Improving Measurement of Patient Responsiveness Using a Multilevel, Mixed Methods Approach

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Background

- Uptake of a new health intervention is dependent on patient acceptance and responsiveness.[1]
- Patient report is frequently used to assess patient responsiveness, but prone to errors, such as over-reporting and missing data.[2,3]
- Measures from multiple methods and sources can provide a more comprehensive understanding of patient responsiveness with opportunity to identify strategies for adaptation.[4]

Objective

This study describes the use of electronic health record (EHR) data, patient report, and implementor logs to comprehensively measure patient responsiveness, including barriers to uptake, in a pragmatic intervention trial.

Pragmatic Trial Description: Just in Case (JIC) Trial

Intervention: Pharmacy co-dispensing of naloxone (opioid antagonist medication) with opioid medication refill
Design: cluster randomized intervention trial
Target population: 18 years and older on chronic opioid medication therapy
Setting and timeframe: 2017-2019 at Denver Health Medical Center, a safety net health system serving the Denver metro area.

Methods

We describe the following outcomes of patient responsiveness for three measures in the first four months of the JIC Trial for each clinic randomized to co-dispensing:
Primary Outcome: Quantity of patient responsiveness (QPR) defined as the number of eligible patients who: 1) filled naloxone, 2) refused naloxone, and 3) not offered naloxone
Secondary Outcome: Context of patient responsiveness (CPR) assessed barriers to uptake
Measures:
EHR: Eligible patients identified using opioid medications fills.
QPR measured through naloxone refill data
Patient report: A sample of eligible patients completed surveys 4 mths after implementation.
QBR measured through 2 survey responses 1) naloxone refill in previous 4 months (yes or no) 2) "not offered" barrier to uptake selected.
CPR assessed in those not filling naloxone with survey item: why not? (select all that apply).
Implementor log: Implementors recorded information on patients offered the intervention.
QBR: yes/no naloxone acceptance response.
CBR: for patients not accepting, a qualitative reason for refusal was recorded.

CBR measures: The list of barriers in the patient report survey and qualitative responses from the implementor report were coded for common themes and counted to assess the frequency of barrier to naloxone uptake for identification of strategies for improvement.

Results

Primary Outcome: Quantity of Patient Responsiveness Categories to the JIC Trial			
Data Source	Naloxone Uptake	Naloxone Refusal	Not Offered
EHR N=527 (100%)	204	Unknown out of 323	Unknown out of 323
Patient Report N=118 (22%)	57	38	23
Implementor Report N=172 (33%)	138	34	Unknown
Total*	204	65	23

Summary

- Quantity of Eligible patients and those responding to the intervention (Naloxone uptake) can be identified using the EHR.
- Implementor and patient report contributed information on patients that do not accept if they refused or were just not offered: 65 patients refused, 23 not offered
- Still Unknown if 235 patients were not offered or refused naloxone

Secondary Outcome: Context of Patient Responsiveness Frequency of Themes identified for Barriers to Naloxone Uptake								
Data Source	Lack of knowledge	cost	Don't Need	Difficult to use	Already Have	Live alone	Fear of Adverse Effects	Fear of repercussions
Implementor Report (n=34)	0	10 (29%)	10 (29%)	0	12 (35%)	1 (3%)	0	0
Patient Report (n=61)	19 (31%)	7 (11%)	47 (77%)	10 (16%)	0	30 (49%)	8 (13%)	11 (18%)

Summary

- Cost was a barrier to naloxone uptake identified across both implementors and patients.
- Implementors identified opportunities for process improvement including already having naloxone
- Patients reported multiple barriers indicating additional information may be needed (lack of knowledge, don't need, difficult to use, and fear of repercussions

Conclusions

- A multilevel mixed methods approach using measures from the EHR, patients, and implementors provides a comprehensive assessment of patient responsiveness with increased accuracy.
- EHR data provides accurate counts of intervention uptake and eligibility, but is enhanced with patient report and implementors report identifying if non acceptance was due to refusal or not being offered.
- Adding measures across different levels (implementors and patients) provides context for those not accepting the intervention, highlighting opportunities for improvement or adaptation.
- Qualitative data from implementors identified already having naloxone as a barrier to uptake. This barrier could also contribute to reasons why naloxone may not have been offered and present opportunities for process improvement.
- Patients barriers to uptake across multiple topics highlighted an additional opportunity for adaptation and improvement to increase knowledge at co-dispensing.

In what way does the methods used in this project relate to planning or conducting pragmatic research?

By including both qualitative and quantitative data from multiple levels (implementors patients, and administrative data) you are able to obtain a more accurate assessment of implementation outcomes with context providing opportunities for improvement or adaptation.

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