Qualitative Evaluation of Real-Time Provider Free-Text Responses to Interruptive Clinical Decision Support (CDS) for Opioid Prescribing

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WHAT WE LEARNED

The inclusion of a free text box on CDS can be used to identify areas for improvement in dissemination and user-education needs.

BACKGROUND

- ➢ Interruptive electronic health record (EHR) clinical decision support (CDS) alerts hold potential as an implemented strategy to support delivery of evidence-based practices.
- ➢ CDS dissemination and implementation can be challenging and resource intensive
- ➢ Collecting user feedback on CDS might inform iterative changes in implementation strategy

OBJECTIVES

- ➢ To evaluate user free-text responses in a new CDS to increase the use of the prescription drug monitoring program (PDMP) across an integrated health care system.

METHODS

- ➢ **Setting:** UCHealth system >500k ED visits, >130k admissions and >3.5m outpatient visits/year
  - Academic, community, urban/suburban/rural
- ➢ **Participants:** Healthcare providers randomized to one of three types of CDS alerts.
  1. Mandated: CDS fires for all controlled medication prescriptions, no risk criteria
  2. PDMP: CDS fires for high risk PDMP criteria
  3. PDMP + EHR: CDS fires for PDMP and/or EHR high risk criteria
- ➢ **Data:** User typed responses in a comment box embedded in a new CDS alert during the process of controlled medication prescribing (figure 1) were collected and thematically analyzed looking for common trends and patterns in responses.
  - Percentages of responses falling into identified themes based on implications for CDS.
- ➢ **Education/dissemination:** Disseminated via email and in-person meetings prior to deployment
  - Ongoing Outreach via email or EHR messaging for providers with >=8 bypasses AND <80% PDMP link utilization or providers with 3 or more alerts firing during a single patient encounter.
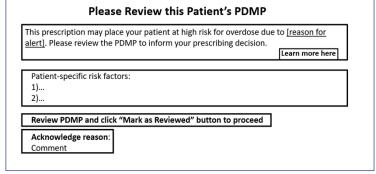- ➢ CDS alerts comments between 1/19/21 and 10/24/21 were examined

Fig 1. CDS Alert Message

RESULTS

- ➢ 1,893 unique providers saw a total of 54,516 alerts while treating 34,368 unique patients.
- ➢ 72% of alerts resulted in the desired action, checking the PDMP.
- ➢ The alert was bypassed 28% of the time, resulting in 15,461 entered comments. Utilization of the comment bypass reduced over the observation period.
- ➢ Written responses when the alert is bypassed: 83.9% were actual responses 16.1% were indiscernible strings of letters/numbers/spaces.
- ➢ Percentages of bypass response categories are fairly consistent across the three types of CDS alert.
- ➢ Response Categories:
  - **Accept Responsibility (58.7%)** explanations for the prescription, indications that the prescription is being changed, or will be checking the PDMP.
  - **Alert Functionality (35.4%)** providers indicate that they have already completed the suggested PDMP check or raise a concerns about CDS functionality.
    - In this category ~ 98% indicated they had completed the suggested PDMP check, 1% indicated frustration with CDS operation,1% disagreed a PDMP check is necessary
  - **Error (0.9%)** providers stated a mistake was made or there was a technical error preventing a PDMP check.
  - **Unknown (5.0%)** comments were given without sufficient context to understand the intent, such as none, meds, other, or PDMP.
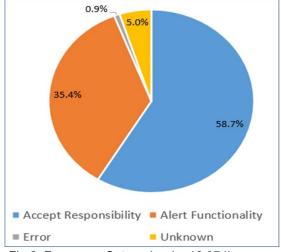

Fig 2. Response Categories (n=12,974)

LIMITATIONS

- ➢ We did not target providers for additional education based on their CDS comments. It is unknown if behavior change would result from this targeting.
- ➢ Single healthcare system and CDS alert that may not be generalizable to other systems.
- ➢ CDS alert was a homegrown alert specific for the local EHR

CONCLUSIONS

- ➢ Providers give thoughtful answers to CDS alerts when given the opportunity, CDS comment boxes can identify challenges for late-adopters.
- ➢ Utilization of a textbox during pragmatic CDS rollouts can provide additional opportunities to improve CDS to promote evidence-based practices.
- ➢ Monitoring real-time feedback on the CDS could:
  - Identify providers struggling to understand CDS purpose or navigate the CDS
  - Identify and inform changes that may be needed in CDS to better support providers in their workflow.