Improving pain management and opioid safety through a systemwide, data driven evaluation of the CDC opioid prescribing guideline best practices and the use of Clinical Decision Support: A HEAL Translating Data 2 Action to Prevent Overdose Project

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WHAT WE LEARNED

User centered design and implementation science methods support multi-level stakeholder feedback to create clinical decision support well suited for widespread adoption

BACKGROUND

- Clinical decision support (CDS) tools within electronic health record (EHR) workflows are promising strategies to support uptake of evidence-based practices, improve quality of care and maximize the value of routinely collected data
- User-centered design (UCD) is valuable for creating CDS tools likely to be adopted and used in real-world care settings
- Integration of implementation science methods with UCD methods can be useful when designing CDS tools intended to align with multi-level contextual factors that may influence local adoption and sustainability

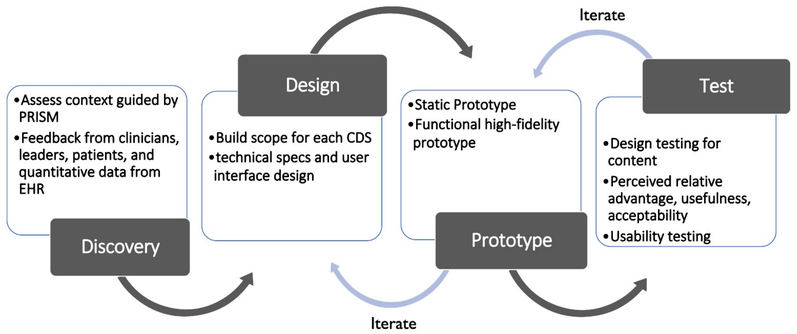
OBJECTIVES

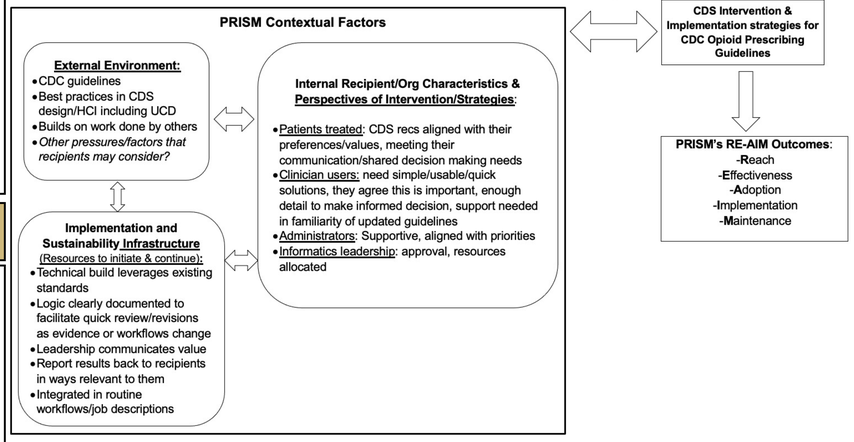
- To conduct user-centered design of a CDS tool to support use of new CDC guidelines for opioid prescribing[1]
- To use mixed methods to assess provider, leadership, and patient perspectives on contextual factors potentially influencing CDS adoption as defined by the Practical, Robust Implementation and Sustainability Model (PRISM)2

METHODS

UCD, implementation science design will follow four stages:

- Stage 1: **Discovery**: Provider user perspectives gathered using focus groups assessing key PRISM domains; multi-level patient and leadership perspectives assessed using informal engagement methods
- Stage 2: **Design**: Technical build scope specifications for the CDS is created using a series of design sessions to define the logic and functionality
- Stage 3: **Prototype**: Iteratively create a functional high-fidelity prototype of the CDS in EHR testing environments
- Stage 4: **Test**: Potential provider users will iteratively be shown the prototype and asked about the perceived relative advantages, usefulness, and acceptability of the CDS





RESULTS

- The discovery phase allows the CDS design team to create tools that will be adopted by providers, supported by the organization and leadership and aligned with patient preferences
  - Clinicians, who will be the end-user for the CDS will be able to identify their workflow barriers, needs and requirements.
  - Hospital administrators will inform the design process on necessary value propositions and can help garner support for the CDS and support sustainability
  - Patients will not directly see the CDS, but colleting their feedback on pain management, preferences in care/communication and outcomes collection can help improve the ability of the CDS to provide patient-centered care
- Information from the discovery phase is organized within the design phase to create a first draft of the CDS logic and user interface. The design leads to a prototype that can be tested before implementation to make iterative improvements

LIMITATIONS

- Rigorous user-centered design integrated with data collection based on implementation science can be time consuming; rapid prototyping to move forward with the project is important

CONCLUSIONS

- Using UCD and implementation science methods to create CDS by incorporating multi-level stakeholder feedback can help align the CDS with the context and garner needed support, which can improve the functionality, adoption and sustainability of the CDS
- Wider acceptance of CDS can promote evidence-based care
- In the current study, a CDS with UCD and implementation science methods created using a four-stage process of Discovery, Design, Prototype, and Test will lead to a highly functional and acceptable CDS to help providers rapidly adopt newly created CDC guidelines for opioid prescribing

References

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