How Are Your Patients Managing Pressure Throughout the Day?

Developing Technology for Individualizing Patient Education

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Background:

• Seat interface pressure mapping (IPM) is used to visualize pressure distribution.
• IPM guides clinical assessment of pressure injury risk, wheelchair setup & cushion selection, positioning, and patient/caregiver education about managing sitting-related pressure.
• Clinicians rely on self-report from patients about how they manage pressure throughout daily routines while using a wheelchair.
• An updated continuous IPM mobile app and custom pressure map was developed with feedback from Veterans with SCI in a parallel aim (Figure 1).

Our Objectives:

• Understand expert clinician (OT/PT) preferences for observing and interacting with continuous IPM data on a remote dashboard.

Design:

• 3 rounds of virtual focus groups and interviews, each followed by design & development of a Clinical Dashboard.
• Hamilton Rapid Turn Around method used to analyze transcripts.

Data summaries provided actionable design & development steps.

Results

Summary of focus group feedback. Participant comments shown in figure.

• Continuous IPM reported on Clinical Dashboard provides necessary detail to evaluate quality of weight shifts and may support clinical decision making.

• Visual overview of all-day pressure management on one figure with option for more/fewer detail allows clinicians to focus on relevant individualized patient data.

• Replay pressure maps from selected timeframes in past to identify source of problems.

• Customizable reporting features for objective documentation and patient/caregiver education.

• Dashboard view features meet needs of a variety of practice settings.

• Remote access allows clinicians to change patient-facing mobile app settings, update goals or simplify the patient interface.

Limitations

• Use of IPM on top of seat cushion has potential to alter pressure at sitting interface, therefore research is lacking on the clinical effect impact in day-long use by wheelchair users.

• IPM has inherent limitations in reliability of absolute measures in single senses, however, relative measures such as PPI and DI are more stable over time.

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References


Beebe, J. (2014). Minneapolis, MN 55455
