Supplemental Figure 1.

Supplemental Figure 1. Best practice alert (BPA) in Epic electronic health record.
The BPA interface presented a link to the Opioid Prescribing Engagement Network
(OPEN) guidelines, custom gynecology postoperative discharge order set containing
default options for both oral non-opioid and opioid pain medications, and additional
medications including oral anti-emetics and laxatives. Providers could 1) cancel the alert
and change the dispense quantity to less than or equal to 15 tablets/pills; (2) remove
the opioid order in progress and open a gynecology order set with defaulted medication
options; or (3) override the alert.

Supplemental Information.

Gynecologic Best Practice Alert Qualtrics Survey
Summer 2021

Target Audience: Surgical care providers at Michigan Medicine (attendings, fellows, residents, APPs).
Future Plans: Use learned knowledge to inform prescribing practices and surgical patients' transitions of care.

Introduction:

- The purpose of this Qualtrics Survey is to understand current practices and attitudes towards the use of a clinical support decision tool best practice alert for gynecologic post-discharge opioid prescribing following hysterectomy.
- This Qualtrics Survey will take approximately 5 minutes.
- It will be recorded, with your permission, to permit data aggregation and analysis.
- All of your responses will be kept strictly confidential and will be de-identified for the purposes of data analysis and interpretation.

General Best Practice Alert Questions

Provider Recall of the Best Practice Alert: First, we would like to gain a better understanding of your recollection of this gynecologic post-discharge opioid prescribing best practice alert.

Between the months of October 2019 and February 2021, the gynecologic post-discharge opioid prescribing best practice alert displayed below fired for your account in the Epic electronic health record.

The best practice alert was designed to fire whenever a prescribing surgeon's post-discharge opioid orders were in excess of guideline recommendations. For the duration of its implementation, the best practice alert presented a link to the Michigan Opioid Prescribing Engagement Network guidelines, custom-built gynecology postoperative discharge order set containing defaulted prescription order options for both oral non-opioid and opioid pain medications, and additional medications including oral anti-emetics and laxatives. You had multiple prescribing options when interacting with the best practice alert once it fired:

1. Cancel the alert and change the dispense quantity to < 15 tablets/pills OR
2. Remove the opioid order in progress and open a gynecology order set with defaulted medication options OR
3. Override the alert

You were one of the surgeons for whom the best practice alert fired, and we would like to learn more about your impressions of this best practice alert.

1. Do you remember this event? **(Forced response)**
   0 = No
   1 = Yes
   2 = Unsure

   a. What was the <u>initial reason</u> for which your prescription was higher than the guideline recommendations for hysterectomy from the Michigan Opioid Prescribing Engagement? (Choose all that apply) **(Forced response)**
      1. 1 = Was not aware of guidelines
      2. 2 = My personal practice and/or the practice of my attending physician recommends to prescribing a higher quantity
      3. 3 = Concerns for pain control
      4. 4 = Patient inability to use alternative treatments
      5. 5 = Do not remember details
         1. Free response
   b. Before you wrote this prescription, were you aware of the Michigan Opioid Prescribing Engagement Network and other organizations' prescribing recommendations for hysterectomy (https://michigan-open.org/prescribing-recommendations/)? **(Forced response)**
      1. 0 = No
      2. 1 = Yes
      3. 2 = Unsure

*Note: If "yes" was selected for Q1, continue to review the document as follows.
If "no" or "Unsure" were selected for Q1, please see the end of the document for the questions these providers will see/answer*

<u>*If yes was selected*</u>

Provider Satisfaction with the Best Practice Alert

Provider Perspectives: For these next questions, we will be asking about your personal experience interacting with the best practice alert since its introduction into the EHR.

1. I found this best practice alert to be <u>clinically useful</u> for post-discharge opioid prescribing after hysterectomy. (**Forced response)**
   a. 1 = Strongly agree
   b. 2 = Moderately agree
   c. 3 = Slightly agree
   d. 4 = Neutral
   e. 5 = Slightly disagree
   f. 6 = Moderately disagree
   g. 7 = Strongly disagree
   h. 8 = Unsure

   Please elaborate. **(Optional)**
   _____
   _____

2. This best practice alert increased my <u>awareness and knowledge</u> of the prescribing guidelines from Michigan Opioid Prescribing Engagement Network and Michigan Surgical Quality Collaborative. **(Forced response)**
   a. 1 = Strongly agree
   b. 2 = Moderately agree
   c. 3 = Slightly agree
   d. 4 = Neutral
   e. 5 = Slightly disagree
   f. 6 = Moderately disagree
   g. 7 = Strongly disagree
   h. 8 = Unsure

   Please elaborate. **(Optional)**
   _____
   _____

3. This best practice alert made me consider my own post-discharge opioid prescribing habits. **(Forced response)**
   a. 1 = Strongly agree
   b. 2 = Moderately agree
   c. 3 = Slightly agree
   d. 4 = Neutral
   e. 5 = Slightly disagree

f. 6 = Moderately disagree
g. 7 = Strongly disagree
h. 8 = Unsure

Please elaborate. **(Optional)**

_____
_____

Best Practice Alert Improvement

**Interface/Workflow Preferences:** There are many ways to interact with the EHR. We are interested in learning more about your experience with and preferences for the best practice alert.

1. If future iterations of this best practice alert were to be integrated into the clinical workflow, what aspects of its <u>quality and/or interface</u> would you change, if any? Any other suggestions? **(Optional)**

_____
_____

**Future Applications:** Please indicate your preferences for the future use of this best practice alert.

1. I believe this best practice alert would be beneficial for other procedure/surgery types in the future. (**Forced response**)
   a. 1 = Strongly agree
   b. 2 = Moderately agree
   c. 3 = Slightly agree
   d. 4 = Neutral
   e. 5 = Slightly disagree
   f. 6 = Moderately disagree
   g. 7 = Strongly disagree
   h. 8 = Unsure

Please explain. **(Optional)**

_____
_____

If no or unsure was selected

Provider Satisfaction with the Best Practice Alert

Provider Perspectives: For these next questions, we will be asking about your perspectives on interacting with the best practice alert described.

4. The best practice alert described would be <u>clinically useful</u> for post-discharge opioid prescribing after hysterectomy. (**Forced response)**
   a. 1 = Strongly agree
   b. 2 = Moderately agree
   c. 3 = Slightly agree
   d. 4 = Neutral
   e. 5 = Slightly disagree
   f. 6 = Moderately disagree
   g. 7 = Strongly disagree
   h. 8 = Unsure

   Please elaborate. **(Optional)**
   _____
   _____

5. The best practice alert described would increase my <u>awareness and knowledge</u> of the prescribing guidelines from Michigan Opioid Prescribing Engagement Network and Michigan Surgical Quality Collaborative. **(Forced response)**
   a. 1 = Strongly agree
   b. 2 = Moderately agree
   c. 3 = Slightly agree
   d. 4 = Neutral
   e. 5 = Slightly disagree
   f. 6 = Moderately disagree
   g. 7 = Strongly disagree
   h. 8 = Unsure

   Please elaborate. **(Optional)**
   _____
   _____

6. The best practice alert described would make me consider my own post-discharge opioid prescribing habits. **(Forced response)**
   a. 1 = Strongly agree
   b. 2 = Moderately agree
   c. 3 = Slightly agree
   d. 4 = Neutral
   e. 5 = Slightly disagree
   f. 6 = Moderately disagree
   g. 7 = Strongly disagree
   h. 8 = Unsure

Please elaborate. **(Optional)**

_____
_____

Best Practice Alert Improvement

**Interface/Workflow Preferences:** There are many ways to interact with the EHR. We are interested in learning more about your preferences for the best practice alert described.

2. If future iterations of the best practice alert described were to be integrated into the clinical workflow, what aspects of its <u>quality and/or interface</u> would you change, if any? Any other suggestions? **(Optional)**

_____
_____

**Future Applications:** Please indicate your preferences for the future use of the best practice alert described.

2. I believe this type of best practice alert would be beneficial for other procedure/surgery types in the future. (**Forced response**)
    a. 1 = Strongly agree
    b. 2 = Moderately agree
    c. 3 = Slightly agree
    d. 4 = Neutral
    e. 5 = Slightly disagree
    f. 6 = Moderately disagree
    g. 7 = Strongly disagree
    h. 8 = Unsure

    Please explain. **(Optional)**

    _____
    _____

Supplemental Information. Qualtrics survey assessing provider/user satisfaction with the best practice alert (BPA). Five-minute Qualtrics survey distributed to resident physicians for whom the BPA triggered, inquiring about individual perspectives, interface preferences, and QI barriers/facilitators of the BPA.
[*]QI: Quality Improvement; [†]BPA: Best Practice Alert

Supplemental Figure 2.
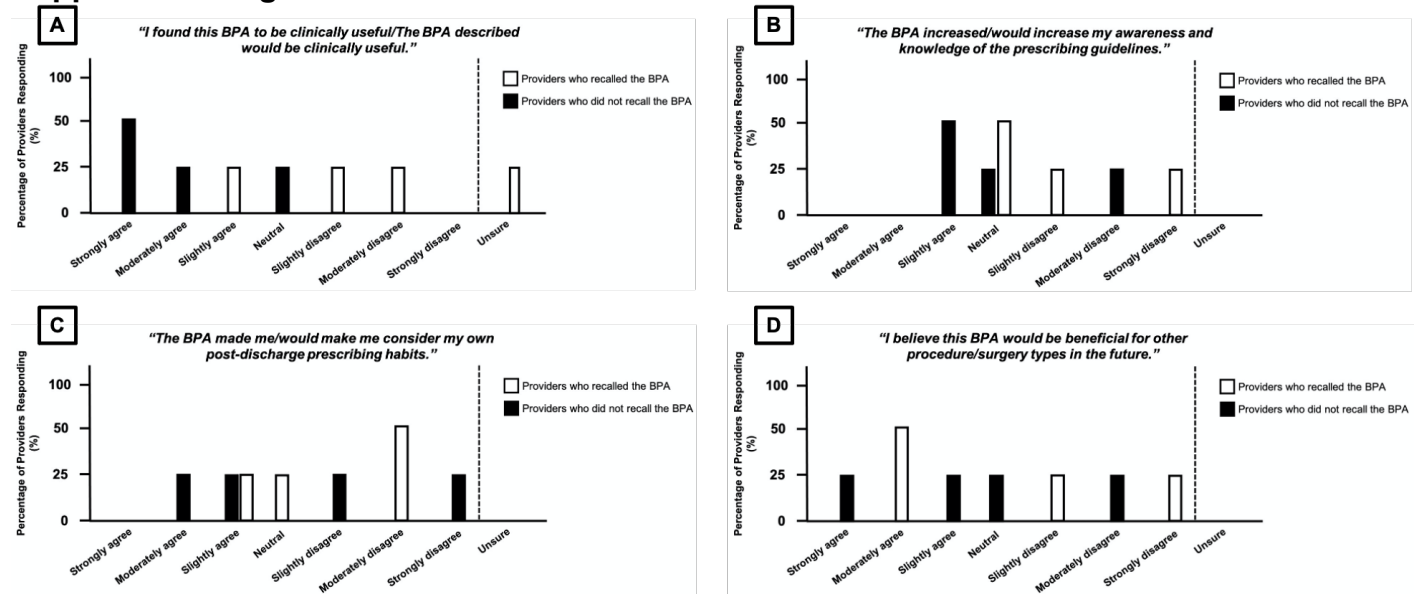
Supplemental Figure 2A-D.
Healthcare Providers' Views on the Post-Discharge Opioid Prescribing Best Practice Alert (BPA).
Providers recalling the BPA (n=4) had mixed views: 25% found it slightly clinically useful; 50% were neutral regarding the BPA increasing guideline awareness; 50% moderately disagreed the BPA would cause changes to personal prescribing habits; and 50% moderately agreed the BPA would be beneficial for other procedure/surgery types. Providers that did not recall the BPA trigger (n=4) showed positive responses: 50% strongly agreed on the BPA's clinical usefulness; 50% slightly agreed on the BPA increasing guideline awareness; responses were varied regarding changes to personal prescribing habits and benefit for other procedure/surgery types. The dashed line represents a division between those providers who responded versus those who were unsure about the statement.
*BPA: Best Practice Alert