Feasibility Study of HIT-Enabled PROMs in Home Health

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Conflict of Interest

Cynthia Sun and Gary Rezek:

• No real or apparent conflicts of interest to report
Agenda

• Background
• Barrier / Solution
• Study Description
• Results
• Conclusion
• Considerations for Next Steps
Learning Objectives

• Describe the feasibility of integrating HIT-enabled Patient Reported Outcome Measures (PROMs) in the home health setting

• Explain three unique barriers and possible solutions identified when integrating HIT-enabled PROMs in the home health setting

• Discuss impact on home health patients and clinician workflow with the integration of HIT-enabled PROMs
Quality Insights

• Offering health care quality solutions for systems, providers and patients across the nation since 1973

• Not-for-profit organization that measures and improves health and health care quality through contracts with federal and state agencies, foundations and private payers

• More than 200 physicians, nurses, health services researchers, statisticians, data analysts and educators bringing people and information together to improve health

• Headquartered in Charleston, West Virginia with offices in Delaware, Pennsylvania, New Jersey and Virginia
Background

• **Initial plan:** Create evidence-based patient and clinician resources to improve the home health patient’s level of self-efficacy

• **Barrier:** No studies to date have examined using HIT-enabled Patient Reported Outcomes (PROMs) in skilled home health care

• **Solution:** Study feasibility assessing practicality, integration and acceptability (Bowen et al., (2009)) of integration of HIT-enabled PROMs into the home health setting
Polling Question

Have you used PROMs?

1. Yes via HIT
2. Yes via paper & pencil
3. No, we’re planning to soon
4. Never heard of them
PROMIS®
Patient-Reported Outcomes Measurement Information System

• Validated person-centered measures
• Multiple delivery formats
• Customizable bank of over 300 patient-focused health outcome measures
• 3 major domains (physical health, mental health and social health) & Global health
• www.nihpromis.org
Method

- Pilot Sites: Two home health agencies
  - Location: Pacific Northwest
  - Patient populations: Urban & Rural
- Duration: Four months
- IRB Approved
Instrument

• 10 Apple iPads
• PROMIS® app
  – Self-efficacy for managing symptoms (four items)
  – Self-efficacy for daily activities (four items)
  – Self-efficacy for managing medications and treatments (four items)
  – Global health measures (10 items)
• Airwatch’s Mobile Device Management (MDM)
Clinician Training

- Administer during scheduled home visits
- Answer only by patient
- Inclusion criteria:
  - Alert
  - Willing
  - Able to read English
- Repeat assessment in 2-4 weeks
Feasibility Assessment

• Combination of surveys, interviews, and observations
  – Patients
  – Clinicians
  – Administrators
  – Information Technology (IT) staff
• Impact of tablet use on workflow
• Barriers and facilitators of PROM-data-collection using tablets
Polling Question

# of elderly community-dwellers needing assistance by 2030

1. 1 million
2. 4 million
3. 12 million
4. 25 million

(Source: Bureau of Labor Statistics)
Results

- 91 registered subjects with ages ranging from 31 to 100 (mean 71.9, median 74)
- Eighty-four patients completed the initial assessment of tablet-based PROM tool
- Eight patients (9.5%) completed the follow up assessment
Results

• 64% of patients were female, 33% male
• 87% of patients were white and 92% non-Hispanic
• 38% reported their level of education. Of those patients 72% had at least a high school education
• Mean assessment completion time was 8.3 minutes (median time 6.1 minutes)
## Results

### Relationship between assessment duration (in minutes) and patient characteristics (N=84)

<table>
<thead>
<tr>
<th></th>
<th>F</th>
<th>p</th>
<th>df</th>
<th>N*</th>
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<td>0.65</td>
<td>0.6917</td>
<td>6,70</td>
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<tr>
<td>Ethnicity</td>
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<td>Gender</td>
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<td>Education</td>
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<td>0.2976</td>
<td>7,20</td>
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<tr>
<td>Age</td>
<td>0.30313</td>
<td>0.0107</td>
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<td>70</td>
</tr>
</tbody>
</table>

Pearson's r

- **Race**
- **Ethnicity**
- **Gender**
- **Education**
- **Age**

*Note: N* indicates the sample size.*
# Results

## Distribution of primary diagnosis for patients who participated in the study

<table>
<thead>
<tr>
<th>Primary Dx group</th>
<th>Count</th>
<th>Examples of Diseases Included</th>
<th>Percent Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orthopedic</td>
<td>42</td>
<td>Fracture(s); Muscle weakness; Aftercare following joint replacement surgery</td>
<td>52%</td>
</tr>
<tr>
<td>Cardiovascular</td>
<td>13</td>
<td>Heart failure; Atrial fibrillation; Myocardial Infarction; Hypertensive heart disease</td>
<td>16%</td>
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<tr>
<td>Integumentary</td>
<td>8</td>
<td>Surgical wound dressings; Open wound; Pressure ulcer</td>
<td>10%</td>
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<tr>
<td>Urologic</td>
<td>5</td>
<td>Malignant neoplasm of bladder; Urinary tract infection</td>
<td>6%</td>
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<tr>
<td>Respiratory</td>
<td>6</td>
<td>Chronic obstructive pulmonary disease with (acute) exacerbation; Pneumonia</td>
<td>7%</td>
</tr>
<tr>
<td>Neurologic</td>
<td>3</td>
<td>Hemiplegia and hemiparesis following cerebral infarction, Diabetic neuropathy, Repeated falls</td>
<td>4%</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>Sepsis, Injury of head</td>
<td>5%</td>
</tr>
</tbody>
</table>

N=81 (cases with non-missing diagnosis data)
Results

• Clinician feedback pointed to areas for improvement of usability
  – Preference for finger use rather than stylus
  – Sharing of tablets was a logistical hurdle
  – Suggestions for aesthetic enhancements to app
  – Technical aspects such as security, update message popups, power saving settings could be disruptive

• A perceived lack of clinical relevance (to the current clinical process) led to low rate of repeat assessments
Conclusion

• HIT-enabled PROMs in the home health setting is suitable for the workflow

• No negative impact on goals of care

• Tablets were found to be practical and generally accepted by both home health clinicians and patients
Considerations

• Patient functional capabilities at the tool level of PROMIS®
• Ease of integration of app collected data into existing EHR
• Future research:
  – Test HIT enabled PROMs on improvement of care quality and outcomes
  – Test on a larger scale
References

References


References


References


References


• PEPR. Pediatric Patient Reported Outcomes in Chronic Diseases Consortium. Advancing the Sceince of Pediatirc Patient Reported Outcomes for Children with Chronic Diseases. Retrieved from https://www.peprconsortium.org/


References


Questions

- Quality Insights: www.qualityinsights.org
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- Please remember to complete the evaluations