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Title

Card studies using EHR alerts linked to REDCap questionnaires: a practical session on how to build the tools

Priority 1 (Research Category)

Research methodology and instrument development

Presenters

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Abstract

Background - Researchers use card studies to obtain observational data about primary care provider (PCP) knowledge, attitudes, and behaviors on a variety of topics. Card studies have been influential in changing clinical practice, such as the reduction of antibiotics in patients with upper respiratory infections. Cards are usually printed on heavy-stock paper, include 2-5 questions, and take >3 minutes to complete at a patient visit. Paper cards are easy to design and deploy but have associated costs (printing, postage, data entry, etc). In 2022, Bunce et al embedded “card” questions into an electronic health record (EHR) with responses saved to the EHR database. This talk describes revisions to their methods for designing and building EHR-based cards that can be replicated in academic healthcare settings and some community clinics.

Methods – We engaged PCPs, EHR analysts, a REDCap analyst, and the research team in a series of design meetings. The group identified these goals: 1) the EHR alerts would trigger only for PCPs and patients who met the research project inclusion criteria; 2) alerts would minimize disruptions to the clinical workflows; 3) PCP could choose not to complete a card; 4) card responses would not be to the patient medical record; 5) cards would allow for complex questions with branching logic and skip patterns.

Results – We used a standard Epic Best Practice Advisory (BPA) configured to pop-up only for select PCPs during specific weeks. In the pop-up, PCPs could defer completing the card until later. The pop-up included a hyperlink to a REDCap questionnaire that easily handled branching logic and skip questions. Card responses were easily managed in the REDCap database, not in the medical record. A survey of PCP

users showed equal satisfaction with paper or EHR-based cards. For large projects, overall costs of the EHR-based cards is favorable to paper cards due to ease of data management. In this presentation, we will show participants details of how we configured the Epic and REDCap tools, making it relatively easy to replicate the process for other card studies.

Conclusions – EHR-based cards are feasible at most academic healthcare systems but may be harder to use at smaller, community-based clinics with less support of the EHR. EHR-based cards are convenient due to simplicity of data management and ability to build questionnaires with branching logic.