Medication Management and Safety Study:

Professionals, Patients Cite Progress, Concerns

Nearly two decades after the Institute of Medicine's seminal report, To Err is Human: Building a Safer Health System, sounded a patient safety alarm by pointing out that as many as 98,000 people die because of preventable errors each year,[1] patients continue to experience an unacceptable number of medication errors. At the same time, healthcare organizations continue to struggle to identify and implement the medication management solutions that can more successfully move the industry toward "zero errors" (according to the 2017 Patient Safety and Medication Management Study,[2] a recent survey of 153 physicians, nurses and pharmacists, and 1,131 patients and their family members conducted by HIMSS Analytics and sponsored by BD).

"Healthcare organizations have leveraged a variety of technologies in an effort to reduce medication errors, but there is still a lot of work to be done," said Bryan Fiekers, Senior Director of Research Services at HIMSS Analytics. "While the study suggests that patients are feeling slightly more confident when it comes to their medication-related safety while in the hospital, the fact that medication errors are 'second page news' is troubling – patients are still getting hurt even if we don't hear about it every day. As technology advancements continue, and the communication between the tools improves, there is hope that more of these errors can be caught before the medication administration is finalized."

A review of the study's findings sheds light on the current state of patient safety, patient perceptions toward medication management and, perhaps most importantly, healthcare professionals' thoughts on potential solutions to help the healthcare industry move toward the elimination of errors.

The state of patient safety

While healthcare organizations have made progress with various technologies in recent years, they have a long road ahead to eliminate harmful medication errors altogether.

"We've reduce[d] medication errors over the last eight years by 88 percent. So, we're whittling it down. Significant events are very rare these days, but [we] can't afford to hurt any child," said a system director of pharmacy and clinical nutrition at a 500-plus-bed hospital. "If I don't [continue to reduce medication errors], I won't be working as a pharmacy director. You have to always get better. Our goal is zero [errors]. 'One is not zero' is our motto, which is pretty aggressive."

The greatest vulnerability in the medication management process exists in care transitions, according to the survey results. Indeed, 32 percent of clinicians cited care transitions as the area of greatest concern, while 24 percent pointed to the patient bedside, and 15 percent had

concerns with the medication management process while in the pharmacy.

Care transitions often prove to be a stumbling block as clinicians wrestle with the process of medication reconciliation. The Joint Commission defines reconciliation as "the process of comparing a patient's medication orders to all of the medications that the patient has been taking," and it points out that the goal of the exercise is "to avoid medication errors such as omissions, duplications, dosing errors or drug interactions."[3]

According to one chief medical information officer (CMIO) from a 1,233-bed healthcare provider organization, "the process of reconciliation is so painful. … It takes a good bit of time, and if it's done with rigor, it really is quite arduous to do."

While care transitions stood out as an especially vexing challenge, there are other pain points. In fact, healthcare organizations are struggling with the overall medication management process, as 56 percent of healthcare professionals surveyed indicated that their medication management process fails to capture 20 percent or more of medication errors. Perhaps most troubling, 6 percent of respondents said their medication management process fails to catch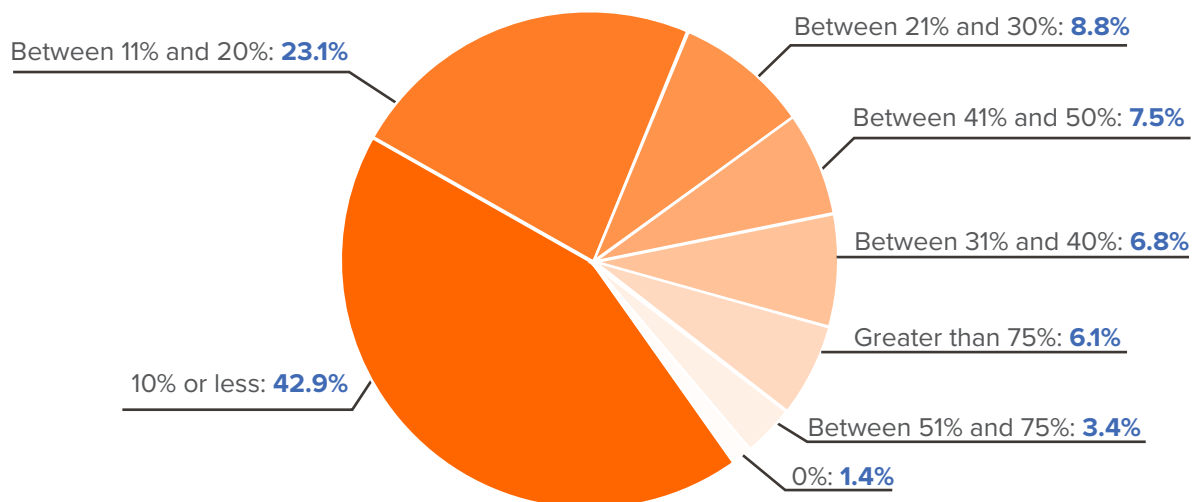 more than 75 percent of errors. While patient safety concerns are paramount, the financial risk associated with medication errors also troubles healthcare organizations. Consider the following: 10 percent of organizations with more than 500 beds and 11 percent of organizations with 250 beds or more recognize that medication errors could cost their facility $2 million annually, or more. Across hospitals of all sizes, 8 percent recognize an annual financial risk of between $500,000 and $1 million, 7 percent between $250,000 and $500,000, 14 percent between $100,000 and $250,000, and 12 percent less than $100,000.

Patient perceptions, patient realities

Despite the fact that medication errors still plague healthcare provider organizations, patients are feeling much safer. Indeed, with advancements in medications such as pharmaceutical therapies, and automation in healthcare information technology, nearly 40 percent of the patients and families who participated in the survey feel more protected than ever before. What's more, more than 96 percent of patients and family members trust that their medications will be administered according to the five rights (right patient, drug, dose, route and time), with a full 60 percent of respondents reporting supreme confidence.

Figure 1: **Medication Errors that Slip Through the Cracks.**

What percentage of medication errors do healthcare organizations fail to catch through the medication management process?

Between 11% and 20%: **23.1%**
Between 21% and 30%: **8.8%**
Between 41% and 50%: **7.5%**
Between 31% and 40%: **6.8%**
Greater than 75%: **6.1%**
10% or less: **42.9%**
Between 51% and 75%: **3.4%**
0%: **1.4%**

This trust, however, does not appear to be entirely warranted. In fact, 23 percent of patients reported that they have experienced a medication error. And, one in five of these patients suffered from "severe repercussions." In addition, 38 percent of respondents reported that they know someone who has experienced a medication error – and of those, 35 percent experienced a prolonged length of stay; 23 percent, severe repercussions; and 7 percent, death.

Technology solutions: Moving toward a sure-fire remedy

The good news is that the industry is moving toward a better understanding of what it takes to achieve better patient safety results. Respondents from organizations who have caught more than 90 percent of medication errors through their medication management processes point to closed-loop medication tools as the primary cause of their success (63 percent), followed by attention from leadership (55 percent), ongoing training (47 percent) and seamless integration with the EHR (32 percent).

Indeed, one of the survey respondents pointed out that his organization's implementation of a closed-loop system is proving advantageous because "everyone is looking in the same system. We can all see everything. There's no question about what nursing is seeing, what

pharmacy is seeing – and what they are doing. We're all looking at the same profile and the same medication order. The fact that it's a closed loop and the fact that it's electronic, that's big for us because previously we were going off of paper, [and no one] would know if a nurse is discontinuing something on the MAR [medication administration record] or what the pharmacy was doing, because it's a different system completely," said the director of pharmacy.
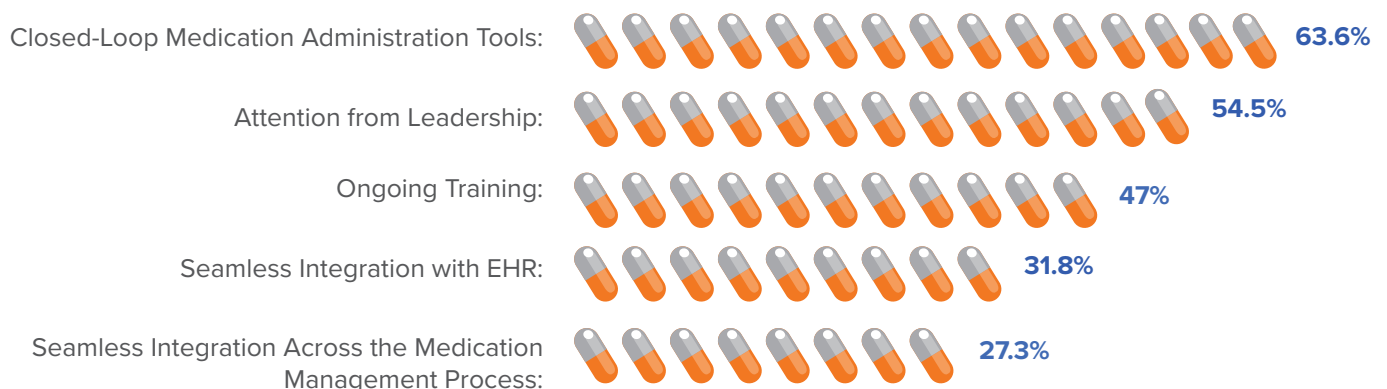
Not surprisingly, then, more than 70 percent of respondents recognize the potential value of moving toward a single-vendor medication management solution. Working with a single vendor could help to streamline the development and maintenance of interfaces between technologies, as well as the communications between provider organizations and the technology vendors. With a single vendor, organizations could also maintain just one medication formulary, as opposed to trying to manage a variety of formularies. And, overall cost of ownership could be dramatically reduced.

Working with multiple vendors is a recipe for frustration, according to comments from one of the survey respondents who described his organization's use of multiple vendors as "pretty disjointed" and "filled with workarounds."

According to an assistant director of pharmacy who works at a 260-bed hospital, "There's constantly one

Figure 2: **Medication Error Preventions Success Factors.**

Organizations that catch more than 90 percent of medication errors cite the following success factors:

Closed-Loop Medication Administration Tools: **63.6%**

Attention from Leadership: **54.5%**

Ongoing Training: **47%**

Seamless Integration with EHR: **31.8%**

Seamless Integration Across the Medication Management Process: **27.3%**

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system or another that's not functioning completely well, whether it's the fax machine [not] faxing a prescriber order to the pharmacy ... [or] maybe our intake system isn't working. Maybe our pharmacy system isn't communicating with the automated dispensing machines. It's very disjointed."
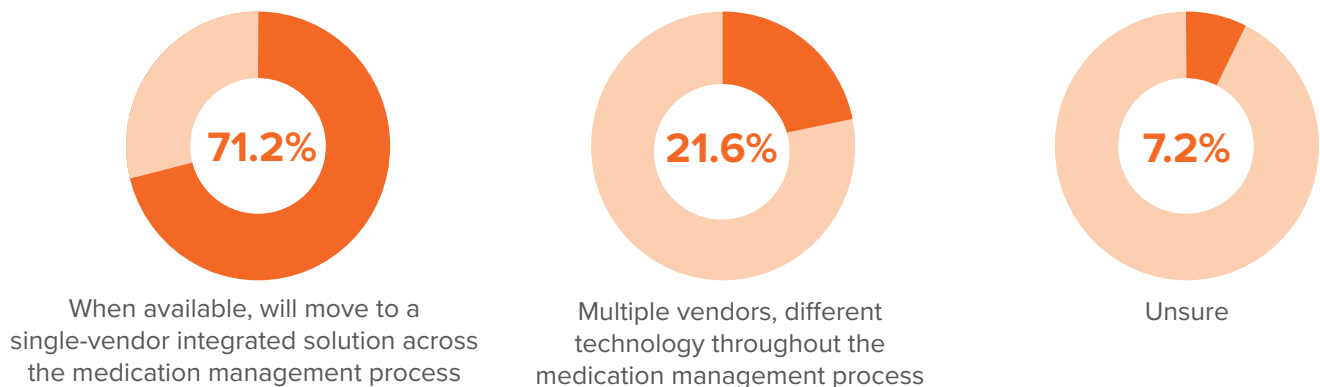
In an effort to eradicate such frustrations, healthcare organizations appear to be embracing the idea of single vendor medication management systems to improve patient safety. In fact, 88 percent of healthcare professionals surveyed predicted that their organizations would eventually move to single vendor medication-management solutions, when these become available.

Methodology
The professional online survey was administered to 153 physicians, nurses and pharmacists between May 23 and June 23, 2017. In addition, in-depth interviews with 20 of these professionals were conducted between June 16 and June 28, 2017. The patient and family online survey was administered between June 19 and June 23, 2017, and included 1,131 individuals who had a loved one admitted to the hospital within the previous 12 months.

Figure 3: **Medication Management Approaches.**

Which of the following best describes your organization's future medication management approach?

71.2%

When available, will move to a single-vendor integrated solution across the medication management process

21.6%

Multiple vendors, different technology throughout the medication management process

7.2%

Unsure

References

[1] Institute of Medicine, To Err is Human: Building a Safer Health System, http://www.nationalacademies.org/hmd/~/media/Files/Report%20Files/1999/To-Err-is-Human/To%20Err%20is%20Human%201999%20%20report%20brief.pdf

[2] HIMSS Analytics, 2017 Patient Safety and Medication Management Study, prepared for BD.

[3] Joint Commission, Using Medication Reconciliation to Prevent Errors, https://www.jointcommission.org/assets/1/18/SEA_35.PDF

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