Evaluation of the Implementation of the Ohio Emergency and Acute Care Facility Opioids and Other Controlled Substances (OOCS) Prescribing Guidelines

Final Report to the Ohio Department of Health

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I. Executive Summary

The University of Cincinnati (UC) received a contract to conduct an evaluation study of the adoption and the implementation of the Ohio Emergency and Acute Care Facility Opioids and Other Controlled Substances (OOCS) Prescribing Guidelines by Ohio’s Hospital Emergency Departments (EDs). The purpose of this evaluation was to determine the extent and level of adoption of the Ohio Emergency and Acute Care Facility OOCS Prescribing Guidelines and obtain feedback and recommendations from hospital administration and emergency department staff regarding any improvements that would assist with the implementation of the Guidelines. The results of the analysis are summarized below.

- Responses from 150 out of 163 hospitals were obtained (92% response rate).
- In total, 112 (75%) of the responding hospitals had an OOCS prescribing policy, were adopting one, or were implementing guidelines without a specific policy.
- Of the above 112 hospitals, 81 (72%) based their policy on, or were following, the Ohio Emergency and Acute Care Facility OOCS Prescribing Guidelines.
- The majority of respondents strongly agreed/agreed that the Ohio OOCS prescribing guidelines increased the use of the OARRS prescription monitoring program and reduced inappropriate opioid prescribing.
- For the management of acute pain, 36% of respondents reported writing opioid prescriptions for more than 3 days for 5% or more of their acute pain patients.
- For the management of chronic pain, 63% of respondents reported using IM or IV opioids in 5% or more of their chronic pain patients.
- Approximately 30% of respondents provided a prescription for opioids to patients who had received an opioid prescription from another provider or had previously presented with the same problem in the last month in 5% or more chronic pain patients.
- 81% of respondents reported that they never require patients to sign a pain agreement.
- 45% of respondents reported that patients receiving an opioid prescription never receive a consultation from the hospital’s palliative or pain service.
• 56% of survey respondents reported that they never provide naloxone or a prescription for naloxone to high risk opioid overdose patients.

• Main themes identified from 16 interviewees regarding the implementation of the OOCS prescribing guidelines included the need for:
  o Increasing organizational responsibility;
  o Assistance with OARRS utilization;
  o Reducing the effect of patient satisfaction scores on opioid prescribing;
  o Increasing patient involvement.

In conclusion, a large majority of hospitals reported having an OOCS prescribing policy, adopting one, or implementing guidelines without a specific policy. Of these hospitals, 72% were following the Ohio Emergency and Acute Care Facility OOCS Prescribing Guidelines. Although the guidelines are strongly supported by ED physicians, many believed more organizational responsibility, administrative assistance, and patient involvement were required to increase their implementation. Furthermore, patient satisfaction scores were reported to negatively impact efforts to reduce opioid prescribing in EDs.
II. Introduction

Ohio has the fifth highest rate of drug overdose deaths (24.6 deaths per 100,000) in the United States (US).\(^1,2\) Unintentional drug overdose has become the leading cause of injury-related death in Ohio.\(^3\) In 2015, there were 3,050 overdose deaths in Ohio\(^3\) and in 2014 there were an estimated 12,847 overdose events reversed by emergency medical services (EMS) with naloxone.\(^4\) Naloxone is an opioid antagonist that can reverse an opioid overdose and prevent a fatality. This highlights the seriousness of the opioid epidemic as this would equate to an estimated 43 fatal and non-fatal overdoses every day in Ohio.

In response to this growing opioid epidemic in Ohio, Governor John R. Kasich has put in place one of the nation’s most aggressive and comprehensive approaches to address opioid addiction and overdose deaths, including a strong focus on preventing the non-medical use of prescription drugs. In 2011, he created the Governor's Cabinet Opiate Action Team (GCOAT).\(^5\) The Action Team is comprised of several state agencies, which has implemented a multifaceted strategy to improve opioid safety, combat diversion, and reduce unintentional drug overdose deaths.\(^5\)

Since its development, the GCOAT has released three guidelines on the responsible use of opioids. These include the Emergency Department/Acute Care Facility Opioid Prescribing Guidelines, the Opioid Prescribing Guidelines for Treatment of Chronic Pain, and the Opioid Prescribing Guidelines for Treatment of Acute Pain.\(^5\) All these guidelines are designed to urge prescribers to first consider non-opioid therapies and to encourage prescribers to check Ohio’s prescription drug monitoring program, the Ohio Automated Rx Reporting System (OARRS), before prescribing opioids.

In 2014, OARRS registration and requests before prescribing or personally furnishing an opioid became mandatory, however some exceptions to this rule exist.\(^6,7\) These exceptions include personally furnishing or prescribing for amounts not exceeding seven days, for administration in a hospital, for acute pain from a surgical/delivery, or if the OARRS report is not available.\(^6\) Other exceptions include the use of opioids in
hospice or cancer patients.\textsuperscript{6} As such, the use of opioids in the hospitals setting is generally not monitored.

These exceptions exist as addiction to opioids has primarily been linked to duration of exposure.\textsuperscript{8} Hence, it is assumed that brief exposure for acute pain (e.g. emergency departments) will have a negligible role in iatrogenic addiction. However, due to the widespread use of opioids in Emergency Departments (EDs), some clinicians believe that initial opioid exposure may be sufficient to trigger initial misuse that could ultimately lead to addiction.\textsuperscript{9} With over 129 million ED visits occurring every year\textsuperscript{10} and 39\% of visits associated with painful conditions,\textsuperscript{11} even a small risk of opioid addiction can have large consequences. In addition, EDs often treat patients repeatedly as patients with acute pain transition to sub-acute and chronic pain and provide care for patients with established chronic pain who experience lost or interrupted access to other care providers. Thus, emergency clinicians may be unable to recognize iatrogenic addiction as a direct consequence of their care, as it would only be identified by another provider later.\textsuperscript{9}

The Ohio Department of Health has also implemented Project DAWN (Deaths Avoided with Naloxone), an opioid overdose prevention program (OOPP), to educate the public and provide them with naloxone to prevent overdoses.\textsuperscript{12} Project DAWN kits have been distributed from Project DAWN sites and EDs to patients at high-risk of opioid overdose to prevent future overdoses.

With EDs having such an important role in the opioid epidemic, the overall goal of this project was to evaluate the implementation of the Ohio Emergency and Acute Care Facility OOCS Prescribing Guidelines by Ohio's Hospital EDs.

- **Aim 1:** To determine the extent and level of adoption of the Ohio Emergency and Acute Care Facility OOCS Prescribing Guidelines by Ohio's Hospital EDs.
- **Aim 2:** To obtain feedback and recommendations from hospital administration and emergency department staff regarding any improvements or changes that
would assist with their implementation of the Ohio Emergency and Acute Care Facility OOCS Prescribing Guidelines.

The UC study team included the following people:

- Neil MacKinnon, PhD, Principal Investigator
- Jonathan Penm, PhD, Co-Investigator
- Jill Boone, PharmD, Co-Investigator
- Erin Winstanley, PhD, Co-Investigator
- Michael Lyons, MD, Co-Investigator
- Edmond Hooker, MD, Co-Investigator
- Steve Carlton-Ford, PhD, Co-Investigator
- Rebecca Mashni, BS, Research Assistant
- Chloe Connelly, MA, Graduate Student
- Erica Tolle, PharmD, Academic Fellow

The UC study team would like to acknowledge the following groups and individuals for their valued role in this evaluation study:

- American College of Emergency Physicians, Ohio Chapter
- Tina L. Turner, State Office of Rural Health Administrator, Office of Health Policy and Performance Improvement, Ohio Department of Health
- Kathleen Koechlin, Ohio Department of Health
- Jolene Hyrmer, Ohio Department of Health
- Lisa Heinbach, Ohio Department of Health
- Pam Leimbach, Ohio Department of Health
- Amy Holthussen, Ohio Department of Health
- Socrates Tuch, Ohio Department of Health
- Sara Lehew, Winkle College of Pharmacy
- Mary Ann Schaefer, Winkle College of Pharmacy
- Jodie Hunter, Winkle College of Pharmacy
- Melanie Fulton, Winkle College of Pharmacy
III. Research Methods

This study was approved by the Institutional Review Board at the University of Cincinnati and at the Ohio Department of Health.

**Aim 1:** To determine the extent and level of adoption of the Ohio Emergency and Acute Care Facility OOCS Prescribing Guidelines by Ohio's Hospital EDs.

**Survey Design**

The survey was developed by experts on the research team who have experience in survey design and opioid prescribing in EDs, with substantial input from the Ohio Department of Health. The survey instrument included primarily closed-ended questions (using a Likert-scale) to evaluate implementation of the guidelines. The survey also asked questions based on the consolidated framework for implementation research (CFIR) to identify facilitators and barriers for implementing the guidelines.13 The CFIR consolidates key constructs from over 500 published implementation theories to provide a pragmatic structure for approaching complex, interacting, and multi-level health-related interventions in the real world. The CFIR contains five major domains: (1) characteristics of the intervention, (2) inner setting, (3) outer setting, (4) individuals involved, and (5) the implementation process. Additional details of these major domains are presented in Figure 1. The CFIR has been used extensively to guide formative evaluations to predict successful implementation and sustainability of health-related interventions or improve existing health-related interventions.13-18
Once the survey was developed, the ODH reviewed all its contents and the survey was pre-tested for key elements of accessibility, usability, and understandability by five ED physicians. Once finalized, the survey was made available as a paper version and a web-based version using REDCap (Research Electronic Data Capture).

**Survey Distribution**

Survey distribution followed Dillman’s Tailored Design Method, augmented with telephone interviews. Dillman’s Tailored Design Method includes a mixed-mode survey, postal mail and e-mail, based on Social Exchange Theory to create trust with individuals on the benefits and costs of responding to the survey. Our survey targeted primarily ED medical directors or those identified as the most appropriate person to complete the survey. The survey was also made available to ED physicians to increase the hospital response rate. Hospital Chief Executive Officers (CEOs) were also contacted to encourage their ED medical director or most appropriate person to complete the survey. In addition, telephone interviews were conducted to further increase the hospital response rate.

Hospitals with an ED in Ohio were identified through the ODH Office of Health Assurance and Licensing. Hospitals’ mailing addresses, phone numbers, and an e-mail for their respective CEO were obtained from their hospital registration report. ED medical directors’ details were obtained through telephone calls from each hospital.
of September 2016, 271 hospitals were registered in Ohio. In total, 164 of these hospitals had an ED. The following schedule was used to contact survey participants:

**Day 0**
- ED medical directors were called to inform them about the study and identify the most appropriate person to complete the study. This person’s email and postal address were then obtained to forward them more information about the study.

**Day 1:**
- ED medical directors/most appropriate people were sent a letter with a link to the survey via mail. A $10 incentive was enclosed with this request.
- CEOs were sent a letter with a link to the survey via mail to pass to their ED medical director/most appropriate person. A $10 incentive was enclosed with this request.

**Day 4:**
- ED medical directors/most appropriate people were sent a link to the survey via email.
- CEOs were sent a link to the survey via email to forward to their ED medical director/most appropriate person.
- ED physicians in Ohio were sent a link to the survey via email through the American College of Emergency Physicians (ACEP), Ohio Chapter.

**Day 10:**
- ED medical directors/most appropriate people were sent a reminder email about the survey.
- CEOs were sent a reminder email about the survey.
- ED physicians were sent a reminder email about the survey.
Day 18:

- ED medical directors/most appropriate people were sent a hard copy of the survey via the mail.
- CEOs were sent a hard copy of the survey via the mail to pass to their ED medical director/most appropriate person.

Day 22:

- ED medical directors/most appropriate people were sent a final reminder email about the survey.
- CEOs were sent a final reminder email about the survey.
- ED physicians were sent a final reminder email about the survey.

Aim 2: To obtain feedback and recommendations from hospital administration and ED staff regarding any improvements or changes that would assist with their implementation of the Ohio Emergency and Acute Care Facility OOCS Prescribing Guidelines.

Interviews

Semi-structured interviews with ED staff were conducted to gain an in-depth understanding of prescribing issues in the ED regarding OOCS in different geographical settings. ED staff were recruited through the survey. Respondents were also asked to identify any other staff members or key individuals that should be interviewed. It was estimated that 15 to 30 interviews would be conducted to reach saturation, based on previous studies.22,23

The interview guide was based on the CFIR to explore all issues related to the implementation of the OOCS prescribing guidelines.13 The CFIR has been used extensively to retrospectively evaluate the implementation of an intervention to provide a working hypothesis to explain success or failure.14-16 All interviews were conducted over the telephone and audio recorded. Interviews lasted between 30 to 60 minutes and field notes were taken to augment interview data.
Data Analysis

Surveys

All survey data were managed using REDCap electronic data capture tools hosted at Cincinnati Children's Hospital Medical Center. REDCap is a secure, web-based application designed to support data capture for research studies, providing: (1) an intuitive interface for validated data entry; (2) audit trails for tracking data manipulation and export procedures; (3) automated export procedures for seamless data downloads to common statistical packages; and (4) procedures for importing data from external sources.

One response from each hospital was included in the analysis. This included the person identified as the most appropriate to complete the survey. If that person was unable to complete the survey, responses from the next senior ED physician was included. Hospitals were classified as being urban or rural based on the Federal Office of Rural Health Policy definition. Hospitals were grouped into north-west, north-east, central, south-west, and south-east region based on those previously used by the Ohio Department of Health. All descriptive statistics were analyzed using Stata SE 13.1 (StataCorp, College Station, TX).

Interviews

Interview data were transcribed and analyzed in NVivo 10 (QSR International, Burlington, MA) and coded using a scheme of inductively determined labels pertaining to OOSC prescribing in ED and related topics. Concordant processes of memoing on codes (and data tagged with specific codes) enabled the elaboration of codes and the clustering of related codes into categories. Constant comparative analysis was used to move back and forth among the data to refine codes and categories. This process was undertaken by two independent researchers (JP and CC) and then relayed back to the research team for consensus.
IV. Results

Demographics

Although 164 hospitals were identified for this study, one had closed when the study commenced. Hence, 163 hospitals were contacted to participate in this study. Of these 163 hospitals, 150 EDs responded to the survey, giving a response rate of 92%. In total, 57% of respondents were from urban hospitals and 43% were from rural hospitals. For 79% of the hospitals, the ED Medical Director completed the survey, as can be seen in Table 1. Otherwise, an ED physician, nursing director, or pharmacist completed the survey.

Table 1. Survey respondent’s position

<table>
<thead>
<tr>
<th>Position</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED Medical Director</td>
<td>119 (79.3%)</td>
</tr>
<tr>
<td>ED Physician</td>
<td>19 (12.7%)</td>
</tr>
<tr>
<td>Nursing Director</td>
<td>9 (6.0%)</td>
</tr>
<tr>
<td>Pharmacist</td>
<td>3 (2.0%)</td>
</tr>
<tr>
<td>Total</td>
<td>150 (100%)</td>
</tr>
</tbody>
</table>

OOCS Policy

A third of hospitals (49/150) reported that their ED had an OOCS prescribing policy. Altogether, 75% (112/150) of hospitals had an OOCS prescribing policy, were adopting one, or were implementing guidelines without a specific policy, as shown in Table 2. Hospitals in the central region were the most likely to have an OOCS prescribing policy, were adopting one, or were implementing guidelines without a specific policy (95%, 20/21). On the contrary, hospitals in the north-east region were the most likely to not have an OOCS prescribing policy (33%, 16/48).
Table 2. Opioid and other controlled substance prescribing policy by region

<table>
<thead>
<tr>
<th>Hospitals that:</th>
<th>North-west, N=34</th>
<th>North-east, N=48</th>
<th>Central, N=21</th>
<th>South-west, N=32</th>
<th>South-east, N=15</th>
<th>Total, N=150</th>
</tr>
</thead>
<tbody>
<tr>
<td>N (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has a policy</td>
<td>13 (38.2%)</td>
<td>14 (29.2%)</td>
<td>10 (47.6%)</td>
<td>6 (18.8%)</td>
<td>6 (40.0%)</td>
<td>49 (32.7%)</td>
</tr>
<tr>
<td>In the process of adopting one</td>
<td>1 (2.9%)</td>
<td>1 (2.1%)</td>
<td>1 (4.8%)</td>
<td>3 (9.4%)</td>
<td>2 (13.3%)</td>
<td>8 (5.3%)</td>
</tr>
<tr>
<td>Implementing prescribing guidelines without adopting a specific policy</td>
<td>16 (29.4%)</td>
<td>16 (33.3%)</td>
<td>9 (42.9%)</td>
<td>17 (53.1%)</td>
<td>3 (20.0%)</td>
<td>55 (36.7%)</td>
</tr>
<tr>
<td>Does not have a policy</td>
<td>16 (14.7%)</td>
<td>16 (33.3%)</td>
<td>1 (4.8%)</td>
<td>6 (18.8%)</td>
<td>4 (26.7%)</td>
<td>32 (21.3%)</td>
</tr>
<tr>
<td>Not sure</td>
<td>1 (14.7%)</td>
<td>1 (2.1%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>6 (4.0%)</td>
</tr>
</tbody>
</table>

Basis of Policy

Of the 112 emergency departments that had a policy, were adopting one, or were implementing guidelines without a specific policy, 72% based their practices on the Ohio Emergency and Acute Care Facility OOCs Prescribing Guidelines. By region, hospitals in the central region were the most likely to use the Ohio prescribing guidelines (85%, 17/20) while hospitals in the south-east were the least likely (45%, 5/11). Hospitals in the north-west, north-east, and south-west region reported using the Ohio prescribing guidelines in 67% (16/24), 74% (23/31), and 77% (20/26) of their hospitals respectively.

Respondents were able to select more than one guideline as the basis of their policy. Results regarding the use of additional guidelines are displayed in Table 3.

Table 3. Basis of opioid and other controlled substance prescribing policies

<table>
<thead>
<tr>
<th>Common Opioid Prescribing Guidelines</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ohio Emergency and Acute Care Facility Opioids and Other Controlled Substances Prescribing Guidelines</td>
<td>81 (72.3%)</td>
</tr>
<tr>
<td>American College of Emergency Physicians guidelines</td>
<td>38 (33.9%)</td>
</tr>
<tr>
<td>CDC Guideline for Prescribing Opioids for Chronic Pain</td>
<td>32 (28.6%)</td>
</tr>
<tr>
<td>American Academy of Emergency Medicine guidelines</td>
<td>15 (13.4%)</td>
</tr>
<tr>
<td>Other</td>
<td>7 (6.3%)</td>
</tr>
</tbody>
</table>
Implementation of OOCS Policy

The most common methods used to implement the OOCS policy were developing education materials for ED staff, adapting them locally to their patient population, and using local opinion leaders to encourage their implementation, as seen in Table 4 and in Figure 2.

Table 4. Implementation strategies used for OOCS prescribing policies (n=106)

<table>
<thead>
<tr>
<th>Implementation strategy</th>
<th>Yes</th>
<th>In Planning</th>
<th>No</th>
<th>Do Not Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developed educational materials for your ED staff</td>
<td>63.2%</td>
<td>7.6%</td>
<td>27.4%</td>
<td>1.9%</td>
</tr>
<tr>
<td>Adapted them locally to the patient population</td>
<td>62.9%</td>
<td>5.7%</td>
<td>28.6%</td>
<td>2.9%</td>
</tr>
<tr>
<td>Used local opinion leaders</td>
<td>54.7%</td>
<td>2.8%</td>
<td>37.7%</td>
<td>4.7%</td>
</tr>
<tr>
<td>Appointed an individual or team responsible for implementing them</td>
<td>45.3%</td>
<td>8.5%</td>
<td>43.4%</td>
<td>2.8%</td>
</tr>
<tr>
<td>Used 1-on-1 educational sessions with your ED staff</td>
<td>40.6%</td>
<td>0.7%</td>
<td>51.9%</td>
<td>1.9%</td>
</tr>
<tr>
<td>Used decision-support systems or other reminders</td>
<td>39.6%</td>
<td>5.7%</td>
<td>50.9%</td>
<td>3.8%</td>
</tr>
<tr>
<td>Hosted group didactic education sessions</td>
<td>38.7%</td>
<td>6.6%</td>
<td>50.9%</td>
<td>3.8%</td>
</tr>
<tr>
<td>Hosted interactive education sessions</td>
<td>23.6%</td>
<td>6.6%</td>
<td>67.9%</td>
<td>1.9%</td>
</tr>
<tr>
<td>Conducted audit and feedback</td>
<td>20.8%</td>
<td>17.0%</td>
<td>61.3%</td>
<td>0.9%</td>
</tr>
<tr>
<td>Used incentives</td>
<td>11.4%</td>
<td>1.9%</td>
<td>83.8%</td>
<td>2.9%</td>
</tr>
<tr>
<td>Used administrative interventions (e.g., required additional approval to prescribe opioids)</td>
<td>3.9%</td>
<td>3.9%</td>
<td>89.3%</td>
<td>2.9%</td>
</tr>
<tr>
<td>Used penalties</td>
<td>1.9%</td>
<td>1.9%</td>
<td>93.4%</td>
<td>2.8%</td>
</tr>
</tbody>
</table>
Figure 2. Implementation strategies used for OOCS prescribing policies (n=106)

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Yes (%)</th>
<th>In Planning (%)</th>
<th>No (%)</th>
<th>Do Not Know (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developed educational materials for your ED staff</td>
<td>63</td>
<td>8</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>Adapted them locally to the patient population</td>
<td>63</td>
<td>6</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>Used local opinion leaders</td>
<td>55</td>
<td>3</td>
<td>38</td>
<td></td>
</tr>
<tr>
<td>Appointed an individual or team responsible for implementing them</td>
<td>45</td>
<td>9</td>
<td>43</td>
<td></td>
</tr>
<tr>
<td>Used 1-on-1 educational sessions with your ED staff</td>
<td>41</td>
<td>6</td>
<td>52</td>
<td></td>
</tr>
<tr>
<td>Used decision-support systems or other reminders</td>
<td>40</td>
<td>6</td>
<td>51</td>
<td></td>
</tr>
<tr>
<td>Hosted group didactic education sessions</td>
<td>39</td>
<td>7</td>
<td>51</td>
<td></td>
</tr>
<tr>
<td>Hosted interactive education sessions</td>
<td>24</td>
<td>7</td>
<td>68</td>
<td></td>
</tr>
<tr>
<td>Conducted audit and feedback</td>
<td>21</td>
<td>17</td>
<td>61</td>
<td></td>
</tr>
<tr>
<td>Used incentives</td>
<td>11</td>
<td>2</td>
<td>84</td>
<td></td>
</tr>
<tr>
<td>Used administrative interventions</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Used penalties</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>
Impact of Ohio OOCS Prescribing Guidelines

Of the responding hospitals that had an OOCS prescribing policy, were adopting one, or were implementing guidelines without a specific policy, the majority strongly agreed/agreed that the Ohio OOCS prescribing guidelines increased the use of the OARRS prescription monitoring program (86%) and reduced inappropriate opioid prescribing (71%), as seen in Table 5 and in Figure 3. Respondents provided a mixed opinion for the remaining potential benefits.

Table 5. Perceived impact of Ohio OOCS prescribing guidelines

<table>
<thead>
<tr>
<th>Impact of the Ohio OOCS prescribing guidelines</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree nor Disagree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Do Not Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased the use of the OARRS prescription monitoring program (n=106)</td>
<td>42.5%</td>
<td>43.4%</td>
<td>4.7%</td>
<td>2.8%</td>
<td>3.8%</td>
<td>2.8%</td>
</tr>
<tr>
<td>Reduced inappropriate opioid prescribing (n=105)</td>
<td>9.5%</td>
<td>61.9%</td>
<td>17.1%</td>
<td>5.7%</td>
<td>2.9%</td>
<td>2.9%</td>
</tr>
<tr>
<td>Reduced the conflict between patients and ED staff regarding opioids (n=106)</td>
<td>15.1%</td>
<td>33.0%</td>
<td>16.0%</td>
<td>22.6%</td>
<td>10.4%</td>
<td>2.8%</td>
</tr>
<tr>
<td>Reduced the number of patients requesting opioids inappropriately (n=106)</td>
<td>11.3%</td>
<td>32.1%</td>
<td>16.0%</td>
<td>23.6%</td>
<td>9.4%</td>
<td>7.6%</td>
</tr>
<tr>
<td>Increased physician satisfaction (n=105)</td>
<td>6.7%</td>
<td>36.2%</td>
<td>34.3%</td>
<td>8.6%</td>
<td>7.6%</td>
<td>6.7%</td>
</tr>
<tr>
<td>Increased nurse satisfaction (n=105)</td>
<td>5.7%</td>
<td>32.4%</td>
<td>32.4%</td>
<td>11.4%</td>
<td>7.6%</td>
<td>10.5%</td>
</tr>
<tr>
<td>Reduced inappropriate use of the ED (n=105)</td>
<td>2.9%</td>
<td>35.2%</td>
<td>25.7%</td>
<td>21.0%</td>
<td>10.5%</td>
<td>4.8%</td>
</tr>
<tr>
<td>Allowed staff to focus more on emergent conditions (n=106)</td>
<td>3.8%</td>
<td>14.2%</td>
<td>46.2%</td>
<td>21.7%</td>
<td>9.4%</td>
<td>4.7%</td>
</tr>
</tbody>
</table>
Figure 3. Perceived impact of Ohio OOCS prescribing guidelines

- Increased the use of the OARRS prescription monitoring program (n=106)
- Reduced inappropriate opioid prescribing (n=105)
- Reduced the conflict between patients and ED staff regarding opioids (n=106)
- Reduced the number of patients requesting opioids inappropriately (n=106)
- Increased physician satisfaction (n=105)
- Increased nurse satisfaction (n=105)
- Reduced inappropriate use of the ED (n=105)
- Allowed staff to focus more on emergent conditions (n=106)

Strongly agree/Agree
Neither agree nor disagree, disagree or strongly disagree
Do not know
Emergency Department Practices

Acute pain management

For the management of acute pain, respondents rarely used IV meperidine, provided a prescription for long-acting or controlled release opioids, or replaced those that were lost, destroyed or stolen. However, one third of respondents (36%) reported writing opioid prescription for more than 3 days for 5% or more of their acute pain patients. Table 6 and Figure 4 show the complete results for this question.

Table 6. Acute pain management practices

<table>
<thead>
<tr>
<th>Percentage of acute pain patients receiving the following in the last month:</th>
<th>Never</th>
<th>1-4%</th>
<th>5-24%</th>
<th>25-49%</th>
<th>≥50%</th>
<th>Do Not Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV meperidine (Demerol®, n=134)</td>
<td>85.1%</td>
<td>9.7%</td>
<td>3.7%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>1.5%</td>
</tr>
<tr>
<td>Prescription for long-acting or controlled-release opioids (e.g., OxyContin®, fentanyl patches, and methadone, n=134)</td>
<td>82.1%</td>
<td>13.4%</td>
<td>1.5%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>3.0%</td>
</tr>
<tr>
<td>Prescription for opioids to replace those that were lost, destroyed, or stolen? (n=134)</td>
<td>67.9%</td>
<td>23.1%</td>
<td>3.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>6.0%</td>
</tr>
<tr>
<td>Prescription for opioids for more than 3 day supply? (n=132)</td>
<td>22.7%</td>
<td>37.1%</td>
<td>22.7%</td>
<td>11.4%</td>
<td>2.3%</td>
<td>3.8%</td>
</tr>
</tbody>
</table>

Figure 4. Acute pain management practices
Survey respondents also commented on the difficulty of limiting opioid prescriptions to a 3 day supply. Although many said this was ideal, they also said it was not realistic considering long weekends or difficulty scheduling timely follow-ups.

“The illusion of folks being able to get in to see their PCP (if they have one) in a timely manner is just that. It is not realistic.” (Survey respondent)

“[The guidelines] fail to consider acutely injured patient with fractures or other painful conditions over long weekends, national holiday weekends, etc. Limitation to a 3 day supply is not a useful limit.” (Survey respondent)
Chronic pain management

For the management of chronic pain, respondents rarely used IV meperidine, provided a prescription for long-acting or controlled release opioids, replaced those that were lost, destroyed or stolen, or for doses of Suboxone®, Subutex® or methadone for those in a treatment program. However, over 63% of respondents reported using IM or IV opioids in 5% or more of their chronic pain patients. Also, just over 35% of respondents provided a prescription for opioids to patients who have received an opioid prescription from another provider and 30% who had previously presented with the same problem in the last month in 5% or more of their chronic pain patients. The complete results for this question can be viewed in Table 7 and in Figure 5.

<table>
<thead>
<tr>
<th>Percentage of chronic pain patients receiving the following in the last month:</th>
<th>Never</th>
<th>1-4%</th>
<th>5-24%</th>
<th>25-49%</th>
<th>≥50%</th>
<th>Do Not Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV meperidine (Demerol®, n=134)</td>
<td>88.1%</td>
<td>8.2%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>3.7%</td>
</tr>
<tr>
<td>Replacement doses of Suboxone®, Subutex® or methadone for those in a treatment program (n=133)</td>
<td>91.0%</td>
<td>3.8%</td>
<td>0.8%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>4.5%</td>
</tr>
<tr>
<td>Prescription for opioids to patients who have previously presented with the same problem in the last month (n=133)</td>
<td>15.2%</td>
<td>48.5%</td>
<td>22.7%</td>
<td>6.8%</td>
<td>0.0%</td>
<td>6.8%</td>
</tr>
<tr>
<td>Prescription for opioids to patients who have received an opioid prescription from another provider within the last month (n=134)</td>
<td>20.3%</td>
<td>36.8%</td>
<td>27.1%</td>
<td>6.8%</td>
<td>1.5%</td>
<td>7.5%</td>
</tr>
<tr>
<td>Prescription for long-acting or controlled-release opioids (e.g., OxyContin®, fentanyl patches, and methadone, n=134)</td>
<td>84.3%</td>
<td>11.9%</td>
<td>0.8%</td>
<td>0.8%</td>
<td>0.0%</td>
<td>2.2%</td>
</tr>
<tr>
<td>Prescription for opioids to replace those that were lost, destroyed or stolen (n=133)</td>
<td>72.9%</td>
<td>19.6%</td>
<td>2.3%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>5.3%</td>
</tr>
<tr>
<td>Prescription for opioids for more than 3 day supply (n=134)</td>
<td>38.8%</td>
<td>32.1%</td>
<td>17.2%</td>
<td>7.5%</td>
<td>0.0%</td>
<td>4.5%</td>
</tr>
<tr>
<td>IM or IV opioids (n=134)</td>
<td>4.5%</td>
<td>25.4%</td>
<td>38.8%</td>
<td>17.9%</td>
<td>6.8%</td>
<td>6.7%</td>
</tr>
</tbody>
</table>
Survey respondents and interviewees also commented on the difficulty of treating patients from another provider without appropriate guidance and reducing IV and IM opioids in the ED.

“We do get a problem in the ED where patients who do get pain chronically are told ‘go to the ED if you have any problems’ and we don’t have any guidelines from those physicians on what to do with them.” (Interview 9)

“The other thing that is a little difficult is the discouraged use of IM or IV medications … [due to] time constraint and not a lot of other oral options.” (Survey respondent)

“We can’t really give someone a pill if they’re coming in for evaluation of abdominal pain or they’re vomiting.” (Interview 4)
Opioid prescribing procedure

The majority of survey respondents reported that they do not routinely follow the complete Ohio OOCS prescribing guidelines to assist their prescribing practices. Over 80% of respondents reported that they never get patients to sign a pain agreement for those given an opioid prescription when leaving the ED. In addition, 45% of respondents reported that they never receive a consultation from the hospital’s palliative or pain service. Table 8 and Figure 6 contain the complete results for this question.

Interviewees commented on the difficulty of receiving a consultation from the hospital’s palliative or pain service and the need for increased patient responsibility and education materials.

“I dare say that requesting a consultation from our palliative or pain service in the emergency department would be 100% routinely rejected. Every place I’ve ever been, […] they are just not engaged in that” (Interview 1)

“Pain management clinics often are not cooperative about seeing chronic pain patients, and in fact our local pain management clinic complains that the ED refers them chronic pain patients publicly.” (Survey respondent)

“I think a patient education handout that says the same things [as the guidelines] in a simpler manner given to patients would be even more useful.” (Interview 8)

Additionally, interviewees commented that they do not believe OARRS is necessary for all patients.

“Obviously there are some pain complaints that we are going to treat whether or not you have a history of opioid use.” (Interview 9)

“If they have an acute, painful, objective medical condition, it should probably be treated. On the other hand, if they are coming to you with fibromyalgia or back pain that they’ve been in 20 times for, I’m not gonna – I don’t need to check OARRS to know that I’m not gonna give them narcotics for that.” (Interview 15)
Table 8. Opioid prescribing procedure

<table>
<thead>
<tr>
<th>Percentage of patients given an opioid prescription receiving the following in the last month:</th>
<th>&gt;95%</th>
<th>75-95%</th>
<th>50-74%</th>
<th>25-49%</th>
<th>10-24%</th>
<th>1-4%</th>
<th>Never</th>
<th>Do not know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written information on their addictive nature (n=130)</td>
<td>24.0%</td>
<td>10.1%</td>
<td>3.1%</td>
<td>7.8%</td>
<td>3.9%</td>
<td>12.4%</td>
<td>24.0%</td>
<td>14.7%</td>
</tr>
<tr>
<td>Written information on their potential dangers of misuse (n=132)</td>
<td>23.9%</td>
<td>10.0%</td>
<td>2.3%</td>
<td>7.7%</td>
<td>3.9%</td>
<td>16.2%</td>
<td>23.9%</td>
<td>12.3%</td>
</tr>
<tr>
<td>Confirmed identity by photo ID (n=132)</td>
<td>23.7%</td>
<td>17.6%</td>
<td>3.8%</td>
<td>1.5%</td>
<td>6.9%</td>
<td>3.1%</td>
<td>17.6%</td>
<td>27.0%</td>
</tr>
<tr>
<td>Written information on their appropriate storage and disposal (n=132)</td>
<td>18.5%</td>
<td>3.1%</td>
<td>2.3%</td>
<td>6.2%</td>
<td>6.2%</td>
<td>10.8%</td>
<td>33.1%</td>
<td>20.0%</td>
</tr>
<tr>
<td>Searched Ohio Automated Rx Reporting System (OARRS) (n=134)</td>
<td>12.0%</td>
<td>24.8%</td>
<td>20.3%</td>
<td>18.8%</td>
<td>12.8%</td>
<td>6.0%</td>
<td>0.8%</td>
<td>4.5%</td>
</tr>
<tr>
<td>Written information on the facility’s position regarding the prescribing of opioids (n=131)</td>
<td>5.4%</td>
<td>4.7%</td>
<td>3.9%</td>
<td>10.1%</td>
<td>14.0%</td>
<td>10.9%</td>
<td>34.1%</td>
<td>17.1%</td>
</tr>
<tr>
<td>Medical and prescription records obtained from other hospitals or providers’ offices (n=133)</td>
<td>5.3%</td>
<td>6.1%</td>
<td>6.1%</td>
<td>12.9%</td>
<td>18.2%</td>
<td>29.6%</td>
<td>12.1%</td>
<td>9.9%</td>
</tr>
<tr>
<td>For patients who visit the ED frequently, a case review or case management (n=133)</td>
<td>1.5%</td>
<td>13.6%</td>
<td>3.8%</td>
<td>9.9%</td>
<td>15.9%</td>
<td>22.7%</td>
<td>22.7%</td>
<td>9.9%</td>
</tr>
<tr>
<td>Consultation from the hospital’s palliative or pain service (n=133)</td>
<td>0.8%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>1.5%</td>
<td>7.6%</td>
<td>37.9%</td>
<td>44.7%</td>
<td>7.6%</td>
</tr>
<tr>
<td>Patients signed a pain agreement that outlines the expectations of the emergency clinician (n=131)</td>
<td>0.8%</td>
<td>0.8%</td>
<td>0.0%</td>
<td>0.8%</td>
<td>2.3%</td>
<td>10.5%</td>
<td>81.2%</td>
<td>3.8%</td>
</tr>
<tr>
<td>For chronic pain patients, contacted their routine opioid prescriber (n=134)</td>
<td>0.8%</td>
<td>0.8%</td>
<td>6.8%</td>
<td>12.0%</td>
<td>25.6%</td>
<td>40.6%</td>
<td>5.3%</td>
<td>8.3%</td>
</tr>
<tr>
<td>Completed urine or other drug screen (n=134)</td>
<td>0.8%</td>
<td>3.0%</td>
<td>2.3%</td>
<td>5.3%</td>
<td>27.8%</td>
<td>37.6%</td>
<td>12.0%</td>
<td>11.3%</td>
</tr>
</tbody>
</table>
Figure 6. Opioid prescribing procedure

- Written information on their addictive nature (n=130):
  - ≥95%: 24%
  - 5-95%: 25%
  - 0-4%: 36%
  - Do not know: 1%

- Written information on their potential dangers of misuse (n=132):
  - ≥95%: 24%
  - 5-95%: 24%
  - 0-4%: 40%
  - Do not know: 1%

- Confirmed identity by photo ID (n=132):
  - ≥95%: 24%
  - 5-95%: 30%
  - 0-4%: 21%
  - Do not know: 2%

- Written information on their appropriate storage and disposal (n=132):
  - ≥95%: 18%
  - 5-95%: 18%
  - 0-4%: 44%
  - Do not know: 2%

- Searched Ohio Automated Rx Reporting System (OARRS) (n=134):
  - ≥95%: 12%
  - 5-95%: 77%
  - 0-4%: 7%
  - Do not know: 2%

- Written information on the facility’s position regarding the prescribing of opioids (n=131):
  - ≥95%: 5%
  - 5-95%: 33%
  - 0-4%: 45%
  - Do not know: 1%

- Medical and prescription records obtained from other hospitals or providers’ offices (n=133):
  - ≥95%: 5%
  - 5-95%: 43%
  - 0-4%: 42%
  - Do not know: 1%

- For patients who visit the ED frequently, a case review or case management (n=133):
  - ≥95%: 2%
  - 5-95%: 43%
  - 0-4%: 45%
  - Do not know: 2%

- Consultation from the hospital’s palliative or pain service (n=133):
  - ≥95%: 9%
  - 5-95%: 83%
  - 0-4%: 1%
  - Do not know: 1%

- Patients signed a pain agreement that outlines the expectations of the emergency clinician (n=131):
  - ≥95%: 1%
  - 5-95%: 4%
  - 0-4%: 92%
  - Do not know: 1%

- For chronic pain patients, contacted their routine opioid prescriber (n=134):
  - ≥95%: 1%
  - 5-95%: 45%
  - 0-4%: 46%
  - Do not know: 1%

- Completed urine or other drug screen (n=134):
  - ≥95%: 1%
  - 5-95%: 38%
  - 0-4%: 50%
  - Do not know: 1%
**High risk of opioid overdose patients**

Although the use of naloxone is not included in the Ohio OOSC prescribing guidelines, it was an emerging area of interest. In total, 56% (74/132) of survey respondents reported that they never provide naloxone or a prescription for naloxone to high risk opioid overdose patients. Additional details can be seen in Table 9 and in Figure 7.

**Table 9. Naloxone practices for high risk opioid overdose patients**

<table>
<thead>
<tr>
<th>Percentage of high risk opioid overdose patients receiving the following in the last month:</th>
<th>&gt;95%</th>
<th>75-95%</th>
<th>50-74%</th>
<th>25-49%</th>
<th>5-24%</th>
<th>1-4%</th>
<th>Never</th>
<th>Do not know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naloxone to take home that is not part of a Project DAWN kit (n=131)</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>1.5%</td>
<td>2.3%</td>
<td>5.3%</td>
<td>80.9%</td>
<td>9.9%</td>
</tr>
<tr>
<td>Naloxone to take home that is part of a Project DAWN kit (Deaths Avoided With Naloxone) (n=133)</td>
<td>0.0%</td>
<td>0.0%</td>
<td>1.5%</td>
<td>0.8%</td>
<td>4.5%</td>
<td>3.8%</td>
<td>77.4%</td>
<td>12.0%</td>
</tr>
<tr>
<td>A prescription for naloxone (n=132)</td>
<td>0.0%</td>
<td>1.5%</td>
<td>2.3%</td>
<td>0.8%</td>
<td>8.3%</td>
<td>17.4%</td>
<td>57.6%</td>
<td>12.1%</td>
</tr>
</tbody>
</table>

**Figure 7. Naloxone practices for high risk opioid overdose patients**

Some survey respondents commented on their discomfort with giving naloxone.

“Ultimately, [addiction] is the individual’s problem...naloxone is in a way promoting [addiction].” (Survey respondent)
Communication with other providers

Survey respondents reported that they regularly communicate with community care providers, primarily electronically, as can be viewed in Table 10 and in Figure 8. However, 38% reported that they do not regularly communicate to other emergency or acute care facilities about pain patients that frequently visit their ED.

Table 10. Communication practices with other providers

<table>
<thead>
<tr>
<th>Percentage of respondents that communicate to the following regarding pain patients who frequently visit the ED:</th>
<th>Paper or fax</th>
<th>Electronic</th>
<th>Both</th>
<th>We do not provide this information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community care providers (n=133)</td>
<td>14.3%</td>
<td>51.9%</td>
<td>20.3%</td>
<td>13.5%</td>
</tr>
<tr>
<td>Other emergency or acute care facilities that they visit (n=130)</td>
<td>20.8%</td>
<td>35.4%</td>
<td>6.2%</td>
<td>37.7%</td>
</tr>
</tbody>
</table>

Figure 8. Communication practices with other providers

- Community care providers (n=133)
  - Paper or fax: 14%
  - Electronic: 52%
  - Both: 20%
  - We do not provide this information: 14%

- Other emergency or acute care facilities that they visit (n=130)
  - Paper or fax: 21%
  - Electronic: 35%
  - Both: 6%
  - We do not provide this information: 38%
Barriers and facilitators for implementing the guidelines

In total, 16 interviews were conducted with 8 ED physicians and 8 ED medical directors. Interviewees worked at a range of hospitals, including 9 located in urban regions and 7 in rural regions.

Main themes included organizational responsibility, OARRS utilization, patient satisfaction scores, and patient involvement. Numerous barriers and facilitators were identified for each theme with some suggested future strategies (Table 11). One hospital system had also implemented a “Think Twice” campaign to ensure physicians considered alternative treatments before prescribing opioids (Appendix A).

Organizational responsibility

Many physicians expressed concern that the burden of these guidelines fell on ED physicians and not on other parts of the hospital or community. Support from administration was seen as especially important in reducing this burden.

“Since facilities are always trying to minimize their expenses and dump the responsibility on people already there [particularly ED physicians]. This is an area of significant concern.” (Interview 1)

“Unless there's some sort of a carrot or stick for this, it's very difficult to get [the guidelines] implemented at some facilities. And I'm talking about administrative support. Because the ER doctors are on-board with this.” (Interview 2)

“[I think we need to] have somebody own the progress, saying, ‘look, I’m going to own that we’re going to have 20% fewer opioid deaths next year than this year.’ Who’s going to own that? I haven’t seen somebody at the system level own that.” (Interview 7)
“We had a placard at the sign-in area of the emergency department that we were forced by hospital administration to take down about a year and a half ago. It related to those very same principles [as are found in the guidelines], but because of concerns from our hospital legal department […] they forced us to take them down.” (Interview 1)

OARRS utilization

Throughout the survey responses and interviews, physicians were generally positive about OARRS and saw it as an important step in the right direction. That being said, inefficiencies in OARRS were the most commonly cited barrier to full implementation of the guidelines.

“Because there are so many fields. […] 12 fields. Not key strokes but fields. […], Especially when people interrupt you when you're trying to type in the OARRS information because there's no autofill. I may transpose the month and the day. So, instead of 02/05/1967, it's 05/02/1967, and guess what, OARRS is clean. But it was my error. […] So even if I did it, the state doesn't see that I did it, because I made a mistake.” (Interview 10)

“I would say that the OARRS should be mandated to pharmacy because it's a secretarial function, it is not a clinical function. It is a piece of data that I should integrate into my clinical decision making. But obtaining the report is not a clinical function, so why is the physician doing it?” (Interview 10)
Many physicians brought up other programs which access OARRS data but offer a summary or a more efficient way to access the data. Cost was seen as the major barrier to hospitals purchasing these other programs.

“NARxCHECK actually takes the information, does analytics, and basically gives you information that’s useful. So it tells you if they have an active prescription, if they have a bunch of overlapping prescriptions in different pharmacies. It gives you an idea of if they’re at high risk for abuse. And it pulls in the information from OARRS. So I can still look at it and say, ‘Okay, this person does have a high score, but they’ve been going to the same prescriber.’” (Interview 4, NARxCHECK program shown in Appendix B)

Additionally, there was some frustration in the use of OARRS to evaluate physician compliance with guidelines.

One of the incendiary events was when the State Board of Pharmacy sent out the thousands of letters to physicians, chastising them on not doing OARRS searches, when in fact my emergency department typically does not prescribe beyond seven days. But that was not factored into the letters… [Also] did they find out if a nurse practitioner, or PA, working with me did the OARRS before I wrote the prescription? (Interview 10)
Table 11. Major themes identified from interview participants

<table>
<thead>
<tr>
<th>Major themes</th>
<th>Barriers</th>
<th>Facilitators</th>
<th>Suggested Future Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Organizational responsibility</strong></td>
<td>Low priority by administration</td>
<td>High priority by administration</td>
<td>Increase organizational responsibility in the guidelines</td>
</tr>
<tr>
<td></td>
<td>Pressure from administration to increase patient satisfaction scores</td>
<td>Administrative commitment to prescribing guidelines</td>
<td>Reduce pressure of patient satisfaction scores (See below)</td>
</tr>
<tr>
<td></td>
<td>Policies and guidelines are aimed at ED physicians and not the organization as a whole</td>
<td>Strong community support</td>
<td>Guidelines focused on the role of others in the hospital and community</td>
</tr>
<tr>
<td></td>
<td>Lack of support from other specialties (e.g. pain services)</td>
<td>Guidelines from external organizations</td>
<td>Increase access to other specialties (e.g. pain services)</td>
</tr>
<tr>
<td></td>
<td>Legal concerns of publically announcing hospitals' stance</td>
<td></td>
<td>Identify how organizations can support the guidelines without legal recourse</td>
</tr>
<tr>
<td><strong>OARRS utilization</strong></td>
<td>Time consuming to input and retrieve data</td>
<td>Administrative support</td>
<td>State wide integration of OARRS and workflow systems</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Additional staff may retrieve OARRS report</td>
<td>Provide administrative assistance (e.g. pharmacists)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Programs that integrate OARRS into workflow system</td>
<td>Increasing access to programs that integrate OARRS into workflow systems</td>
</tr>
<tr>
<td>Legal concerns regarding show report to patients</td>
<td>Open communication with patients about their opioid prescribing history</td>
<td>Development of a patient friendly OARRS report or summary</td>
<td></td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>-------------------------------------------------------------------</td>
<td>--------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Results are difficult to interpret</td>
<td>Programs that include summaries of a patient’s OARRS data</td>
<td>Provide OARRS analytics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Objective measure to identify diversion</td>
<td>Provide summary of OARRS data</td>
<td></td>
</tr>
<tr>
<td>Inappropriate feedback regarding OARRS utilization rates</td>
<td>Programs to provide OARRS analytics</td>
<td>OARRS feedback should account for ED-specific practices</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>OARRS feedback should better account for a physician's actual prescribing practices</td>
<td></td>
</tr>
</tbody>
</table>

**Patient satisfaction scores (p. 34)**

<table>
<thead>
<tr>
<th>Patient satisfaction scores include pain management</th>
<th>Feedback on the opioid prescribing habits of physicians relative to their peers and coworkers</th>
<th>Increase organizational responsibility regarding opioid prescribing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physician remuneration linked to patient satisfaction scores</td>
<td>Guidelines from external organizations</td>
<td>Identify expected change on patient satisfaction scores when reducing opioid prescribing</td>
</tr>
<tr>
<td>Administration encourage pain relief to increase patient satisfaction scores</td>
<td>Administrative commitment to reduce opioid prescribing</td>
<td></td>
</tr>
</tbody>
</table>

**Patient involvement (p. 35)**

<table>
<thead>
<tr>
<th>Lack of patient-friendly material</th>
<th>Physician support of patient involvement</th>
<th>Development of patient-friendly material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of availability of other specialties (e.g. pain services)</td>
<td>Guidelines from external organizations</td>
<td>Increase access to other specialties (e.g. pain services)</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>----------------------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>Patient expectations for opioids</td>
<td>Increased public awareness of opioid epidemic</td>
<td>Increased emphasis on patient pain agreements</td>
</tr>
<tr>
<td>Legal concerns of publically announcing hospitals' stance</td>
<td>OARRS reports</td>
<td>Identify how organizations can support the guidelines without legal recourse</td>
</tr>
</tbody>
</table>

**Patients may deceive physicians**

**Guideline utilization (Other, p. 35)**

<table>
<thead>
<tr>
<th>As above</th>
<th>As above</th>
<th>Provide information and evidence of alternate therapies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Develop pediatric specific guidelines</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Develop simplified version of the guidelines to provide to patients</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Separate verifiable and non-verifiable pain</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Use decisive language that maintains flexibility in guidelines</td>
</tr>
</tbody>
</table>
Patient satisfaction scores

In the interviews and the survey, many physicians saw patient satisfaction scores as a major barrier to the implementation of opioid prescribing guidelines. This included doctors worrying about their own income being affected by low patient satisfaction scores, but it also included pressure from administration to improve patient satisfaction scores.

“*I think every emergency physician knows that the pain question [in the patient satisfaction survey] is an obvious problem in the opioid problem. I mean, reimbursement based on whether or not we prescribe pain medication or treat people’s pain is, I think, detrimental to the health of the nation*” (Interview 4)

“*Hospitals want patient satisfaction scores to be high. Pain patients are quick to complain which makes administration very unhappy.*” (Survey respondent)

“*People were really worried that if they didn't prescribe pain medicine, that the patient's satisfaction would suffer. And we haven't seen that. So I think that was very helpful to demonstrate to people that that's not the issue of what patients are concerned about*” (Interview 14)
Patient involvement

Communication with patients was a major and important theme throughout the interviews. Physicians described the guidelines as aiding in communication with patients. For this reason, many physicians wanted patient accessible information (that had already been approved through legal departments) that could describe opioid prescribing guidelines to patients.

“I know patients will give us a hard time and demand medication. They’ll get angry if they don’t get what they want.” (Interview 5)

“I think [the guidelines are] good for physicians. I think maybe a patient education handout that says the same things in a simpler manner given to patients would be even more useful.” (Interview 8)

Guideline utilization (Other)

Some physicians wanted the guidelines to be more specific and take a stronger stance against opioid prescribing in general. That being said, the flexibility in the guidelines was very important to respondents. Some physicians wanted information that offered more concrete alternatives to opioids when treating pain (See Appendix A: Think Twice Campaign).

“It’s not specific or aggressive enough for the destruction and death that we’re facing on a day to day basis. It sounds like it was written by a politician and not somebody that’s working actively in ERs.” (Interview 7)

“[I think the guidelines needs more] alternative treatment options. …options to say, ‘Okay, well I’m not gonna do that. But what am I gonna do? Here’s what I can do. I can do all these things.’” (Interview 4)
“If you changed the ‘should’s to ‘must’s […] then I would have a lot of problems here. [LAUGH] But as it now stands I think [the guidelines are] pretty sensible.”

(Interview 15)

V. Conclusion

A large majority of hospitals reported having an OOCS prescribing policy, being in the process of adopting one, or implementing guidelines without a specific policy. Of these hospitals, 72% were following the Ohio Emergency and Acute Care Facility OOCS Prescribing Guidelines.

Although the Ohio OOCS prescribing guidelines are strongly supported by ED physicians, many believed more organizational responsibility with increased access to other specialties was needed. In particular, respondents that did not have administrative support or were incentivized to increase their patient satisfaction scores felt particularly discouraged from implementing the guidelines.

Many respondents also strongly valued OARRS and believed it assists their opioid prescribing practice and conversations with patients. However, great variability was reported on how often hospitals generated OARRS reports for patients prescribed an opioid. This may occur as OARRS is considered administratively cumbersome, inefficient, and difficult to interpret. As such, many respondents felt they needed additional administrative assistance in generating OARRS reports or wanted a state-wide adoption of existing programs that integrate OARRS into workflow management systems.

Finally, respondents believed one of the greatest ways to address the opioid epidemic was to increase patient understanding and responsibility regarding the risks of opioids. However, 81% of respondents never ask patients to sign a pain agreement. Furthermore, 24% and 34% of respondents reported that they never gave patients written information on the addictive nature of opioids or the facility’s position regarding the prescribing of opioids respectively. Hence, many respondents wanted patient education material on the use and risk of opioids that they could give patients individually and display publically.
VI. References


Appendices

Appendix A. Think Twice Campaign 40
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Appendix C: Survey Instrument 42
Appendix D: Interview Guide 48
Appendix A. Think Twice Campaign

1. CHRONIC BENIGN HEADACHE
   - Ketorolac (Toradol)
   - Metoclopramide (Reglan) or Prochlorperazine (Compazine) or Promethazine (Phenergan)
   - Diphenhydramine (Benadryl)
   - IVF (OSNS preferred if not diabetic)
   - Sumatriptan (Imitrex)
   - Valproate for migraine
   - Injection therapy if occipital neuralgia
   - Steroids if protracted headache

2. CHRONIC NECK OR BACK PAIN
   - IM Ketorolac (Toradol) / Orphenadrine (Norflex)
   - NSAIDs
   - Muscle relaxer
   - Lidoderm patch
   - Gabapentin (Neurontin) if neurogenic origin
   - Trigger point injection

3. CHRONIC DENTAL PAIN
   - NSAIDs
   - Chlorhexidine (Peridex) mouth rinse
   - Denosumab topical
   - Antibiotic if infection
   - Muscle relaxer if TMJ
   - Dental block

4. CHRONIC JOINT PAIN
   - NSAIDs
   - Muscle relaxer
   - Lidoderm patch
   - Compression sleeve or splint prn

5. CHRONIC ABDOMINAL PAIN
   - Dicyclomine (Bentyl) or Hyoscyamine (Levsin)
   - Anti-emetic
   - Ketorolac (Toradol)
   - IV Methocarbamol (Robaxin) if NPO
   - Laxative/ stool softener if constipation
   - Lidocaine if recurrent renal colic

* Gastroesophageal reflux disease (GERD) is a reminder: all opiates are contraindicated as they slow GI transit; educate patient as needed
** Age, comorbidities, and risk/benefit ratio should be considered with any prescription order
*** Consider a custom opioid with any pain syndrome unless contraindicated
**** Unsolved behavioral health conditions often accompany somatic complaints. Please consider referral to the appropriate specialist for co-management.
Appendix B. NARxCHECK

SMITH, MIKE

NARCOTIC 501
SEDATIVE 461
STIMULANT 080

NARxCORES can range from 000 to 999. The first two digits represent the composite percentile risk based on an overall analysis of prescription drug use. The third digit represents the number of active prescriptions. The distribution of scores in the population is such that approximately 75% fall below 200, 50% fall below 500 and 95% fall below 650. The information on this report is not guaranteed as accurate or complete. This report is based on the search criteria supplied and the data entered by the dispensing pharmacy. For more information about any prescription, please contact the dispensing pharmacy of the prescriber. NARxCORES Reports are intended to aid, not replace medical decision making. None of the information presented should be used as sole justification for providing or refusing to provide medications.

Rx Graph

ALL PRESCRIBERS

Prescribers
0 - Nicolas, Molly
8 - Conlin, Desire
7 - Cartwright, Jayli
6 - Hoekwater, Alana
5 - Ollis, Debra
4 - Todd, Dave
3 - Atterra, Oleta
2 - Criswell, Mari
1 - Spencer, Diamond

Morphine Mg Eq/day

Data Analysis

Narcotics (501)
Prescribers (narcotic, sedative)
Pharmacies (narcotic, sedative)
Morphine mg
Morphine overlap (1)

Sedatives (461)

12/13/16

Appendix C: Survey Instrument

These questions will ask about the adoption and/or implementation of the Ohio Emergency and Acute Care Facility Opioids and Other Controlled Substances (OOCs) Prescribing Guidelines (referred to as the Guidelines) or other similar OOCs prescribing guidelines in your Emergency Department (ED). The Guidelines can be found at [http://www.healthy.ohio.gov/-/media/HealthyOhio/ASSETS/Files/edguidelines/EGs-no-poster.pdf?la=en](http://www.healthy.ohio.gov/-/media/HealthyOhio/ASSETS/Files/edguidelines/EGs-no-poster.pdf?la=en).

1. Demographics
   a. What position do you hold in your ED? ____________________________
   b. Is the ED you work for:  ☐0 Free standing  ☐1 Associated with a hospital
   c. Workplace name: ____________________________
   d. County: ____________________________
   e. Number of beds in your ED? __________

2a. Does your ED have an opioid and other controlled substances (OOCs) prescribing policy?
   ☐0 No (Go to → 2b)
   ☐1 In the process of adopting one (Go to → 2b)
   ☐2 Implementing prescribing guidelines without adopting a specific policy (Go to → 2b)
   ☐3 No (Go to → 4)
   ☐4 Not sure (Go to → 4)

2b. Regarding your OOCs prescribing policies, has your ED:

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>In planning</th>
<th>Do not know</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐0</td>
<td>☐1</td>
<td>☐2</td>
<td>☐3</td>
</tr>
<tr>
<td>☐0</td>
<td>☐1</td>
<td>☐2</td>
<td>☐3</td>
</tr>
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<td>☐0</td>
<td>☐1</td>
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<td>☐3</td>
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<td>☐0</td>
<td>☐1</td>
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<td>☐3</td>
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<td>☐0</td>
<td>☐1</td>
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<td>☐3</td>
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<td>☐0</td>
<td>☐1</td>
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<td>☐3</td>
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<tr>
<td>☐0</td>
<td>☐1</td>
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<td>☐3</td>
</tr>
<tr>
<td>☐0</td>
<td>☐1</td>
<td>☐2</td>
<td>☐3</td>
</tr>
</tbody>
</table>
2c. On which of the following is your OOC$S$ prescribing policy based (check all that apply):

☐ 0 the Ohio Emergency and Acute Care Facility Opioids and Other Controlled Substances (OOC$S$) Prescribing Guidelines
☐ 1 CDC Guideline for Prescribing Opioids for Chronic Pain
☐ 2 American Academy of Emergency Medicine guidelines
☐ 3 American College of Emergency Physicians guidelines
☐ 4 Other, please specify: ________________________________
☐ 5 Not applicable

2d. Why were these guidelines chosen as a basis for your ED’s OOC$S$ prescribing policy?

☐

2e. If using the Ohio Emergency and Acute Care Facility Opioids and Other Controlled Substances (OOC$S$) Prescribing Guidelines, did you make any changes to the guidelines in your policy?

☐ 0 Yes
☐ 1 No
☐ 2 Don’t know
☐ 3 Not applicable

2f. If yes, what changes were made?

☐

3. Regarding the Ohio OOC$S$ prescribing guidelines, please rate your level of agreement with the following statements:

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
<th>Do not know</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

a. They have reduced the number of patients requesting opioids inappropriately.
b. They have increased the use of the OARRS prescription monitoring program.
c. They have reduced the conflict between patients and ED staff regarding opioids.
d. They have reduced inappropriate use of the ED.
e. They have reduced inappropriate opioid prescribing.
f. They have allowed staff to focus more on emergent conditions.
g. They have led to higher nurse satisfaction.
h. They have led to higher physician satisfaction.

i. If you experienced any other outcomes, please specify:

The next questions focus on your perception about what happens in your ED for all patients treated by all providers.

4. For ALL patients who presented to your ED with ACUTE pain in the last month, please estimate how often they received the following:

   a. IV Demerol® (Meperidine)?
   b. A prescription for long-acting or controlled-release opioids (e.g., OxyContin®, fentanyl patches, and methadone)?
   c. A prescription for opioids to replace those that were lost, destroyed or stolen?
   d. A prescription for opioids for more than 3 day supply?

5. For ALL patients who presented to your ED with CHRONIC pain as their chief complaint in the last month, please estimate how often they received the following:

   a. IM or IV opioids?
   b. IV Demerol® (Meperidine)?
   c. Replacement doses of Suboxone®, Subutex® or methadone for those in a treatment program?
   d. A prescription for:
      1. long-acting or controlled-release opioids (e.g., OxyContin®, fentanyl patches, and methadone)?
      2. opioids to replace those that were lost, destroyed or stolen?
d. A prescription for (continued):
   3. opioids for more than 3 day supply? [Table]
   4. opioids to patients who have received an opioid prescription from another provider within the last month? [Table]
   5. opioids to patients who have previously presented with the same problem in the last month? [Table]

6. For ALL patients that were given a prescription for an opioid when leaving your ED in the last month, please estimate how often the following occurred:

   a. Confirmed identity by photo ID [Table]
   b. Searched Ohio Automated Rx Reporting System (OARRS) [Table]
   c. Completed urine or other drug screen [Table]
   d. Medical and prescription records obtained from other hospitals or providers’ offices [Table]
   e. Consultation from the hospital’s palliative or pain service [Table]
   f. Patients signed a pain agreement that outlines the expectations of the emergency clinician with regard to appropriate use of prescriptions for opioids [Table]
   g. For chronic pain patients, contacted their routine opioid prescriber [Table]
   h. For patients who visit the ED frequently, a case review or case management [Table]
   i. For patients who received an opioid prescription, written information on:
      1. their addictive nature [Table]
      2. their potential dangers of misuse [Table]
      3. their appropriate storage and disposal [Table]
      4. the facility’s position regarding the prescribing of opioids [Table]
7. For ALL patients leaving your ED who were considered high risk of opioid overdose in the last month, please estimate how often they received the following:

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>1-4%</th>
<th>5-24%</th>
<th>25-49%</th>
<th>50-74%</th>
<th>75-95%</th>
<th>&gt;95%</th>
<th>Do not know</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. A prescription for naloxone</td>
<td>☐ 0</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
<td>☐ 4</td>
<td>☐ 5</td>
<td>☐ 6</td>
<td>☐ 7</td>
</tr>
<tr>
<td>b. Naloxone to take home that is part of a Project DAWN kit (Deaths Avoided With Naloxone)</td>
<td>☐ 0</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
<td>☐ 4</td>
<td>☐ 5</td>
<td>☐ 6</td>
<td>☐ 7</td>
</tr>
<tr>
<td>c. Naloxone to take home that is not part of a Project DAWN kit.</td>
<td>☐ 0</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
<td>☐ 4</td>
<td>☐ 5</td>
<td>☐ 6</td>
<td>☐ 7</td>
</tr>
</tbody>
</table>

8. When did your ED last update its list of clinics that provide:

<table>
<thead>
<tr>
<th></th>
<th>No list exists</th>
<th>1 year ago</th>
<th>More than a year ago</th>
<th>Do not know</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Primary care services?</td>
<td>☐ 0</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
</tr>
<tr>
<td>b. Pain management services?</td>
<td>☐ 0</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
</tr>
<tr>
<td>c. Addiction treatment services?</td>
<td>☐ 0</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
</tr>
</tbody>
</table>

9. Regarding pain patients who frequently visit your ED, how do you provide information about their ED visit to:

<table>
<thead>
<tr>
<th></th>
<th>Paper or fax</th>
<th>Electronic</th>
<th>Both</th>
<th>We do not provide this information</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Their community care providers?</td>
<td>☐ 0</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
</tr>
<tr>
<td>b. Other emergency or acute care facilities that they visit?</td>
<td>☐ 0</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
</tr>
</tbody>
</table>

10. Additional demographics (if known)

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Number of Full Time Equivalent (FTE) physicians in your ED?</td>
<td>☐ 0</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
</tr>
<tr>
<td>b. Number of other FTE prescribers (Advanced Practice Registered Nurses, Physician Assistants) in your ED?</td>
<td>☐ 0</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
</tr>
<tr>
<td>c. Number of FTE nurses in your ED?</td>
<td>☐ 0</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
</tr>
<tr>
<td>d. Number of FTE clinical pharmacists in your ED?</td>
<td>☐ 0</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
</tr>
</tbody>
</table>

We need to conduct 30 minute interviews with ED staff from a diverse range of hospitals, including rural and urban to more accurately assess the adoption and implementation of the Ohio Emergency and Acute Care Facility Opioids and Other Controlled Substances (OOCS) Prescribing Guidelines. All interviewees will receive a $50 debit card. If you are willing to be interviewed, please add your name and email address here:

__________________________

Page 5 of 6
What further comments do you have about the Ohio OOCS Prescribing Guidelines?

If you would like a summary report of the survey results, please provide your email:

__________________________________________

Page 6 of 6
Appendix D: Interview Guide

I. INTRODUCTION

Note: Prior to the interview, participants will be provided a copy of the Ohio ED Opioid Prescribing Guidelines

Hello, my name is [name of interviewer]. Introduce self and other team members in the room.

- Introduce the project

As you know, the purpose of this Evaluation study is to better understand barriers and facilitators for implementing Ohio Emergency and Acute Care Facility Opioids and Other Controlled Substances (OOCs) Prescribing Guidelines. We want to take this time to talk to you about your experience with the guidelines. We want to understand the challenges and successes of adopting and implementing guidelines.

- Explain the purpose of the interview

We will be interviewing multiple people at your facility to gain multiple perspectives. We are really interested in learning more about your own experience with the guidelines.

- Describe the audio recording and how we will assure confidentiality and answer any questions

This interview will be audio taped so that we have an accurate record of your thoughts. Please be assured that the tapes and your transcript will be kept confidential. Leadership at your facility and any other co-workers will not have access to any of your responses nor be able to connect your responses to you personally. Our study does have IRB approval. Once your interview has been transcribed, only a site identifier will be linked to the transcripts, while any information linking you to the transcript will be destroyed. The audio recording will be destroyed as soon as the transcript is verified and analyzed by research staff.

If, at any time, you feel that the questions are too sensitive, I would be happy to turn off the recorder during that portion of questioning. You may also skip any questions you wish during the interview.

We also wanted to remind you that we will be giving you a $50 debit card as a small token of our appreciation for your participation.
Do you have any questions for me? [Answer any questions]

Are you ready to begin? I’m going to start recording now.

II. HOSPITAL OVERVIEW

Please introduce yourself and give a brief description of your hospital ED and your role.

- Position
- Name and type of hospital (ie, number of beds, urban or rural)
- Average number of admissions per day from ED
- Average number of each type of professional working per day in your ED
  - Physicians
  - Clinical pharmacists
  - Nurses

The questions that follow will be used as a guide and asked only where the information has not arisen spontaneously during conversation.

III. OPEN-ENDED QUESTIONS

1. Issues relating to the prescribing opioids and other controlled substances
   - What are the main issues or concerns you have when someone in the emergency department is prescribed opioids or controlled substances?
2. Procedures for ensuring the safe prescribing of opioids or controlled substances in the Emergency Department.
   - Has your hospital implemented the Ohio ED Opioid Prescribing Guidelines?
   - What are your thoughts on the Ohio ED Opioid Prescribing Guidelines? (Knowledge & Beliefs about the intervention)
   - What are the greatest challenges you have with following the Ohio ED Opioid Prescribing Guidelines? (Self-efficacy)
   - What recommendations do you have to improve the implementation of the Ohio ED Opioid Prescribing Guidelines? Why?

To ensure we obtain a complete picture surrounding the factors affecting the implementation of the guidelines, we will ask some more specific questions.
### III. SPECIFIC QUESTIONS

3. Intervention Characteristics

- The guidelines are developed by the Ohio Department of Health. Do you consider this a trustworthy source? *(Intervention source)*
- Do you have any concerns about the evidence supporting the guidelines? If so, what concerns do you have? *(Evidence Strength & Quality)*
- Do you believe these guidelines have any advantage over other guidelines? Why or why not? *(Relative advantage)*
- Were the guidelines tailored to meet the local needs at your hospital? If so, how? *(Adaptability)*
- How difficult was it to implement the guidelines? Why? *(Complexity)*
- Do you believe the guidelines could be presented better? If so, how? *(Design Quality and Packaging)*
- Did you require additional resources to implement the guidelines, such as staff or time? *(Cost)*
- Did you have competing priorities when implementing these guidelines? *(Cost)*

4. Outer Setting

- Do you believe the guidelines are beneficial for your patients? Why or why not? *(Patient Needs & Resources)*
- Are you aware if other hospitals are implementing these guidelines? If so, which ones? *(Cosmopolitanism & Peer Pressure)*
- Are there any external factors preventing you from implementing the guidelines? *(External Policy & Incentives)* e.g.
  - External mandates
  - Pay-for-performance
  - Public or benchmark reporting
- What additional external factors would assist you in implementing the guidelines? *(External Policy & Incentives)* e.g.
  - External mandates
  - Pay-for-performance
5. Inner Setting

- How were the guidelines communicated to staff in your hospital? (Networks & Communications)
- What is your hospital organizational culture towards these guidelines? (Culture)
- Are these guidelines considered a priority in your hospital? Why or why not? (Implementation Climate)
- Are any incentives provided by your hospital to implement these guidelines? (Implementation Climate)
- Do you receive any feedback on how well these guidelines are being implemented in your hospital? (Implementation Climate)
- Do you believe your hospital is constantly striving to improve or stuck in its traditions? (Implementation Climate)
- Does your hospital leadership appear committed to implementing these guidelines? (Readiness for Implementation)
- Were additional resources made available to you to implement these guidelines, such as time, staff or other resources? (Readiness for Implementation)

6. Process

- What benefits have you noticed when implementing the guidelines? (Reflecting & Evaluating)
- Were there any individuals in your hospital that formally or informally promoted the use of the guidelines? Who were they and what did they do to promote its use? (Engaging)

7. Other

- Do you have any final comments about the guidelines?

8. Other potential interviewees

- We want to ensure we include a range of perceptions for this project. Can you recommend any other people that work in your hospital that might be willing to do an interview with us? This can include physicians, administrator, nurses or pharmacists.