Achieving the Institute of Medicine's 6 Aims for Quality in the Midst of the Opioid Crisis: Considerations for the Emergency Department

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Contribution to Emergency Nursing Practice

- Briefly summarize the current state of the opioid epidemic.
- Identify strategies in the literature to provide pain management in the emergency department while achieving quality in care using the STEEEP framework (safe, timely, effective, efficient, equitable, and patient-centered).
- Identify specific approaches the emergency nurse can use to help mitigate the opioid crisis.

Introduction

The health care community is inundated with news and data about the opioid crisis. One tragic example of an opioid overdose death is the story of Jessie Grub. She was a recovering heroin addict in Michigan who underwent hip surgery in February 2016 in preparation for running a marathon. Jessie was discharged from the hospital with 50 oxycodone pills and died of an overdose that night.[1] Opioid-related adverse events, such as Jessie's, involve not only health care providers in emergency departments and many other settings, but state legislatures as they attempt to develop policy to reduce the impact of opioids on the community. Notwithstanding improved awareness and efforts by public health agencies to control the opioid epidemic, death rates continue to climb steeply throughout the nation. The opioid overdose death rate has increased 200% since 2000,[4] while costs for hospitalizations related to opioid abuse and dependence rocketed to nearly 15 billion in 2012.[2] Fueled by the opioid crisis, the drug overdose rate surpassed motor vehicle accidents as the number-one cause of injury-related death in the United States.[3] From 2000 to 2014, almost half a million Americans died of drug overdoses.[3]

As patients may seek care in the emergency department for relief of pain, it is an opportune setting to ensure that quality pain management is provided in the safest manner possible. A retrospective cohort study, which took a snapshot of opioid discharge prescribing in emergency departments across the country in 2012, showed 17% of ED patients were discharged home with opioid prescriptions.[4] Even if a small quantity of opioids is prescribed, it may lead to chronic use. A study of more than 1.2 million patients prescribed a first opioid showed that the risk of chronic use increased with each additional day of opioid taken after the third day.[5] In 2012, The Joint Commission published a sentinel event alert, calling hospitals to have effective processes, technology, education and training, and tools for safe use of opioids.[6] Health care organizations should function as learning organizations, continuously seeking the latest information about the opioid epidemic and wisely adapting evidence-based approaches to improve care.

To identify the best practices in the literature for managing pain using opioid therapy in the ED setting, a widely accepted framework for quality health care will be applied. The Institute of Medicine (IOM) published a landmark report, *Crossing the Quality Chasm*, with recommendations for improving care to better meet patients' needs through 6 domains of quality: safe, timely, effective, efficient, equitable, and patient-centered (STEEEP).[7] The STEEEP concepts can serve as guideposts to ensure every facet of quality is pursued with the delivery of opioid therapy to ED patients in pain.

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Methods

A search of PubMed and Ovid resulted in 158 articles, and 29 were to be found relevant. Terms used for the search included *opioid*, combined with *quality*, *outcomes*, *safety*, *timely*, *effective*, *efficiency*, *equity*, and *patient-centered*. Additional articles were found through search panes showing articles that are similar or in references. Articles were included if they featured opioid-informed interventions at the emergency care level to influence quality care. Results are organized by the IOM quality category: safe, timely, effective, efficient, equitable, or patient-centered. Most of the interventions relate to the safe use of opioids, but some apply to the other quality domains and will be categorized as such. Some of the interventions also may apply to more than one domain.

Safe Delivery of Opioid Therapy

It is important for health care providers to be educated on how to prescribe opioids safely, in consideration of many factors including opioid type, dose/size, possible drug interactions, and the individual patient history such as overdose, substance-use disorder, mental health disorder, sleep apnea, and current use of benzodiazepines.[4] With Jessie Grub's story in mind, United States Representatives Walberg and Dingell reintroduced "Jessie's Law" in March 2017, which would afford health care providers access to consenting patients' addiction history records.[1] Health care providers who are knowledgeable and competent with prescribing opioids and have access to current, relevant patient health information—including addiction history—at the point of care, are ideally suited to facilitate informed and safe pain management decisions.

In 2016, the Centers for Disease Control (CDC) published recommendations for primary care providers for prescribing opioids safely to patients in chronic pain not related to cancer, palliative care, or end-of-life.[7] One recommendation is to initiate therapy with a short-acting, instead of a long-acting, opioid in the lowest effective dose to minimize the risk for overdose; even low doses of a 40-mg/day morphine equivalent can be perilous.[8,9] Use of low doses is so important because higher opioid doses are associated with increased risk for death by overdose.[10] The opioid should not be prescribed if the projected benefit does not exceed the risk.[8]

To limit the quantity and strength of opioid prescriptions, some states, cities, and health care organizations have imposed prescribing restrictions. For example, in 2016, Pennsylvania limited opioid prescribing by ED health care providers to a 7-day supply (with an exception for cancer and palliative care) and are not permitted to refill opioid prescriptions.[11] In an even more stringent approach to limit prescription sizes, New York City advised no more than a 3-day supply of opioids at ED discharge for patients in acute pain.[12] Prescribing opioids for minor and chronic complaints was reduced by approximately 22% by one emergency department, through use of a prescribing guideline ($P < .001$).[13] As another example, a surgical setting successfully decreased prescription size by 15% to 48% while maintaining adequate pain relief, using order sets and reminder cards.[14] Use of electronic prescribing may help facilitate access and safe refill of an opioid for patients who require more than the initial small quantity provided.[15]

Drug–drug interaction is another important yet often overlooked prescribing consideration. If the patient is taking another medication that interacts with opioid metabolism, it can cause toxicity or decrease efficacy. Opioid-related deaths are commonly caused by the combination of an opioid with alcohol, benzodiazepines, or other substances.[16,17] A study found suboptimal prescribing, such as drug–drug interactions, for 92.6% of more than 9,000 patients in chronic pain. These patients sought care in the emergency department, yet only 4% had their medications corrected.[18] This underscores the need for medication reconciliation in the emergency department.

When opioids are used for inpatient management of acute pain, these patients should be monitored carefully for adverse effects. A study showed that less than 10% of patients taking intravenous opioids through patient-controlled analgesia received the recommended patient monitoring of respiratory rate, oxygen saturation, and sedation level.[19] Structures and processes must be in place for safe patient monitoring, including educating staff on capnography or minute ventilation monitoring and protocols, and use of a valid sedation scale.[19,20] Monitoring of naloxone administration for opioid-induced respiratory depression may be a useful quality indicator to track in children[21] and may be tracked as an overdose treatment metric for adults as well.

Assuming an opioid is prescribed safely, the patient may end up taking it in an unsafe manner. The risk for dangerous opioid use was demonstrated by a national study that showed about half of prescription opioid overdoses were unintentional.[22] Aberrant behavior or misuse is present in up to 24% of patients in chronic back pain and nearly half of patients discharged from the emergency department.[23,24] In a study of 85 adult patients prescribed an opioid at ED discharge, 42% self-reported misuse of the opioid at 3 or 30 days post-discharge, and the most common reason was self-escalation of dose (92%).[24] This underscores the importance of effective patient education, which is discussed in the patient-centered section.