Development of a Patient Reported Measures Display and Implementation across VA Salt Lake City HCS

Series: Using Data and Information Systems in Partnered Research
Presenters: Shardool Patel, PharmD & Jorie Butler, PhD
Thursday, June 20th, 2019
Conflict(s) of Interest

None
Why Patient Reported Measures/Outcomes?

• Enthusiasm for benefits and value in healthcare delivery\(^1\)

• Availability of implementation guidance

Objectives

• Discuss plan for developing informatics tools for PRO collection/use

• Demonstrate PRO display for determining opioid response to therapy

• Discuss evaluation and measurement strategies and preliminary results for emerging reports to support the Whole Health Flagship

• Present evaluation strategies to support display development for additional Whole Health programming
Patient Reported Outcomes (PROs) at VA Salt Lake City HCS

• Planning underway for incorporation into many clinical domains

• First clinical domain: opioid and pain management

• Franklin et al.² PRO collection and use framework

Franklin et al. PRO collection and use framework

Six (6) key steps for implementation

1. Why PROs? Identifying value for diverse stakeholders
2. Who? Priority populations for PRO collection
3. When and Where? Timing PRO collection
4. What? PRO selection
5. How? Factors in PRO collection
6. PROs to inform practice
Step 1: Why PROs? Identifying value for diverse stakeholders

- Identify key stakeholders
- Identify common goals and value across stakeholders
Step 1: Why PROs? Identifying value for diverse stakeholders

Seven (7) key stakeholders

1. Veterans
2. Point-of-care (POC) clinical staff
3. Clinician/program leads
4. VASLC Pentad & VISN19 leadership
5. VASLC HSR&D field office
6. Primary Care clinicians
7. Informaticians
Step 1: Why PROs? Identifying value for diverse stakeholders

Common goals and value across stakeholders

<table>
<thead>
<tr>
<th>Goal</th>
<th>Abbreviation</th>
<th>Stakeholders</th>
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<tbody>
<tr>
<td>POC decision making</td>
<td>POC</td>
<td>Veterans + POC clinical staff + informaticians</td>
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<td><em>(Primary purpose)</em></td>
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<td>Quality Improvement –</td>
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Step 2: Who? Priority populations for PRO collection

Relationship to goals

• POC: Veterans engaging in partnering pain management programs

• QI: Veterans with evidence of opioid use
Step 3: When and where? Timing PRO collection

• Primary purpose: POC decision making

• RN-case managers (RN-CM) to capture in pre-visit workup

• Sufficient time to generate in CDW for POC decision making
Step 3: When and where? Timing PRO collection

Transitional Pain Service (TPS)
• Preoperative
• Seven (7) structured postoperative time points

Primary Care Pain Opioid and Pain Program (PCPOP)
• Structured 6-month intervals
Step 3: When and where? Timing PRO collection

Relationship to goals

• POC: RN-CM collect PROs at uniform intervals as part of pre-visit
• QI: PROs available at uniform intervals
Step 4: What? PRO selection

Pain and opioid management

PROMIS 3A – Pain Intensity
PROMIS 6B – Pain Interference
PROMIB 8B – Physical Function
Step 4: What? PRO selection

Relationship to goals

• Same measurements used for POC and QI

• Captured at POC

• QI uses measures collected at POC
Step 5: How? Factors in PRO collection

- RN-CM to collect in pre-visit workup
- PRO entry in CPRS via structured note templates
- PROs generate in CDW as health factors
Step 5: How? Factors in PRO collection

Notified via “cohort” display

<table>
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<tr>
<th>Patient Name (Last 4 SSN)</th>
<th>Surgery Date</th>
<th>Discharge Date</th>
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Step 5: How? Factors in PRO collection

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Step 5: How? Factors in PRO collection

Relationship to goals

• POC: PROs available for decision making

• QI: PROs available in CDW, avoid measure burden
Step 6: PROs to inform practice

Suite of information displays and reports
Step 6: PROs to inform practice – Goal: POC
Step 6: PROs to inform practice – Goal: POC
Step 6: PROs to inform practice – Goal: POC

- Chronologic display to determine response to opioid therapy
- Guidance for interpreting results
- Supports subsequent management
Step 6: PROs to inform practice – Goal: QI
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Step 6: PROs to inform practice – Goal: QI
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Select a specific cohort (based on note title)
Step 6: PROs to inform practice – Goal: QI
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• Chronologic display of PROs and interventional visits

• Exporting data

• Cohort-analysis
Summary

• Franklin et al. framework to guide development strategy

• Infrastructure to support POC and spectrum of QI goals

• Trend graphs for POC deployed (usability studies underway)

• Reports to support QI initiatives to be deployed soon
Acknowledgements

Brian Sauer, PhD

Benjamin Brooke, MD, PhD

Michael “Jay” Buys, MD

Zachary Anderson, PharmD

Anitha Rathod, MS

Amy Beckstead, MSN

Julie Beckstrom, MSN

William Marchand, MD
Part II. Evaluation Strategies for Display Development and Usability Assessment

Jorie M. Butler, PhD
Tania Velasquez, MPH
Lacey Lewis, MS
Elena Nazarenko, MSTAT
Health Information Technology (HIT) is a natural bridge

• HIT\(^1\) includes:
  • Exchange of Health Information
  • Improvements in Quality of Care

• HIT:
  • Extends Real Time Communication
  • Promotes Access to Care

• Studying HIT development includes evaluating specific solutions and is a natural bridge to study clinical and institutional change

Whole Health in VA Salt Lake City

• Office of Patient Centered Care and Cultural Transformation (OPCC&CT) - Whole Health

• VA SLC named Flagship in FY 18

SLC Whole Health Flagship Includes

All VA Whole Health Flagship Programs include
• Whole Heath Coaching
• Whole Health Classes

SLC Whole Health Flagship Programs include
• Mindfulness Center
• Integrative Health
• Transitional Pain Program
• Primary Care Pain Program (PC-Pop)
Goals of SLC Local Health Evaluation Team
Display Design and Usability

1. Establish Local Evaluation Team

2. Study HIT Development and Implementation

3. Understand Stakeholder and User Perspectives on HIT Solutions for Whole Health in SLC
Goal 1: Establish Local Evaluation Team

- Examine local processes
  - Pre-implementation
- Evaluate early implementation
- Evaluate process, clinician experience, and patient reported outcomes
Goal 2: Study HIT Development and Implementation

• Leverage IDEAS COIN Informatics expertise
• Leverage VISN and IDEAS COIN investment
• Study HIT development and implementation to support Whole Health at our site.
Goal 3: Understand Stakeholder and User Perspectives

• From multiple angles (clinical utility, institutional needs/impact)
• Consistent with Patient Reported Outcome Measures (PROM) capture
• Assess processes of clinical change
• Assess information exchange in development
Whole Health Display Development – Evaluation Methods

Overall Tool Box of Development and Usability Strategies

**Stakeholder Views**
- Focus Groups
- Interviews
- Survey/
  Questionnaire

**User Centered Design**
- Cognitive Task Analysis
- Think Alouds
- Design Sessions
- Vignettes/Simulations

**Usability Testing**
- Monitored
- Unmonitored
- Tracking Tools
- Structured Questionnaire
Whole Health Display Development – Qualitative Methods

• Design session\(^3\)-members inform their needs in regards to
  • User Characteristics
  • Desired Functions
  • Tasks
  • Workflow
    • Clearly task focused, may not produce divergent thinking
• Interviews\(^4\) – Semi-structured interviews with needs based questions
  • One on one
  • Frank conversation
• Focus group\(^3\) –Group Interview
  • Group dynamics can be informative
• Vignette –Brief, realistic scenario accompanied by question prompts
  • Immerse the participant in the basic story


Whole Health Display Development – Qualitative Methods continued

• Simulation studies\(^6\) – Simulations of routine care
  • Controlled environment
  • Stimulates thoughts of different areas
• Think aloud\(^7\) - Participants are audiotaped thinking aloud as they problem-solve.
  • Cognitively based
  • Task based
  • Specific HIT is “on the court” for testing


Building the team

• Initial study of dashboard development
  • Expert Focus Groups (6)
  • Ethnographic Observation of Design Sessions (6)
  • Follow-up interviews with expert users
    • Nurses
    • Physicians
    • Psychologists
    • Advanced practice clinicians
    • Nursing students
  • Recorded and Quantitatively Analyzed using ATLAS.ti
Initial results—4 Themes

• Assessment of Data Sources
• Quality improvement
• Usefulness
• Team Building

Theme—Assessment of Data Sources

“Those who have been discharged from surgery or those who are still awaiting surgery and those who are currently on opioids or who are off opioids. There is the ability to select all of these and then filter the list by whoever kind of needs to be looked at first.”—VA Clinician
Theme—Quality Improvement

“I wanted to know any substance abuse history, and I want to know how much mindfulness that he’s already had without going into his chart and searching for me or anyone else that might be doing our protocol with us.”—VA Clinician
Theme—Usefulness

“Oh, I want to know oh, this guy has been a recent surgical patient. I want to know if they’ve had any mindfulness. It would be as easy as going into that versus looking past maybe a couple of hundred CPRS notes.” —VA Clinician
Theme - Team Building

“[...] I know that you kind of changed it and that you were modifying the program for primary care, and there are different ways that you are going to bring people in. So if you could kind of maybe walk us through, and that will help us as we try to help you.” - Development Team
Continuation – Development of Whole Health Facing Displays

• Design Sessions and Think Alouds
  • Sessions for Dashboard Functions for:
    • Mindfulness Center
    • Whole Health Coaching/Classes

• Transcription Qualitative Analysis Strategy
  • Based loosely in Grounded Theory
  • Multiple perspectives on analytic team
  • Follow to Consensus
Continuation Preliminary Results

• Defining Expectations
• User needs for views and functions
  • Cohort View
  • Consult View
• Establishing Common Ground
  • Common Language
• Expansion of Functions
  • Recognizing Additional Needs
• Establishing Common Ground (context for Whole Health)
Future Usability and Implementation Work

• Super User Interviews

• Cognitive Task Analysis

• Evaluation of specific Functions
  • Multiple Perspectives: Program Heads, Program Managers, Clinical Users
  • Baylor Electronic Health Record User Experience Survey Tool
    • Usefulness, Usability, End-User Support, Overall Satisfaction
  • System Usability Scale
    • Broad comparison with many tools
Display Implementation

- UTAUT Framework
  - Performance Expectancy
  - Effort Expectancy
  - Social Influence
  - Facilitation Conditions
  - Behavioral Intentions
  - Use Behavior
Natural Window

• Assessment of the social contextual conditions for HIT development and implementation
• Allows us a view the cultural transformation of Whole Health in SLC
Acknowledgments

• IDEAS SLC COIN
• William Marchand, Whole Health Director
• Julie Beckstrom, MS
• VISN 19
• VA SLC Leadership
• VA SLC Whole Health Flagship Team