

Safe Practice Recommendations Through Technology for Safer Opioid Prescribing Using Measures and Clinical Decision Support

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Background

The United States remains in the midst of a deadly opioid use epidemic.¹ Contributing to this crisis, between 3-10% of opioid-naïve* patients who are prescribed opioids progress on to chronic opioid use, with the associated increased risk for overuse or dependence. Outside stresses only exacerbate the potential for these issues. Although it is unknown exactly how clinicians' opioid prescribing habits are related to rates of subsequent misuse,² a few studies suggest specific parameters for how long or at what dosage can be prescribed for opioid-naïve patients without inadvertently promoting long-term use.³

Methods

ECRI, through the Partnership for Health IT Patient Safety, and EHRA joined their expertise, data, and evidence to focus on how technology could be used to integrate measures and CDS into tools to assist the patient populations that have yet to experience substance use disorder.

Goal

By identifying ways technology can be used in the near term, the group aimed to mitigate the risk of opioid dependence and persistent use among populations yet to be addressed, mainly:

Opioid-naïve patients—those never having been exposed to opioids

Opioid-exposed patients—those not currently using opioids but who have taken opioids previously for an acute event and do not presently have an active prescription for opioids

Recommendations and Rationale: Opioid Safe Practice Recommendations for Measures and Clinical Decision Support

Three high-level recommendations target two populations—opioid-naïve and opioid-exposed patients focus on prescribing and prescribing patterns, enabling technology to capture additional elements to drive measures and seeking to ensure that the CDS is not only appropriate to the patient but also available when needed in the clinical encounter.

Enable technologies to measure and monitor prescribing patterns to allow safer opioid prescribing

Rationale: Using health IT to measure internal and external metrics for prescribing patterns along with transparent utilization and performance can have significant positive impact on provider prescribing practices.⁴



Prescribing



Measuring

Ensure that EHRs can collect and access the data elements needed to support measures and drive CDS

Rationale: Collecting, accessing, and incorporating computable data elements to inform safer prescribing will enable the use of data elements for measure calculation and CDS use (in computable format).⁵



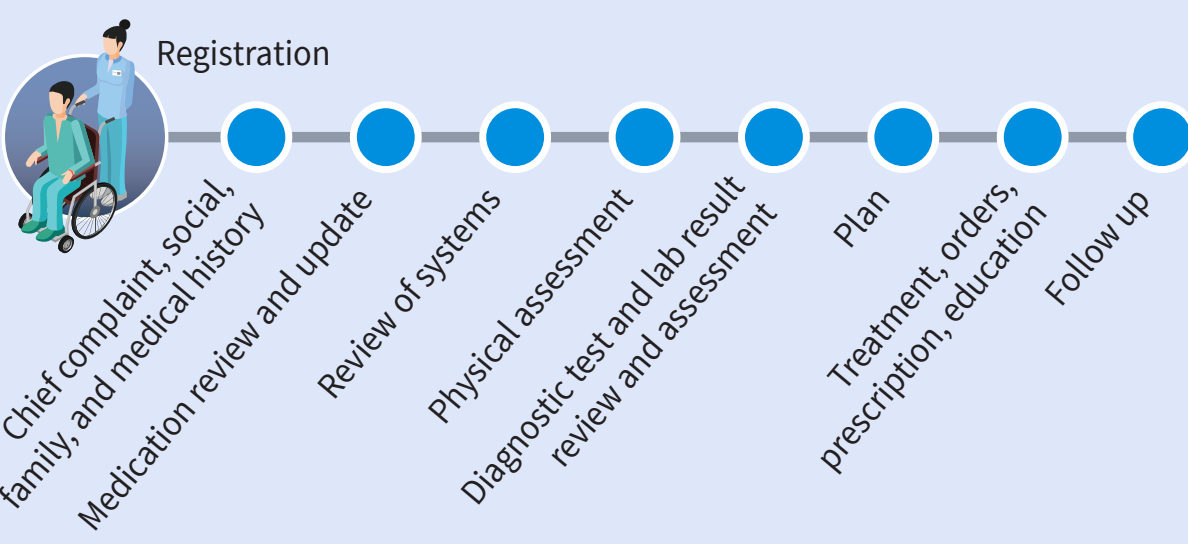
Knowledge (CDS)



Risk Factors

Ensure that opioid-prescribing CDS interventions are delivered at the right time in the workflow for both opioid-naïve and opioid-exposed patients

Rationale: Providing CDS intervention at the right time in the workflow will enable safer and more effective opioid prescribing. CDS at the right time will facilitate effective use of CDS functions, and limiting repetitive CDS will reduce physicians' burden (e.g., by eliminating unnecessary interruptions in the clinical workflow and minimizing alert fatigue).^{6,7}



Data and Evidence

An environmental scan looking at three key questions was performed to identify publically available, existing CDS artifacts aimed at improving appropriate opioid prescribing for opioid-naïve patients. Studies published from January 2010 to June 2018 and identified 51 relevant studies. Overall, the report identified a small, substantive evidence base suggesting health IT interventions can be effective for reducing opioid prescribing. The evidence suggests that interventions including PDMPs and bench-marking prescribing rates are associated with reductions in opioid prescribing.

Evidence-based Literature Review

Key Questions

What resources or tools exist for creating and/or improving clinical decision support for appropriate opioid prescribing for opioid-naïve and opioid-exposed patients?

What evidence exists that measuring particular variables (e.g., prescribing habits) improves appropriate opioid prescribing?

What risk factors are associated with progression to opioid abuse?

Comprehensive literature search of PubMed, EMBASE, MEDLINE, CINAHL, and Scopus databases

Search strategy identified studies published from January 2010 to June 2018

Studies excluded if:

- Published before 2010
- Published outside of the United States
- Palliative care/end of life, opioid-dependent or opioid-abuse related

313 citations retrieved, and reviewed at abstract and full-text level

Excluded: 254

Included: 59

Data Analysis

To begin the data analysis, a taxonomy was developed to capture the broad categories related to opioid issues. These steps are prescribing, transcribing, dispensing, administering, monitoring, adverse drug reactions, and diversion. In evaluating the total event reports, 3,396 (47%) indicated a level of harm. In the category of prescribing, 30% of the time the event reached the individual and caused harm or death, 58% of the time the event reached the individual but caused no harm, and 11% of the time the event did not reach the patient (Figure 1). To mitigate issues in these steps, alerts and reminders, templates, data and clinical decision support are available. These were shown as issues in the PSO reported events.(Figure 2)

CDS Safeguard Functional Status

Safeguard bypassed or NOT acknowledged.....	41%
Safeguard DID NOT function as expected	28%
Safeguard functioned as expected.....	18%
Safeguard NOT available	14%
Safeguard NOT activated.....	<1%
Other	<1%

Measures to Track for Improved Opioid-Prescribing Practices

- Average daily dose in morphine milligram equivalents (MMEs)
- MMEs per prescription
- Patient satisfaction scores, pain management

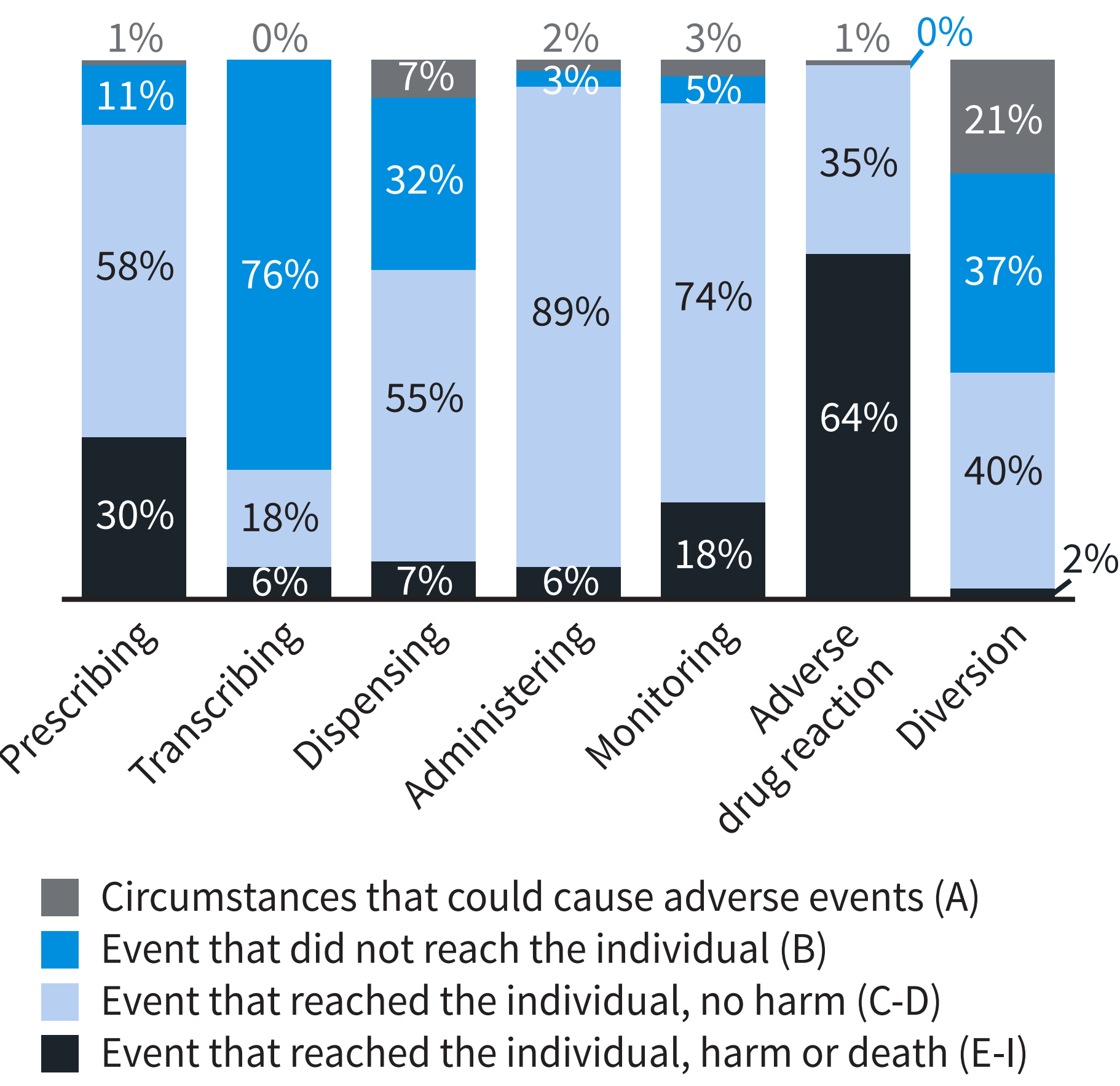
Conclusion

Health IT can play a vital role in mitigating safety issues, including those associated with opioid prescribing. For technology to enable safer and more effective opioid prescribing, it needs to:

- leverage and optimize health IT so that CDS operates at the right time in the clinician's work- flow
- CDS interventions should be triggered using specific evidence-based data elements in the EHR (e.g., demographics, medication history, and comorbidities) to identify the opioid- naïve and opioid-exposed patients more effectively and to identify their risk factors to the provider at the appropriate time in the workflow^{6,7}

The safe practice recommendations are intended to provide guidance and assist with the efficient and effective use of CDS to inform opioid prescribing and to incorporate internal and external measurements to prevent either opioid-naïve or opioid-exposed patients from moving towards persistent use and abuse or unintentional overdose.

Figure 1. Distribution of Harm in Each Taxonomy Category

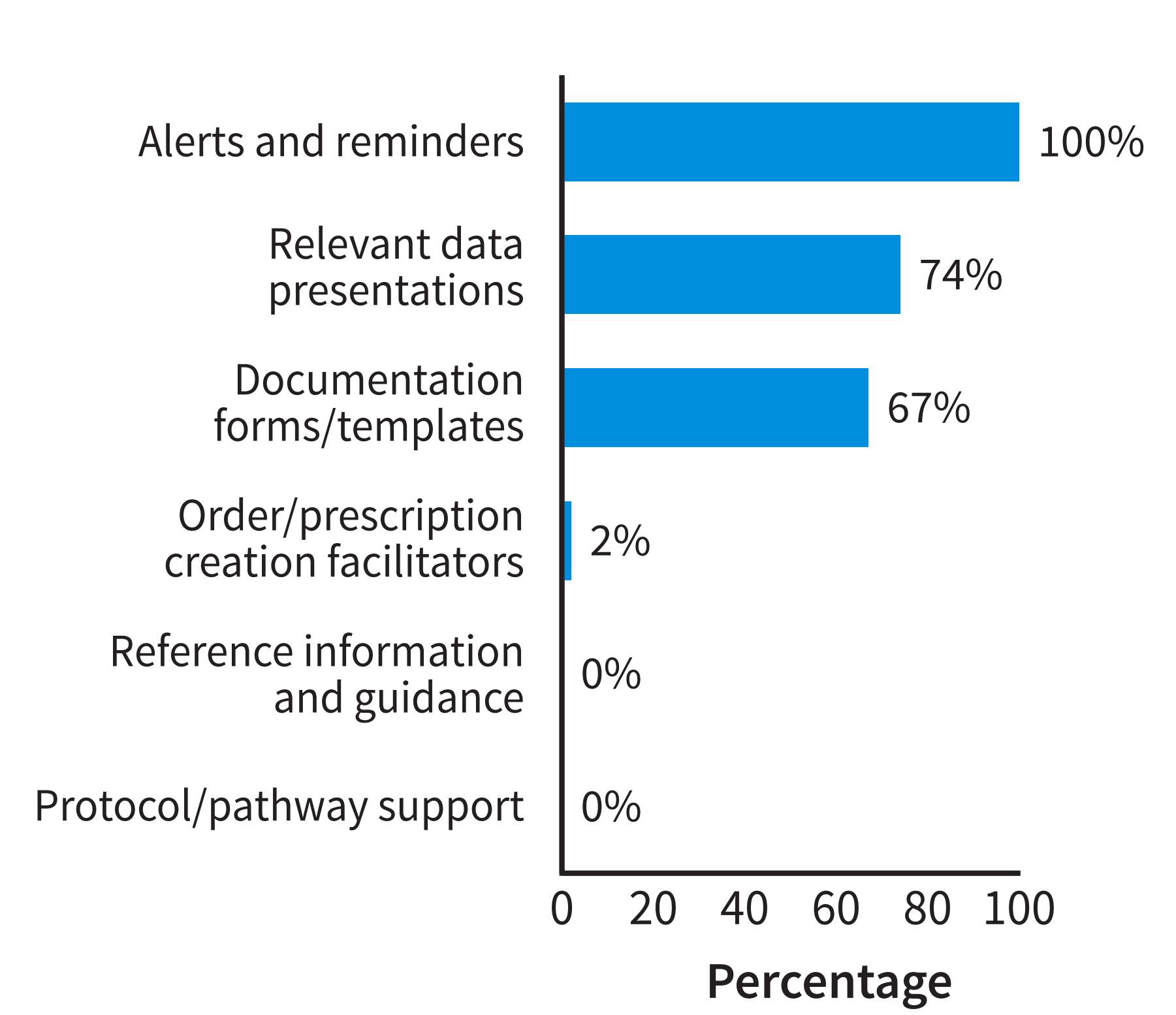


Source: ECRI PSO Deep Dive: opioid use in acute care. Plymouth Meeting (PA): ECRI; 2017 Oct 13. 232 p. Also available: <http://www.ecri.org>. N = 3,396 events with a harm score indicated. Percentages do not always add up to 100% because of rounding.

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Figure 2. CDS Intervention Type for Opioid-Prescribing Events



Note: N = 269 opioid-safety events involving CDS interventions. Total adds up to more than 100% because more than one CDS intervention could be determined from some events.