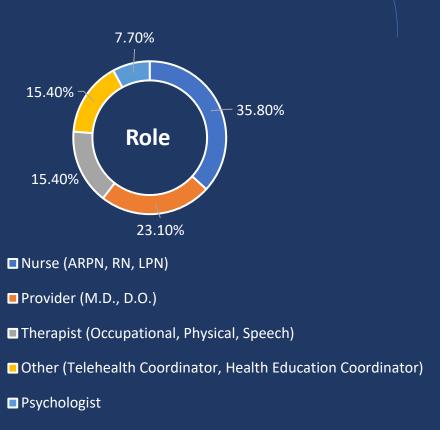
Age (Mean): 47.5 Years Old

Years in Practice (Mean): 18.4

Years in VA (Mean): 16.7



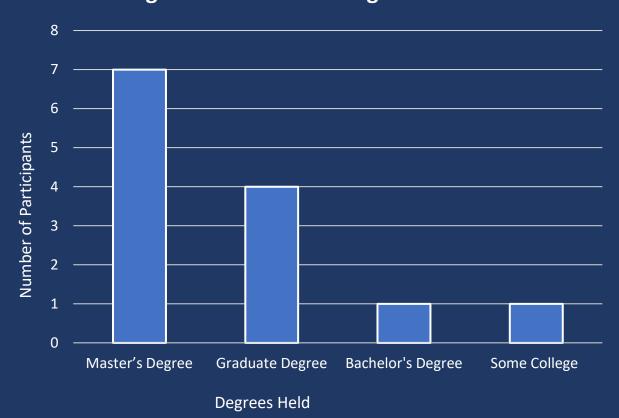




Demographics of Superusers (n=13)

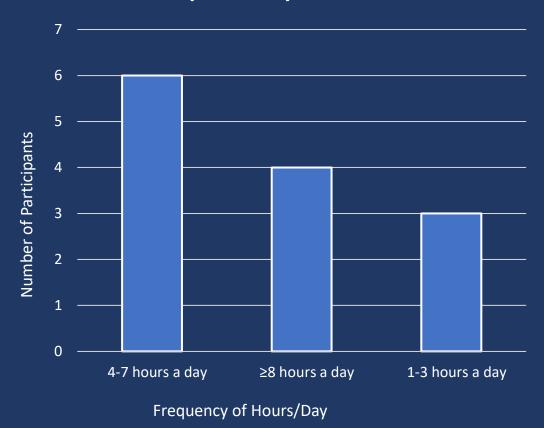


Highest Professional Degree





Participants' Reports of VHR Use



Interview Findings Summary



Benefits of VHRs

- Access to system and care
- Cost Effectiveness
- Improved Care

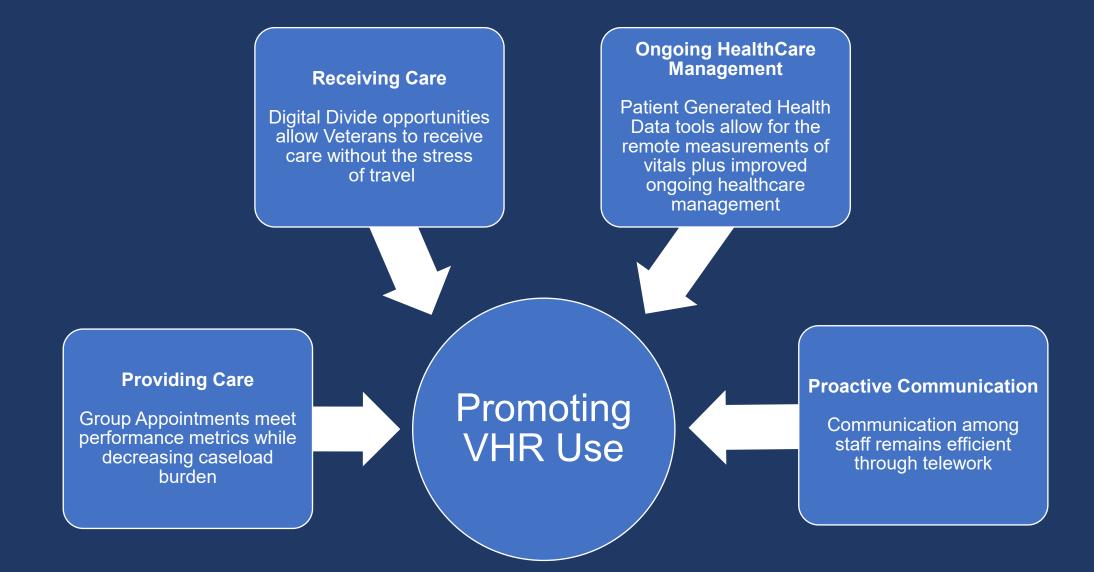
Barriers of VHR Use

- Connectivity Access
- Technology Literacy
- Human Resource and Devoted Time
- Awareness of Available VHRs

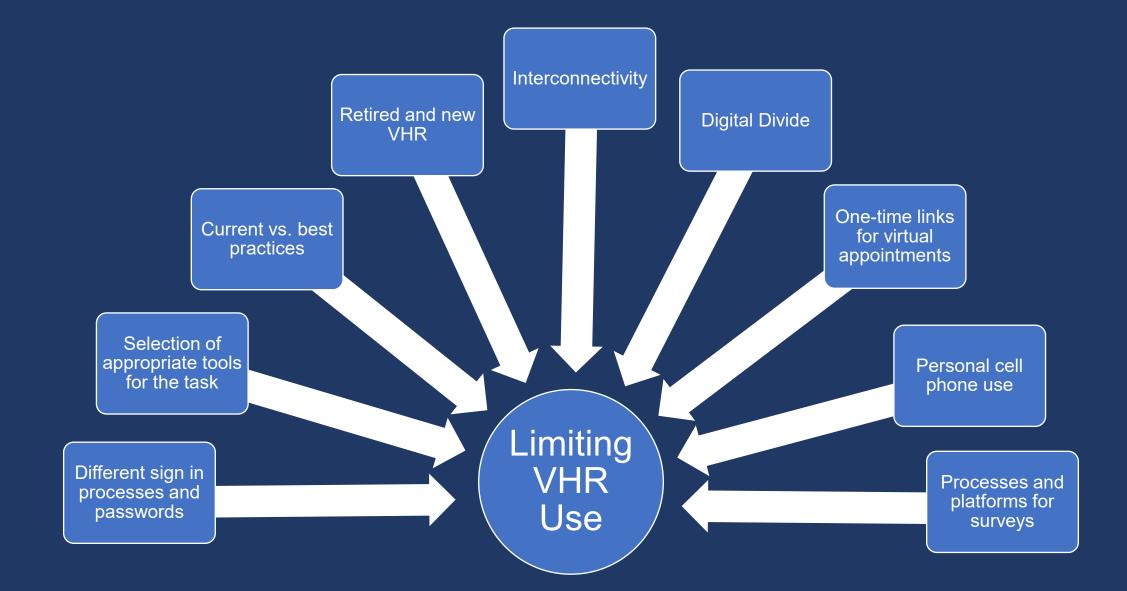
Facilitators for Proactive Integrative VHR Use

- Appropriate or Compatible Devices
- Real-Time IT Support
- Education and Knowledge
- Interconnection Between Different VHRs

Factors that Promote VHR use



Factors that Limit VHR Use



Identified Barriers & Solutions of Providing Virtual Specialty Care

Identified Barriers

- 1. Connectivity Access
- 2. Technology Literacy
- 3. Human Resource and Devoted Time
- 4. Awareness of Available VHRs



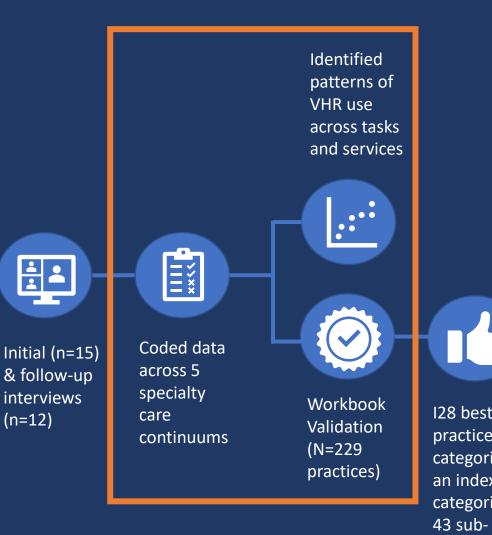
Identified Barriers and Solutions of Training Gaps and Redundancies

Identified Barriers

- 1. Technology Training and Awareness
- 2. Learning Curve Impacts Workflow
- 3. Limited Persistent or Hands-On Experience Available



Data Analysis Visualization



(n=12)



categories

Mapped best practice VHR use (n=60) across specialties within categorization index

Contextualized best practices within Care Continuums

VIRTUAL HEALTHCARE RESOURCE USE THROUGHOUT THE CARE CONTINUUM ACROSS SERVICES

Pre-encounter





Post-encounter



Medical Encounter – Combined Services

Pre-Appointment

- Schedule appointment recruitment for classes (Phone)
- Sends appointment reminders (VVC, App reminder, WebEx, Virtual care manager, email)
- Preparing for a visit (Phone, Appointment reminders, Secure Messaging, Health Summary, imaging, PACTS system in CPRS)
- Assess familiarity with the system VVC (Phone)
- CAN risk assessment to group Vets with elevated scores (CPRS notes and alerts)
- Discuss Advanced Directives (CPR VVC/telehealth)
- Identify current symptoms and treatments (Blue button, SM_telehealth_Kinsks)
- Views Calendar & Messages
 (SM_telephone)

Plan team activities via huddles Manage consults (CPRS, Telephone)

Check-in

- Online check-in (WebEx)
- 5 min. reminder email (VVC, WebEx)
- Complete required forms (CPRS, Veterans health library)
- Assess connectivity and troubleshoot (VVC)
- Ask Veterans to check in (VetLink Kiosks)
- Desk clerk informs providers of Veterans of arrival (Microsoft Teams, Google voice, CPRS)
- Personal information updates (VVC and CPRS at the same time)

History/ Examination • History taking (JLV, direct texting, CPRS

- **(**)
- Interview and exam (VVC, Virtual Care Manager, Telehealth, Telephone, WebE
- Outcome measures for mental health (CPRS)
- (Virtual Care Manager)

chart and imaging

Doximity)

- Reviews vitals and patient-generated data (Scale records, VA Cognitive Behavioral Therapy App)
- Home therapy system program to run baseline data (Virtual Care Manager)
- Measure and document health indices(CPRS, Labs and tests, SM, VVC, Veterans Health library, Kiosks)
- Consenting for procedures (CPRS, Veterans' health library)
- Assess home environment (VVC)

Diagnosis

- Review preexisting conditions (JLV, CPRS)
- Live self reported measures (WebEx chat box & screen share)
- Program specific dashboard for research documentation (Excel)
- Review labs and tests (Telehealth, VVC)
- Complete patient-reported questionnaires (Webex)
- Explain results of standardized assessments (e.g., FIM) (Virtual Care Manager)
- Document diagnosis (CPRS)

Treatment Plan & Care

- Patient education (non-VA apps, Telehealth, telephone, YouTube, Veterans Health Library, email, PowerPoint, Word doc., WebEx)
- (Share non-VA resources (Secure Messaging, email,)
- Coordinate care with other team members (Microsoft Teams, email)
- Communicate plan of care with providers (Microsoft Teams, Telephone, Virtual Care Manager)
- Coordinate care with other providers (Microsoft Teams)
- Document assessment and plan (CPRS, Veterans' health library)
- Prescribe medication (CPRS)
- Identify apps patient would benefit from (virtual tool Rx)
- Compensatory strategy teaching (Secure Messaging, Direct texting, VVC)
- Share Individualized treatment programs purchased by VA (Secure Messaging)

Check-out

- Make follow up appointment (Secure Messaging, CPRS, VCM)
- end polling questions, Feedback forms (WebEx, survey monkey)
- Clinic order and notes (PRS imaging health summary and PACT)
- Code work performed (Telephone, CPRS)
- Order equipment
- Check if equipment was received (Secure Messaging)

Post-Appointment

- Program feedback and evaluation (survey Monkey)
- Patient education (Blind email)
- Document past encounter and provide information to for other providers (CPRS,
- Communicate plan of care with providers (Microsoft Teams, Telephone, Virtual Care Manager
- Revise treatment plan (Annie/Vetext, CPRS, Journals, non VA mobile apps, VA mobile apps, Kiosks, Vista Imaging/scheduling)
- Collect patient-generated data (FitBit/Apple Watch)
- Keep up to date on education (online journals)

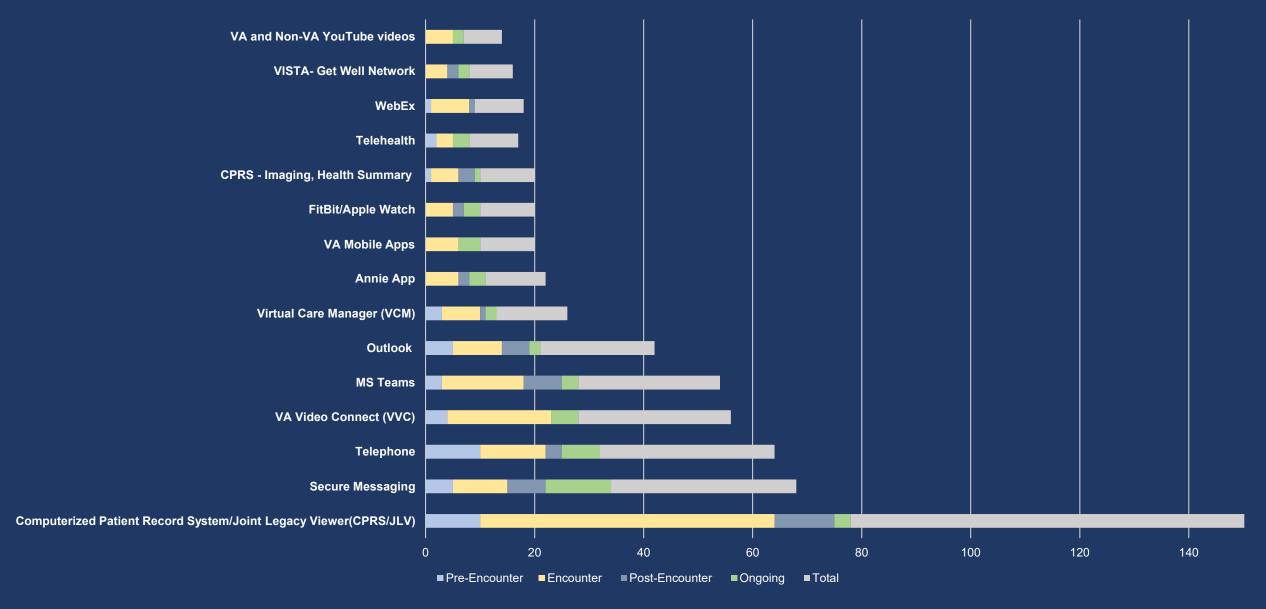
Ongoing Health Management

Patient Activities & VHRs Tracking of data (e.g., BP, weight) (fit bit, CBTI app for sleep) Report satisfaction with care (online surveys) Appointments (VVC) Communicating with Provider (Telephone, Virtual Care Manager) Provider Activities & VHRs Communicate and consult w/healthcare providers (Teams) Receiving/managing referrals (utilizing excel to keep track of individuals coming to Immersion). Recruitment for the different programs. Search for resources in (SharePoint) Assist with care level transitions Medication reconciliation Provide Veterans with ongoing home exercises (phone calls, Virtual Care Manager) Assist with prescription refills (Secure Messaging, CPRS)

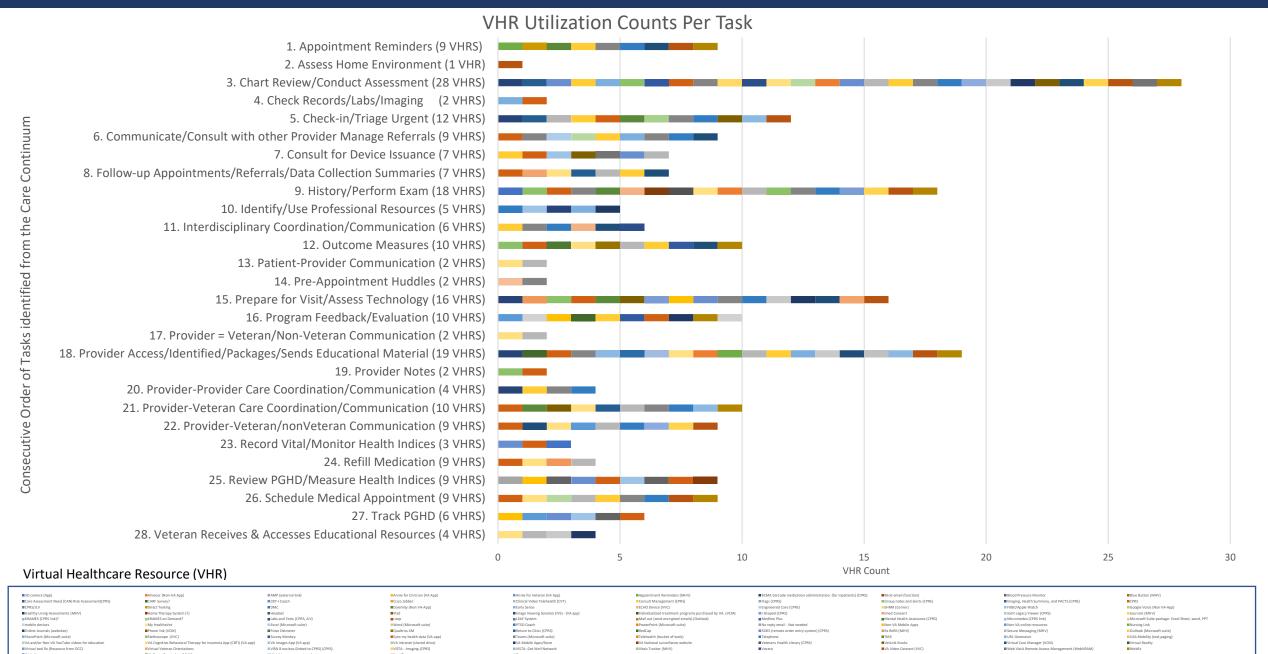


Top Utilized VHRs





Preliminary findings



Exemplar Practices of Virtual Care Provider Super Users



CARDIOLOGY

Utilizes a provider facing VA app VA Video Connect (VVC) that automatically integrates Patient Generated Health Data (PGHD) vitals from Veteran Bluetooth-enabled devices (e.g., Apple Watch, FitBit and Pulse Ox machine) to inform clinical decision-making.



Dedicated telehealth coordinator assesses the readiness of the Veteran prior to their visit and performs a virtual practice with the Veteran.



Providers use a URL generator to create a static link that is sent to Veterans for quick access to their VVC appointment.



EDUCATION

PM&R

For Veterans admitted as in-patient, an iPad allows the patient to virtually connect with family or caregivers.



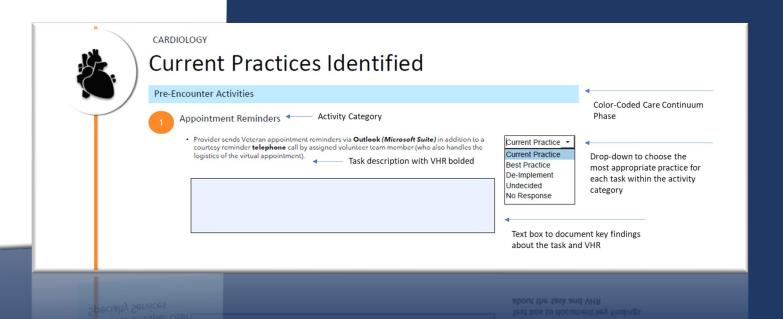
Staffed specialized personnel who can assist Veterans and staff with technical issues. The department has 2 staff members who assist with IT support within the department (.5 FTE)



Specialty Services Best Practices Identification Workbook

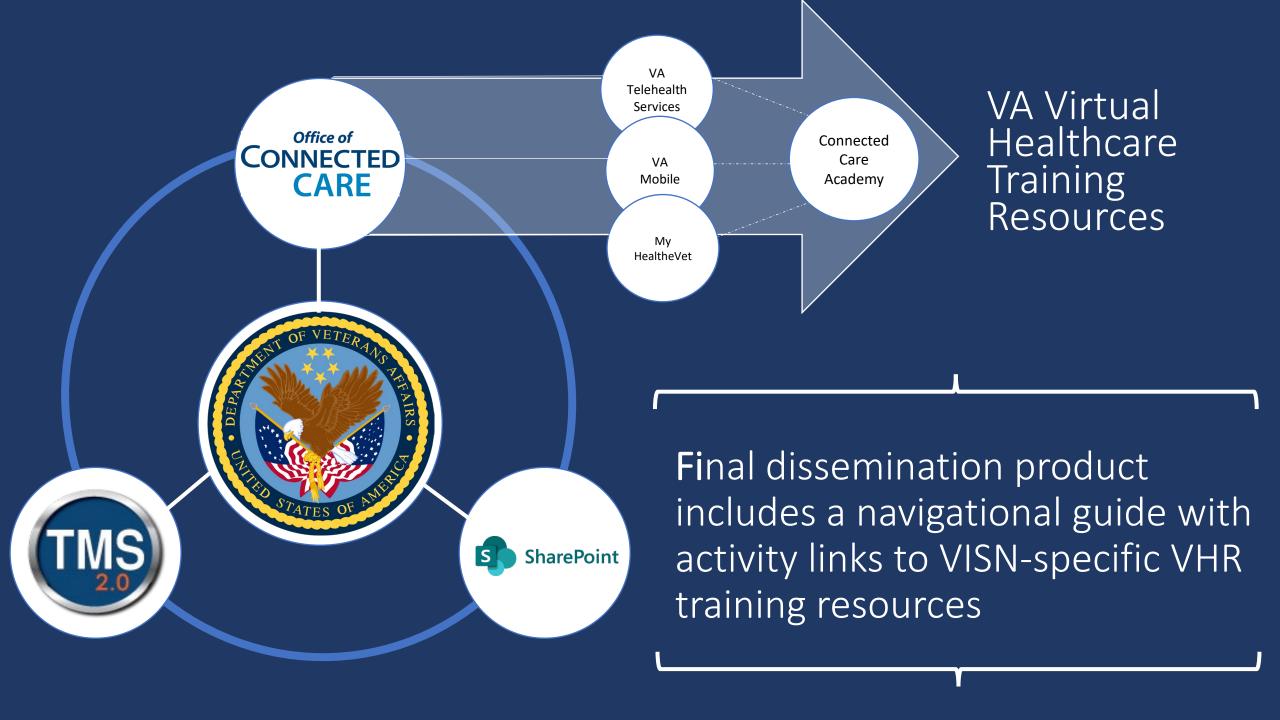
Best Practices Workbook Activity

Team Connect created a Best Practices Identification Workbook to evaluate current practices in the field through a crosswalk of instructional materials and resources on the Connected Care Academy website and other VA resources.



Workbook Activity Approach

- Connected Care
 Academy enrollment
- 2. Academy's search engine utilization
- 3. Resource evaluation



Workbook Activity Quality Check Outcomes

Service	Phase	Description	Platform	Link	Practice
SCI	Pre- Appointment	Providers receives and reviews a hard copy of the Veteran's file packet shared by the doctor. CPRS is also reviewed.	Share Point	CPRS Page on SharePoint	Best Practice
SCI	Pre- Appointment	Telehealth Coordinator sets up a VVC test call to assist the Veteran with set-up and documents the visit in CPRS. Once identified as video capable, provider sets up a link in VCM.	Connected Care Academy	VCM Community on Blackboard	Best Practice
SCI	Pre- Appointment	Provider uses telephone during the exam.	Connected Care Academy	VVC page on Telehealth	Undecided

Strengths

Tasks were validated by content to validate type of practice

Providers reported unique practices that met Veteran and provider needs

There are very few practices that resulted in a deimplement recommendation

Opportunities

Limited content– development warranted

 Outdated or inconclusive material can be revised

Activities potentially not under OCC purview

Data Validation

1

Workbook activity integrated into a data validation MS Excel code workbook.

2

Qualitative review of data and resources performed to analyze type of practice (i.e., Best, Current or De-Implement) criterions.

3

Validation conducted with operational partner SME. Consensus was reached after multiple rounds of validation.

Total practices validated (N=229)

- Practices with single VHR (n=124)
- Practices with multi-VHR (n=104)
- Practices with missing VHR (n=1)
- Best (n=128)
- Current (n=80)
- De-Implement (n=12)
- Undecided/Unclear (n=9)

Supporting Evidence for Determining Best Practices

Resource: VA Video Connect Web Guide for Providers

Best Practice Provider uses the Stethoscope peripheral device that interacts with the Veteran during a VA Video Connect (VVC) appointment to listen to the patient's lungs and heart in a virtual setting for tracking patient generated health data (PGHD).

Current Practice

On-floor staff is reached via telephone or Vocera.

Supporting Evidence for Determining Best Practices



De-Implement Practice

Zoom can be used for Veteran encounters with providers.

Zoom and other public facing third party video technology platforms (i.e., WebEx, MS Teams, FaceTime) were only approved for clinical encounters during the 2020 COVID-19 pandemic. By August 9, 2023, all VA facilities should use VA Video Connect (VVC) as the primary video platform for remotely delivered clinical care. Webex remains the only VA-approved alternate technology and is configured for clinical use in limited circumstances.

Resource: Approved Video Technologies | Following the Pandemic | VHA Telehealth Services Intranet (va.gov)

Data Analysis Visualization





Initial (n=15) & follow-up interviews (n=12)

across 5 specialty care continuums

Coded data



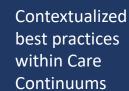
Workbook Validation (N=229 practices)



128 best practices categorized into an index of 11 categories & 43 subcategories

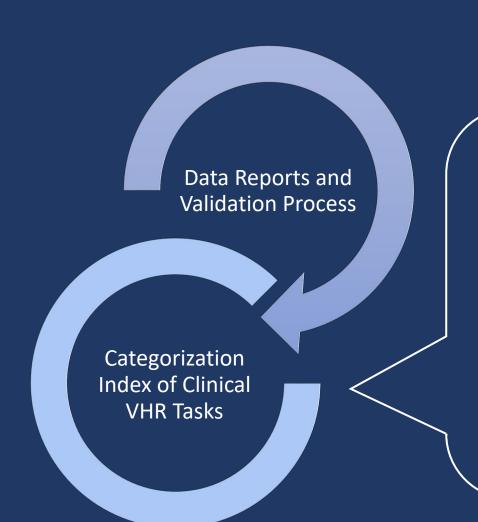


Mapped best practice VHR use (n=60) across specialties within categorization index





Data Evolution & Final Products



Based on data collection and complex in depth analyses we created an inventory of VHRS, index of tasks, and summaries of current & best practices, which are uniquely mapped across the care continuum of five specialty care services.

List of VHRs - 103 Total

- 3D Camera
- Alivecor (app)
- Accessibility Management Platform (AMP)*
- Annie App for Clinicians
- Annie App for Veterans
- Barcode Medication Administration (BCMA)*
- Blood Pressure Monitor (peripheral device)
- Blue Button (MHV)*
- Care Assessment Need (CAN) Risk Assessment (CPRS)

- CARF Survey (for accreditation)*
- CBT-I Coach (app)
- Cisco Jabber
- Clinical Video Telehealth (CVT)*
- Consults (CPRS)
- Computerized Patient Record System (CPRS)
- CPT Coach (app)
- Digital Scale (peripheral device)
- Direct Texting

- *Not included in final analysis presentation (n=43)
- Red = De-implement

Telehealth: 1) Store and Forward, Asynchronous, Synchronous

- Document Storage Systems (DSS) DocManager*
- Doximity
- EarlySense Monitoring System*
- Echo Device (peripheral device)*
- Electronic Health Record Modernization (EHRM) Cerner Millennium*
- Engineered Care*
- Excel (Microsoft Suite)
- FitBit/Apple Watch

List of VHRs (Continued)

*Not included in final analysis presentation (n=43)

Red = De-implement

Telehealth: 1) Store and Forward, Asynchronous, Synchronous

- Flags (CPRS)
- Get Well Network (VistA)
- Glucometer
- Google Voice*
- Health Summary (CPRS)*
- Healtheliving Assessment (MHV)*
- Image Viewing Solution (VistA app)*
- iMedConsent*

- In-Patient Blood Pressure Machine (CPRS)
- In-Patient Vital Machine (CPRS)
- Insomnia Coach (app)
- iPad
- Joint Longitudinal Viewer (JLV)*
- KRAMES/KRAMES On Demand
- Labs & Tests (CPRS)

- Light Electronic Action Framework (LEAF)*
- Live Whole Health App
- Medline Plus*
- Mental Health Assistant (CPRS)*
- Mobile Devices*
- My HealtheVet (MHV)
- My VA Images (app)*

List of VHRs (Continued)

*Not included in final analysis presentation (n=43)

Red = De-implement

Telehealth: 1) Store and Forward, Asynchronous, Synchronous

- Notes & Alerts (CPRS)
- Online Journal Websites*
- Outlook (Microsoft Suite)
- Patient Care Assessment System (PCAS) (CPRS)*
- Portable Document Format (PDF)*
- Personal Health Inventory Questionnaire
- PowerPoint (Microsoft Suite)
- PTSD Coach (app)
- Pulse Oximeter (peripheral device)

- Qualtrics
- RedCap
- Remote Order Entry System (ROES) (CPRS)
- Return to Clinic Order (CPRS)*
- RX Refill App (MHV)
- Secure Messaging (MHV)
- Share My Health Data (app)
 Formerly Sync My Health Data app
- SharePoint (Microsoft Suite)
- Stethoscope (peripheral device)

- Survey Monkey
- Teams (Microsoft Suite)
- Telehealth*
- Telephone
- Talent Management System (TMS)*
- Track Health Journals (MHV)*
- Track Health Vitals (MHV)*
- Uniform Resource Locator (URL) Generator

List of VHRs (Continued)

*Not included in final analysis presentation (n=43)

Red = De-implement

Telehealth: 1) Store and Forward, Asynchronous, Synchronous

- USA Mobility*
- VA & Non-VA apps
- VA & Non-VA Online Resources*
- VA & Non-VA YouTube Videos
- VA Appointments Tool (MHV)*
- VA Approved Acute Enterprise Standard (VAAES) (VistA)*
- VA Health Chat (app)*
- VA Intranet*
- VA National Surveillance Tool (NST)*

- VA Prescriptions Refill (MHV) VISN 8 Nucleus (CPRS)
- VA Video Connect (VVC/VVC Vocera* Now)
- VA Virtual Toolkit Prescription Pad
- Veterans Health Information System Technology Architecture (VistA) Imaging*
- Veterans' Health Library*
- VEText*
- VetLink Kiosk
- Virtual Care Manager (VCM)
- Virtual Tool Rx (app)

-) VISIN & INUCIEUS (CPRS)
- Web VistA Remote Access Management (WebVRAM)*
- WebEx
- Weight Management Scale (Peripheral device)
- Wellness Reminders (MHV)*
- Word (Microsoft Suite)
- Your IT*
- Zio Patch
- Zoom

VHR Best Practices Product Overview

Categorization Index

Primary and secondary categories of VHR best practice activities



Summaries of Best Practices

Detailed workflow cases representing the proactive integrated use of VHR

Identified resources to validate as best practice and education/training to use VHR for task



VHR Categorization Index

- 1. Appointment Management
- 2. Patient & Staff Technology & Resource Access
- 3. Communication & Referrals
- 4. Patient Care Delivery
- 5. Labs/Tests Management
- **6. Referral Management**
- 7. Data Collection Management
- 8. PGHD Management
- 9. Medication Management
- 10. Resources & Education
- 11. Documentation

VHR Best Practices Categorization Index & Summary Log

1. Appointment Management

- **1.1 Scheduling Medical Appointment**
 - **1**2
- **1.2 Sending Appointment Reminder to Veteran**
 - **2**0, 23, 24, 25
- 1.3 Sharing Virtual Appointment Link/Access Code*
 - **5**
- **1.4 Preparing for Virtual Appointment**
 - **2**2, 26, 28
- 1.5 Pre-Appointment Huddles*
 - **2**2
- **1.6 Follow-up Appointment**
 - **2**, 26

2. Patient & Staff Technology & Resource Access

- 2.1 Dedicated Resources For Device Consult/Troubleshooting/Responding To Alert
 - **4**, 26
- 2.2 Prepare for Visit/Assess Technology
 - **1**6, 26, 27
- 2.3 Provide Troubleshooting
 - **1**, 26, 29
- 2.4 Provide Training/Support
 - **1**6, 28
- 2.5 Obtaining Digital Equipment
 - **1** 21, 26, 36

VHR Best Practices Categorization Index & Summary Log Continued

3. Communication & Referrals

- 3.1 Provider, Veteran, Non-Veteran Communication
 - **2**, 14, 15, 18, 30, 34
- 3.2 Internal/External Interdisciplinary Coordination & Communication
 - **3**, 4, 10, 22, 25, 29, 33
- 3.3 Veteran-Initiated Communication
 - **1**8
- 3.4 Provider-Initiated Communication
 - **1**4
- 3.5 Adaptive Communication with Veteran
 - **1**, 6, 8, 15
- 3.6 Preparation for Communication with Veterans & Caregivers
 - **1**7
- 3.7 Facilitating Virtual Communication & Access for In-patient
 - **3**1, 49

4. Patient Care Delivery

- **3**2, 33
- 4.2 Take History
 - **7**, 36, 12
- **4.3 Conducting Virtual Assessment**
 - **5**, 6, 7, 12, 34, 36, 38, 39, 42
- **4.4 Providing Treatment/Recommendations**
 - **7**, 34, 19
- **4.5 Conducting Group Appointment***
- 4.6 Follow Up
 - **1**4

5. Labs/Tests Management

- 5.1 Request Labs/Tests/Imaging*
- 5.2 Deliver Labs/Tests/Imaging Results*

VHR Best Practices Categorization Index & Summary Log Continued

6. Referral Management

- **6.1 Consult for Device Issuance**
- **3**6
- **6.2 Provider Referrals for Care***
- **6.3 Referrals for Technology***

7. Data Collection Management

- 7.1 Program Feedback/Evaluation*
 - **3**7
- 7.2 Documenting Data Summaries
 - **3**7
- 7.3 Outcome Measures
 - **□** 8, 18, 40, 41, 42, 51, 52

8. PGHD Management

- 8.1 Consult for PGHD Device Issuance*
 - **3**6
- 8.2 Track PGHD, Record Vitals & Monitor Health Indices
 - **9**, 11, 19, 30, 37, 39, 42, 43, 50, 51, 52
- 8.3 Measure PGHD, Vitals & Health Indices
 - **1**1, 42, 50, 51
- 8.4 Veteran-Based VHR
 - **1**1, 19, 30, 38, 42, 43, 44, 50

9. Medication Management

- 9.1 Requesting RX/Treatment By Veteran
 - **4**4
- 9.2 Refill & Track Medication
 - **4**4

10. Resources & Education

- 10.1 Obtaining & Organizing Educational Material
 - **45**, 46
- **10.2** Delivering Educational Material to Patients
 - **1** 7, 8, 14, 20, 28, 47, 49
- **10.3 Continuing Education and Access Resources for Providers**
 - **48**

11. Documentation

- 11.1 Chart Review & Check Records/Labs/Imaging
- **1**0
- 11.2 Provider Notes
 - **1**0

Summary #12: VCM can be used to schedule a medical pointme with any Veteran, even if at a different clinic through the anywhere-to-anymin ective. an use WebEx1 or re **VVC** to conduct a remote appointment with a ' eran esseight, medical history, ad and presenting complaints. While using Iso access CPRS to review Veteran history, which can be kept open during th with the Veteran. oun

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Services:







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	Telehealth Community (blackboard.com)	
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(blackboard.com)	(blackboard.com)	CPRS Session 1 Getting Started
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VHRs: VCM, WebEx, VVC, CPRS

Services:







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VHRs: VCM, WebEx

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Practice Summary, including task

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VHRs: VCM, WebEx, VVC, CPRS

Services:







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List of VHRs relevant to task summary

WebEx: How to use Webex Meetings - Tutorial - YouTube CPRS: CPRS Technical Manual (va.gov) **CPRS Session 1 Getting Started** https://dvagov.sharepoint.com/sites/vhaiow/SiteDirectory/CPRS/default .aspx

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VHRs: VCM, WebEx, VVC, CPRS

Services:







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Summary #12: VCM can be used to schedule a medical appointment with any Veteran, even

if at a different clinic thre

VVC to conduct a remote and presenting complair history, which can be ker

Resource links that indicate summary as example of Best **Practice**

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VHRs: VCM, WebEx.

Services:







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VHR education resource links

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5. Labs and Tests Management: 5.2: Deliver Labs/Tests/Imaging*

Current Best Practice: Literature by Haun et al, published best practices in SM (MHV) for delivering labs, tests, and imaging results.

VHRs: SM (MHV)

SM (MHV): Best Care Everywhere | U.S. Government Bookstore (gpo.gov)

Haun JN, Hathaway W, Chavez M, et al. Clinical Practice Informs Secure Messaging Benefits and Best Practices. *Appl Clin Inform*. 2017;8(4):1003-1011. doi:10.4338/ACI-2017-05-RA-0088

Haun, J. N., Chavez, M., Nazi, K., Antinori, N., Melillo, C., Cotner, B. A., ... & Noonan, A. (2017). Veterans' Preferences for Exchanging Information Using Veterans Affairs Health Information Technologies: Focus Group Results and Modeling Simulations. Journal of Medical Internet Research, 19(10), e359.

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Haun J, Chavez M, Hathaway W, Antinori N, Melillo C, Cotner BA, McMahon-Grenz J, Zilka B, Patel-Teague S, Messina W, Nazi K. Virtual Medical Modality Implementation Strategies for Patient-Aligned Care Teams to Promote Veteran-Centered Care: Protocol for a Mixed-Methods Study JMIR Res Protoc 2018;7(8):e11262 doi: 10.2196/11262PMID: 30111531PMCID: 6115597

Consideration for De-Implementation

Provider sends surveys to Veterans using Survey Monkey via Outlook.

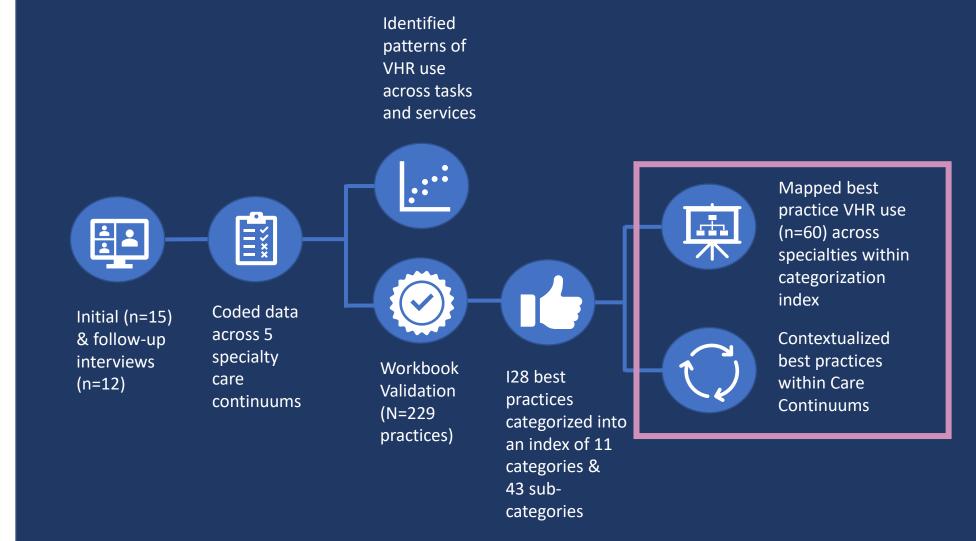
Provider uses WebEx and Survey Monkey for feedback. M5 Outlook (blind copy) and WebEx chat box are used to send presentations.

Provider uses WebEx and Survey Monkey for polling.

Survey links sent via MS Outlook (blind copy).

Zoom is used for provider-Veteran communication.

Data Analysis & Visualization



Use this grid to map VHR use throughout a clinical workflow. Best practice use identified across 5 service lines (See legend to the right).

RED = De-implement

* Current Practice

Super User Integrated VHR Use Best Practice Matrix (N=60)

Mapping Best Practice VHR use by service across 11 clinical care activities and 43 sub-tasks.









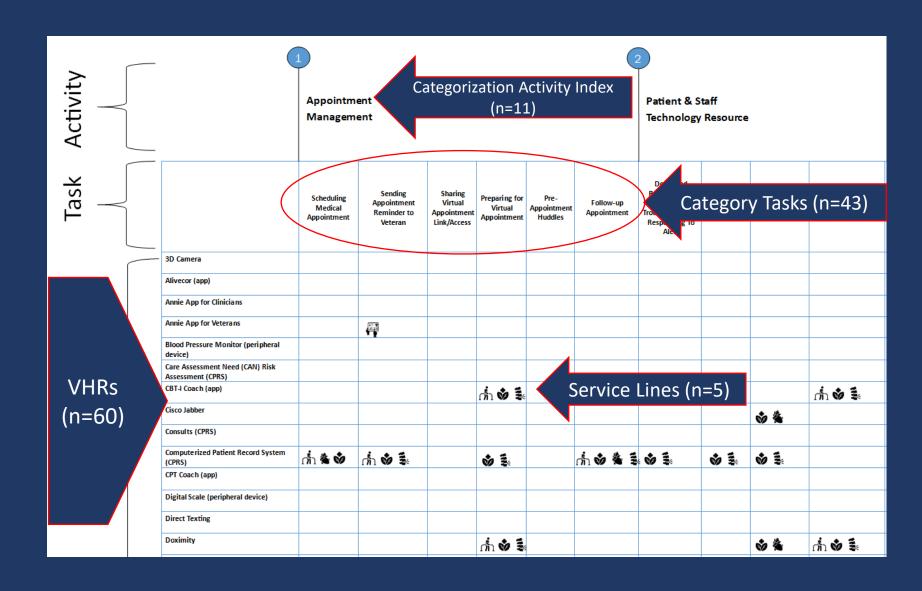


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Super User
Integrated VHR
Use Best Practice
Matrix (N=60)

Mapping Best Practice
VHR use by service across
11 clinical care activities
and 43 sub-tasks.





Click to access resource.

VIRTUAL HEALTHCARE RESOURCE USE THROUGHOUT THE CARE CONTINUUM ACROSS SERVICES

Pre-encounter





Post-encounter



Medical Encounter – Combined Services

Pre-Appointment 1.1 Schedule Medical Appointment 1.2 Sending Appointment Reminder to Veteran 1.4 Preparing For Virtual Appointment 1.5: Pre-Appointment Huddles 2.1 Dedicated Resources For Device

- 2.1 Dedicated Resources For Device Consult/Troubleshooting/Responding To Alert
- 2.2: Prepare for Visit/Assess Technology
- 2.3: Provide Troubleshooting
- 3.2 Internal & External Interdisciplinary Coordination & Communication
- 7.2 Documenting Data Summaries
- 7.3: Outcome Measures
- 11.1 Chart Review and Check Records/Labs/Imaging

Check-in 1.2 Sending Appointment Reminder to

- 2.2: Prepare for Visit/Assess Technology
- 2.3: Provide Troubleshooting
- 3.2 Internal & External Interdisciplinary Coordination & Communication
- 4.Patient Care Delivery: 4.1 Check-In/Triage
- 11.1 Chart Review and Check Records/Labs/Imaging

History/ Examination

- 2.4: Provide Training & Support
- 3.5 Adaptive Communication with Veteran
- 4.2 Take History
- 4.3 Conduct Assessment
- 7.1 Program Feedback/Evaluation
- 7.2 Documenting Data Summaries
- 7.3 Outcome Measures
- 8.2: Track PGHD, Record Vitals & Monitor Health Indices
- 8.3: Measure PGHD. Vitals & Health Indices
- 8.4:Veteran-Based VHR

Diagnosis

- 3.1: Provider, Veteran, Non-veteran Communication
- 4.3 Conduct Assessment
- 4.4 Provide Treatment & Recommendations
- 5.1: Request Labs/Tests/Imaging*
- 5.2: Deliver Labs/Tests/Imaging*
- 7.2 Documenting Data Summaries
- 7.3: Outcome Measures
- 8.2: Track PGHD, Record Vitals & Monitor Health Indices
- 8.3: Measure PGHD, Vitals & Health Indices
- 8.4:Veteran-Based VHR
- 10.1 Obtaining Educational Material to Patients
- 10.2 Delivering Educational Material to Patients
- 11.1 Chart Review and Check Records/Labs/Imaging

Treatment Plan & Care

- 2.4: Provide Training & Support
- 3.1: Provider, Veteran, Non-veteran Communication
- 3.2 Internal & External Interdisciplinary Coordination & Communication
- 3.4: Provider-Initiated Communication
- 3.7: Facilitating Virtual Communication & Access For In-patient
- 4.4 Provide Treatment & Recommendations
- 8.4:Veteran-Based VHR
- 9.1 Requesting RX/Treatment by Veteran
- 9.2 Refill and Track Medication
- 10.1 Obtaining Educational Material to
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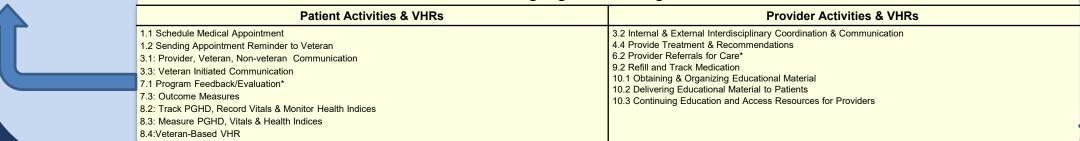
Check-out

- 1.6 Follow Up Appointment
- 2.5: Obtaining Digital Equipment
- 6.1 Device Issuance
- 6.3 Referrals for Technology*
- 7.1 Program Feedback/Evaluation
- 7.3: Outcome Measures
- 8.1: Consult for PGHD Device Issuance*
- 9.2 Refill and Track Medication
- 11.1 Chart Review and Check Records/Labs/Imaging
- 11.2 Provider Notes

Post-Appointment

- 3.1: Provider, Veteran, Non-veteran Communication
- 3.2 Internal & External Interdisciplinary Coordination & Communication
- 3.3: Veteran Initiated Communication
- 3.4: Provider-Initiated Communication
- 4.6: Follow Up
- 7.1 Program Feedback/Evaluation
- 7.2 Documenting Data Summaries
- 7.3: Outcome Measures
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Ongoing Health Management



Summary of Data Findings



Our team identified 52 best practice use cases across 60 VHRs that can be explored within 11 categories of tasks reviewing 43 commonly conducted tasks.



Specific findings unique to specialty services that overall, all practices can be applied to most services across the care continuum.



Data can be used for training and education, establishing best practices and practices for de-implementation, and organizing education and resources to connect tasks to training and educational resources.



Future research should not only determine best practices but evaluate outcomes associated with using best practices.

Where Do We Go From Here?



Conclusion

These data provide practical summaries for identifying and illustrating integration of VHRs across service-specific clinical workflows.

This project informs "best practices" in the proactive integrative VHR use across the continuum of care.

"Super Users" best practices using VHRs can inform revised clinical workflows to maximize efficiency and benefit.



Next Steps

Disseminate VHR Inventory, Categorization Index, Summaries, and Care Continuums to support proactive integrated VHR use.

Operationalize VHR practices and test implementation strategies to promote uptake and spread.

Build knowledge and capacity for the proactive integrative use of VHRs to complete tasks across the continuum of care and adapt and enhance service-specific workflows.



Thank you

Jolie N. Haun PhD EdS, Rachel Benzinger, BA, Julie McMahon-Grenz, MS, OTR/L, Lisa M. Ballistrea, MSPT, DPT, Angelina Klanchar, MS, RN, Tali Schneider PhD

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