STRATEGIST/
ADVOCATE

CHAMPION

MSO

FACILITATOR

CROSS-
DISCIPLINE
LEADER

DATA
OPTIMIZER

EVIDENCE &
KNOWLEDGE
STEWARD

A CALL TO ACTION

The case for **Medication Safety Officers** (MSO)

A White Paper. July 2018

ISMP

www.ismp.org

About ISMP

The Institute for Safe Medication Practices (ISMP) is the only 501c (3) nonprofit organization devoted entirely to preventing medication errors. During its more than 30 year history, ISMP has helped make a difference in the lives of millions of patients and the healthcare professionals who care for them. ISMP is known and respected as the gold standard for medication safety information. It also has served as a vital force for progress. ISMP's advocacy work alone has resulted in numerous necessary changes in clinical practice, public policy, and drug labeling and packaging.

Among its many initiatives, ISMP runs the only national voluntary practitioner medication error reporting program, publishes newsletters with real-time error information read and trusted throughout the global healthcare community, and offers a wide range of unique educational programs, tools, and guidelines. As an independent watchdog organization, ISMP receives no advertising revenue and depends entirely on charitable donations, educational grants, newsletter subscriptions, and volunteer efforts to pursue its life-saving work.

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I EXECUTIVE SUMMARY

While progress has been made to improve medication-use safety, much ongoing work is necessary. Consideration should be given to make past safety achievements more robust, widespread and sustainable, and a proactive process should be put in place to address future safety challenges that will inevitably occur in our rapidly changing healthcare environment.

To meet this challenge—a dedicated position directly responsible and empowered to lead health system medication safety strategy and implementation is necessary: the Medication Safety Officer (MSO).

The Medication Safety Officer optimizes medication safety work through the following roles:

CHAMPION: The visible campaigner and authoritative resource on medication safety.

EVIDENCE AND KNOWLEDGE STEWARD: The centralized expert on organizational medication safety-related evidence, information, and knowledge.

STRATEGIST/ADVOCATE: The voice establishing medication safety as a core value for both individuals and the organization.

FACILITATOR: The team leader leveraging scientific strategies to embed safety and sustain improvements at the local and organizational level.

CROSS-DISCIPLINE LEADER: The connector spanning boundaries to work across professional silos and hierarchy and engaging all in medication safety efforts.

DATA OPTIMIZER: The conduit for coordinating investigations of medication error reporting data to ensure efforts result in tangible improvements.

Senior healthcare executives are accountable to their patients, staff and community to address the challenge of medication safety with confidence and clarity. To do this they must:

» Hire the Medication Safety Officer with the skills, knowledge and attitudes required.

» Provide the Medication Safety Officer with the ability to act on safety concerns.

» Accept responsibility to enable the MSO position to succeed.

» Free the Medication Safety Officer from selected frontline responsibilities to lead the incremental hard work of transforming the medication management system into one that is highly reliable and safe.

Senior healthcare executives must place the Medication Safety Officer on the leadership team to assure their health system is:

» Covering essential functions to support medication safety.

» Engaging a knowledgeable leader guiding others responsible for this work.

» Learning from internal and external medication mishaps to reliably gain and share knowledge to prevent their reoccurrence.

» Helping to implement systems that protect patients from preventable medication-related harm.

II THE NEED FOR A LEADER POSITIONED TO TRANSFORM MEDICATION SAFETY

Medical errors became front page news 19 years ago with the release of the still-influential report *To Err Is Human: Building a Safer Health System*.[1] The Institute of Medicine (IOM) panel declared that medical errors of all kinds, which occur at every stage of the healthcare process, could result in the loss of as many as 98,000 American lives each year. Despite controversy regarding the validity of such numbers and the release of other high-profile estimates of medical error and care-associated patient harm[2,3] there is no question that there is a problem. Whichever statistics are accepted as fact, they still demand healthcare leadership attention, clinician focus and patient involvement.

In 2007 the IOM (now called the National Academy of Medicine) also determined that each of the annual 1.5 million hospitalized patients experience, on average, one medication error a day.[4] More recent evidence documents the presence of adverse drug events (ADEs) and/or medication errors in 5% of surgeries evaluated[5] and highlights ADEs as an important cause of hospital readmissions in older adults.[6] And while many errors do not result in substantial patient harm—the consequences of mistakes in medication use in both inpatient and ambulatory care environments have a considerable amount of risk associated with them.[7,8] In 2011, a global estimate of the avoidable financial costs due to suboptimal medication use was estimated at about $500 billion a year.[9] Furthermore, the medication safety problem is much larger than might be gleaned from reported errors, as evidenced by a representative study that demonstrated voluntarily reported medication errors only identified 13 of 1,000 clinically significant prescribing errors that were identified retrospectively by audit.[10]

Years of focused effort on medication error reduction since 1999 have realized progress.[11-13] The sharing of concerns is bolstered by a culture of safety and risk identification is enhanced through voluntary reporting systems. Patient identification and dose confirmation have improved through the use of bar-code technology.[14] Despite these achievements, changes in the medications themselves, team roles and technologies have introduced unintended consequences and new challenges to safe delivery. Early studies between 1998-2008 showed significant reduction in medication errors with the use of computerized provider-order entry (CPOE) systems.[15] As part of the American Recovery and Reinvestment Act (ARRA) of 2009, billions of dollars of federal incentives were provided to hospitals for the adoption and "meaningful use" of CPOE systems. It is estimated that as of 2016, CPOE systems with clinical decision support were used in 95.6% of hospitals.[16] Yet, new types of errors from CPOE systems are occurring at a rate of almost 1 per admission.[17] The Pennsylvania Patient Safety Authority found that 81% of all CPOE-related events were medication related.[18] ECRI Institute, a federally-recognized patient safety organization (PSO), did a "deep dive" and found that most of these new errors were a result of system interface issues, entry error, system configuration, wrong record retrieval and software functionality issues.[19] ISMP in its own study found that 6 unsafe, fatal medication orders were able to pass undetected in up to 81% of CPOE systems.[20] Although

errors from poor handwriting have been eliminated with CPOE, new unintended consequences have begun to occur. In fact, many Medication Safety Officers today are focusing on improving CPOE decision-support processes to improve medication safety. Complicated medication regimens and ever-increasing numbers of pharmaceutical therapies continue to test safety. The complexity of the medication management system in both the inpatient and ambulatory environment[21] continually introduces factors that can compromise its safety and that of patient safety at large.[11] External forces such as drug shortages, reimbursement restrictions and detailed regulations further complicate efforts to prevent, manage, and learn from the errors that do occur. Dedicated individuals with expertise in medication use safety are needed to meet these ongoing challenges.

To capitalize on successes and address this convergence of influences, transformation is required to build on what we know to generate continued, centralized commitment to reducing the risk of medication error. Senior healthcare executives have been called to motivate and enable change to result in sustainable safety improvements in their organization[22-24]—yet they cannot and should not do it alone. To make changes real and local, they need an advocate. One such strategy to enhance the work of the many qualified experts that contribute to medication safety is to establish a named director-level position to drive progress while interacting with frontline clinicians.[25] Armed with education, authority, and leadership skills[25-27] this individual will have the capacity to assure that we learn from errors, develop strategies and implement initiatives to reduce or eliminate the negative consequences of medication errors. This individual will commit to enabling every knowledgeable staff member to contribute new ideas to the reduction of preventable medication-related harm. This individual is the Medication Safety Officer.

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III RESPONSIBILITIES AND ROLE OF THE MEDICATION SAFETY OFFICER (MSO)

While the work of medication safety is the responsibility of many, the coordination and strategic alignment of the work is optimized if the effort stems from one individual. This has repeatedly been shown with roles like infection preventionists[28], emergency management directors, fire prevention safety officers,[29] and others. For the purpose of this white paper, we are calling this person the Medication Safety Officer (MSO). However, the Medication Safety Officers Society (MSOS) reviewed its membership database in October of 2017 and identified 189 different titles used in health systems for this individual with some of the most common titles (besides MSO) being medication safety coordinator, medication safety pharmacist, medication safety manager, clinical specialist, medication safety, and director of medication safety (MSOS, unpublished data). Primary resource description of the duties of a centralized medication safety role was first published in the US in 2013,[25] and the UK in 2016[30,31] where the position has been required at the hospital (Trust) level since 2014. As of March 2017 approximately 450 MSO positions are active in the United Kingdom.[32] Other materials describing the MSO role focus on day-to-day activities and responsibilities that support safe medication use—whether through an individual or a team.[26,33] The MSO will ensure that communication on medication safety work—both to you as a healthcare leader and to the clinical team—is uniform, timely and actionable. The MSO is the internal accountable "go-to" expert on medication safety. MSOs can connect improvement efforts directly to the mission,

patient safety and care performance goals through advocacy and patterning collaborative behavior. The following summarizes the actions of a medication safety leader, which exemplifies this non-siloed approach:

CHAMPION: The Medication Safety Officer is the visible campaigner and authoritative resource on medication safety. Active through committee participation and leadership, the MSO interacts with organizational and medical staff committees where medication safety issues are relevant—whether they are latent (as with policy development) or evident (as in frontline care delivery). The MSO guides the actions and decision making of these groups to support a systems-oriented view of medication safety improvement and staff education.

EVIDENCE AND KNOWLEDGE STEWARD: The Medication Safety Officer is the steward of internal and external evidence, information and knowledge related to medication safety issues. The MSO is charged with identifying best practices, viable improvement strategies and practical tools to apply to this work. With mindfulness toward the value of both national and local resources, the MSO effectively ensures the organization proactively improves its medication-use processes. The MSO helps to reduce the probability of preventable ADEs via application of the best and most current information and evidence available. The MSO is the key to optimizing strategies informed by untoward events that do occur. The MSO then uses that knowledge to develop and help implement harm-mitigation system or workflow changes. The MSO pursues stories and seeks understanding of experiences internally while watching for external notices of concern and success to bring broader perspectives to the table.[34] To leverage action and motivate change the MSO keeps abreast of regulatory and accreditation requirements related to the use of medications.[35]

STRATEGIST/ADVOCATE: The Medication Safety Officer is the advocate for the mission and vision of medication use excellence throughout the organization. To ensure system improvement, the MSO works to align efforts to support and enrich patient safety and quality strategic plans at the organizational and unit levels. The MSO integrates quality improvement principles, safety methodologies and effective tactics to implement overarching strategies and reduce medication errors. Through work on failure identification and analysis, the MSO integrates mindsets and behaviors that support medication-use process improvement goals from the administrative ranks through frontline clinical personnel.

FACILITATOR: The Medication Safety Officer is the expert to implement scientific techniques to ensure that high leverage strategies to improve safety are put in place and sustained to enhance medication management system safety and reliability. The MSO employs a strong sense of teamwork, systems orientation and medication process expertise to embed local practices with actions that support safe medication use. The ability of the Medication Safety Officer to work within a broad-based team is a particularly valuable skill the MSO can bring to CPOE and other medication system design, implementation and improvement initiatives.[36] If the position is established effectively, the MSO can occupy dual roles as a leader both in patient safety and clinical education thusly contributing to the clinical learning environment's success by sharing lessons learned at the unit and across the system.[37]

CROSS-DISCIPLINARY LEADER: The Medication Safety Officer is the role that ensures medication safety considerations are infused in organizational processes, initiatives, and programs across silos. The MSO interfaces with other departments and

I t is crucial that the MSO is a colleague that brings value and integrity to the work of medication safety improvement. Trusted peers are crucial to the success of improvement initiatives.

the medical staff to proactively develop and lead implementation of medication error-prevention strategies. The MSO interacts with individuals in various roles, professions, and departments who work with systems related to medication use. Working collaboratively, the MSO revises policies, procedures, protocols and forms related to medication processes and updates CPOE order sets. Recognizing that efforts to improve safety should not be siloed, the MSO also works together with individuals working in information technology, quality and risk on issues that have an indirect effect on medication safety to embed their knowledge into improvement efforts.

DATA OPTIMIZER: The Medication Safety Officer is the conduit for sharing medication error reporting data to ensure that the effort results in tangible improvement. Health systems are drowning in data. They are known to "collect too much and do too little."[38(pg74)] The MSO sees that the right data is gathered in a tactical way and contributes to actionable decision making at both the strategic and frontline level. The MSO directs how the data is collected by identifying what data is important, determining resultant metrics of the most impact and packaging that data to be useful to senior healthcare management, clinical leadership, and the board. The MSO knows where the data may be and how to best use it to generate enhancements in medication safety initiatives and process improvements.

The Medication Safety Officer role may logically seem to be designed to be owned by a pharmacist, but it is not submitted here to exclude other professionals.[39] What is crucial is that the MSO is a colleague that brings value and integrity to the work of medication safety improvement. Trusted peers are crucial to the success of improvement initiatives.[40]

IV BUILDING THE CASE FOR THE MSO AS A CENTRALIZED LEADERSHIP ROLE TO DRIVE SAFETY IMPROVEMENT

> **"Employing the Medication Safety Officer at least 20 hours a week showed significant improvement (in a national medication safety assessment score) between 2000 and 2011 (12% to 40% [233% increase])."[11(pg61)]**

Both organizational and regulatory influences support the establishment of the Medication Safety Officer in an institution or system.

Organizational

» **Realization of benchmarks toward strategic elements supporting safe medication delivery.** In 2014, ISMP published the results of the national distribution and response to a medication safety assessment.[11,41] The analysis showed that not only had 20% of responding hospitals employed a Medication Safety Officer at least 20 hours a week but that the hospitals that had established the role showed marked improvement in several key areas: the provision of essential drug information, the organization's quality and risk management processes, communication of drug orders and other drug information, and staff competency and education.[11] Weakness in these processes can detract from workforce resiliency, patient care effectiveness and safety, which all affect the bottom line. Improvements therefore can reduce economic and other challenges that senior healthcare executives face.
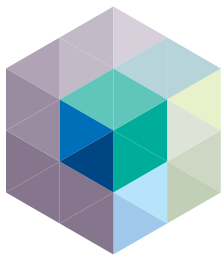
» **Establishment of accountability for improvement and learning.** The importance of the organization to learn from error and be accountable for that learning is paramount. The learning organization is an important concept for healthcare to consider as a strategy to support patient safety.[42-44] The challenge of learning from mistakes and errors can be more effectively addressed through defining and empowering an individual leader to govern and guide processes with authority to act, enabled through senior healthcare executive support of the role and strategy. This leader can link the work enterprise-wide rather than leaving those connections to happenstance. This position should not aim to over-manage or negate the value of departmental or unit-level advances. Instead, it optimizes cross-silo learning as an element of a system improvement strategy. By being assigned responsibility for this role, the MSO can generate engagement by frontline staff and as needed, through their position as a mentor, embody the value of the improvement initiatives should work conditions potentially negate the sustainability of initial achievements.

» **Improvement of project and incident-level information handoffs that can impact effectiveness, efficiency and buy-in.** The recognition of poor communication and information handoffs on the frontlines of care as contributors to failure is well established. It is logical to assume that the same types of inefficiencies can contribute to poor organizational safety improvement given gaps in sharing what is known and progress reporting as initiatives advance.[45,46] Having a defined individual at the helm of connecting the work across the enterprise can reduce miscommunications and process gaps.

» **Demonstration of health system and senior healthcare executive commitment to medication safety improvement.** Creation of a dedicated peer-level leader to engage with teams and individuals across the health system to drive and support medication safety improvement sends a message that the issue is a priority. The importance of the goals of medication safety improvement and the authoritative role of the Medication Safety Officer should be explicitly stated in the strategic plan. In addition, visibility given to the position through this and other board-level documentation helps to provide leverage needed to prioritize MSO work should daily demands threaten the time allotted toward the role. Strong senior leadership backing for implementation of the developed systems changes is critical to success.

Regulatory

» **Centers for Medicare and Medicaid Services (CMS):** Medication standards of practice associated with CMS certification are important to achieve in order to retain participation in the Medicare program. The MSO can function as a valuable resource for developing guidelines, evaluating tools and monitoring processes to ensure health system compliance and preparedness with CMS medication-use safety standards.[47] In addition, the MSO can design solutions that will improve, rather than hinder medication safety, while achieving compliance with the requirements. In this fashion, the MSO can help prevent underdeveloped, immediately applied reactions to new regulatory requirements, resulting in less safe systems. Since DNV (Det Norske Veritas) and CIHQ (Center for Improvement in Healthcare Quality) use the CMS Conditions of Participation for their accreditation programs, this is doubly important to health systems that are accredited through these organizations.

» **Accreditation Organizations:** As an established voice for safety improvement through their accreditation program, The Joint Commission promulgates National Patient Safety Goals and medication management standards associated with safe medication delivery requirements.[48] The MSO will support an organization to robustly

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and collaboratively approach compliance work. In addition, the Joint Commission sentinel event program has flagged areas of focus specific to medication safety that the MSO can build teams and processes around in response to new alerts as they are released.[47]

V EXISTING SAFETY ROLES: MODELS FROM HIGH-RISK INDUSTRIES

"Dedicated safety personnel are needed to 'establish safety-related goals, policies and practices, and to ensure that organizational standards on agency-wide issues are disseminated and understood by all employees''' [29(pg9)]

Given the complex nature of the healthcare environment, it is advantageous to create distinct roles that are accountable for initiatives with strategic value to both the bottom line and care delivery. Models to inform the strategy of centralized leader to drive medication safety improvement have precedence both in healthcare and in other high-risk industries.

Models from Healthcare

» **Patient safety officers** (PSOs) as a defined position was a new idea in 2004. The PSO may serve as the most parallel example from healthcare while presenting organizations with a dilemma. Despite the value a patient safety officer brings to a hospital, the position doesn't typically require the comprehensive knowledge of medication-use processes that the MSO can bring to a healthcare system's medication safety efforts.[49,50] A PSO serves as a generalist in the safety work of an organization. This can result in specific attention to medication error reduction being diminished. Given the importance of medication safety to patient safety, having a separate champion for medication safety in the organization makes sense. However, the system-oriented skill set required for a PSO position mirrors the skills and roles of the Medication Safety Officer.

» Hospitals employing an **infection preventionist** were more likely to consistently apply central line-associated blood stream infection or CLABSI prevention protocols, thusly keeping their patents safer from this hospital-acquired condition and reducing care costs.[28] Leadership qualities exhibited by PSOs such as cultivating a culture of excellence, inspiring staff and peers, and combining both strategic and local action to generate progress, are essential for infection preventionists to drive lasting improvements in their domain.[51] Cross-functional competencies include skill in implementation science, leadership and project management, technical knowledge, and infection prevention and control[52]—all similar to those supporting effective Medication Safety Officers. Despite acceptance that all practitioners must participate in the work, there is value in the role of a dedicated steward to lead infection control.[53]

» With the recent focus on overuse of antibiotics as contributing to microbial resistance, health systems have created **antimicrobial stewards** that stress their commitment to centralized management of health system antimicrobial improvement initiatives. The Centers for Disease Control and Prevention (CDC) has led the charge, but recently the CMS and the Joint Commission have mandated such a program in hospitals.[54-56] Collectively, the CDC, CMS and Joint Commission all consider appointing a single leader responsible for program outcomes and appointing a single pharmacist leader responsible for working to improve antibiotic use as a core element of the program. They also require documentation of leadership commitment and support for antimicrobial stewardship, thus, realizing that accountability and drug expertise are critical to the success of any program to impact patient outcome using anti-infectives.

> "Opportunities exist to learn from the many industries that have developed new methods for improving safety, reliability, quality, and value."[54(pg297)]

These centralized positions demonstrate the value of establishing defined roles for qualified individuals to take the helm of core safety and quality initiatives. These examples provide senior healthcare executives with evidence to aid in defining a primary role for a centralized expert to lead a health system's medication improvement efforts.

Models from Outside of Healthcare

Healthcare has recognized that where safety is concerned, learning from other high-risk industries is an important and provocative strategy.[58] This is aptly illustrated through the myriad of references to the **aviation industry** as a beacon to motivate action and illustrate the power and challenge of safety in complex environments. The **Navy** has defined aviation safety officers[59] and **The National Aeronautics and Space Administration (NASA)** aviation created an independent aviation safety management position in the aftermath of a sentinel event in 2001.[60] **Chemical laboratory** safety and security guidelines state that: "to establish and support a unified effort for safety management and to provide guidance to people at all levels, each institution should have at least one designated safety officer". The safety officer should be equipped with the knowledge, responsibility, and authority to develop and enforce an effective safety and security management system".[61 (pg42)] In **law enforcement**, a lack of centralized systemic approaches and personnel dedicated to addressing officer safety during high risk operations and training is seen as a contributor to injuries and deaths that could have been avoided. Examples from the broader spectrum of **public safety** that could serve as models to support a centralized safety service include fire prevention roles of health and safety officer and incident safety officer.[29] The **nuclear power** industry employs centralized safety positions that may serve as examples to inform efforts to implement a MSO.

There is value in translating this broader experience into the safety improvement efforts at your health system.

The impact of successes attached to the establishment of a singular individual whose focus on safety within their environments may help sow seeds for improvement. The healthcare examples above, while in different areas of specialty, demonstrate willingness to accept and embrace a similar role specific to medication-use safety improvement.

VI MAKING THE DECISION WITH CHALLENGES IN MIND

> "Individuals who insist that all interventions need to be validated by a randomized controlled trial need to come down to earth with a bump." [62(pg1460)]

Decision makers need to ask good questions to formulate action and address bias to identify risks and manage the expectations of their boards, teams and direct reports.[63] Sometimes this is done, particularly when innovating, without an evidence base. Despite the lack of evidence supporting the emerging role of the Medication Safety Officer, it should be embraced by senior healthcare executives and staff as an innovation that makes sense for health systems. As in the value of trusting the parachute without the need for a randomized controlled trial proving efficacy,[62] the Medication Safety Officer can protect their organizations from the freefall associated with unreliable and dangerous medication use processes. To best position the strategy in the reality of known challenges the following considerations and solutions are suggested:

» **Lack of frontline acceptance of managerialism:** Highly trained individuals in healthcare or in other industries resist being managed by others.[38,64] Bringing a peer on board with a team-oriented approach for collaboration on mission-critical activities in support of medication safety can help address this barrier. Bringing informal leaders in on the selection process will help to establish buy-in and support not only for the position but for the individual hired as the MSO.

» **Deterioration of focus due to scope creep:** A leader must champion the Medication Safety Officer and empower him/her to effectively prioritize his/her work. A frequently voiced complaint of MSOs who report to a director of pharmacy is that they are asked to take on additional roles unrelated to the MSO position (e.g., IV room supervision) that distract from their MSO functions. Senior healthcare executive support is instrumental in establishing infrastructure and a culture to support implementation of patient safety improvement strategies[19] which include the work of the MSO. Hence, where the MSO is placed on the organizational chart will enhance their ability to effect change and advocate that the position remains targeted on medication safety.

» **Reduction of time allotment due to frontline demands and service complexities:** Due to a strong documented connection with mission and value that is recognized by their colleagues, the MSO is in a position to seek collaborative solutions to these demands. Communication skills, peer respect and senior healthcare executive support for the position will enable the MSO to tactfully manage their workload without threatening the safety in the care delivery environment.

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VII CONCLUSION

Despite whether agreement exists on how many medication errors annually occur—preventable harm from medications is a recognized problem. Medication error is persistent in healthcare. Since first discussed in the literature in the mid-1970[65] and as reviewed by the IOM[1,4], these failures have resulted in numerous cases of patient harm, financial hardship and clinician and patient concern. Every error type is potentially tragic and costly, not only for the patients but for the professionals and organizations involved. Senior healthcare executives—whether in charge of a large multihospital system, a critical access hospital, or a large residential facility—are tasked with making decisions that impact a myriad of difficult challenges.

The MSO will:

» Champion medication safety through the sharing of expertise.

» Steward medication safety-related evidence, information, and knowledge generated by the organization.

» Advocate for medication safety as a core value at the organizational and individual level.

» Span boundaries to work across professional silos and hierarchy to engage all in medication safety efforts.

» Coordinate the investigation of medication-related errors reported within the institution, and review those reported by other institutions and in the literature. Based on this effort, develop and help implement system changes to mitigate future harm from these error mechanisms.

You need a strong implementer for change. It is important to place the Medication Safety Officer on your leadership team so that senior healthcare executives are assured that the organization:

» Covers essential functions to support medication safety.

» Employs a knowledgeable leader responsible for this work.

» Learns from medication mishaps to develop and implement system changes that will prevent their reoccurrence or will mitigate harm should they reoccur.

» Engages the right person—freed from selected frontline responsibilities—to lead the incremental hard work of transforming your medication management system into one that is highly reliable and safe.[63]

Senior healthcare executives are concerned with financial challenges that affect the safety of medication use and contribute to readmissions, malpractice costs and reputation threats. Overuse of opioids, product shortages, sterile product contamination, production pressure, difficult to use information technology, look-alike/sound-alike drugs, polypharmacy, staff reductions and worker fatigue are among the factors that negatively impact medication-use safety. The MSO can work with others to affect system changes that can mitigate the impact of preventable harm associated with these factors.

We are accustomed now to the IOM advocacy that medical errors are rarely the fault of individuals, but instead stem from weaknesses in our complex healthcare system.[1] Accidents involving drug use result from a series of failures in the medication

management system; consequently, many errors can be reduced or eliminated by carefully designed changes on how medications are obtained, stored, prescribed, prepared, labeled, distributed, administered and monitored. Since *To Err is Human*[1], culture, technology and a learning orientation to investigations are all seen as windows for understanding what types of change are needed to sustain success of programs to mitigate the persistent challenge of safe medication use. Individuals empowered in roles targeting change can motivate, organize and optimize the improvements we need.

Senior healthcare executives are accountable to their patients to respond to these challenges proactively with confidence and clarity, rather than waiting for tragedy to act. These leaders can draw from the experience of the Indianapolis hospital community that in 2006, were motivated to change course following an unfortunate series of medication failures that took the lives of three infants. Afterwards, all of Indianapolis' major health systems hired a pharmacist who specializes in, and is dedicated to, the principle of protecting patients from preventable harm associated with medications.[67] Isn't it time to establish the Medication Safety Officer position at your health system to enhance the safety and reliability of care for your patients?

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