Our Mission

The Purdue University College of Pharmacy’s Center for Medication Safety Advancement (CMSA) was established in March 2010 with the purpose of developing systems to reduce medication errors, prevent and manage adverse drug events, and promote safe medication use practices. CMSA is committed to serving the citizens of Indiana, the nation and the world through enhancing the discovery of safe medication use practices and delivering this knowledge to all who may benefit. Innovation and collaboration at the CMSA between faculty, staff and students link actionable discovery to entrepreneurial delivery, ultimately helping achieve a vision of making safe medication use common practice.
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BETTER CARE

Year by Year

In its literal sense, the horizon is an apparent demarcation between land and sky. Our view of the horizon is often impaired by obstacles in our line of sight. Changing our vantage point or removing obstacles provides a broader view of the horizon. Over this past year, the Center for Medication Safety Advancement (CMSA) has positioned itself to obtain a better view of what separates the current health care system from one in which safety is optimized. Our staff has worked tirelessly to remove obstacles that impair our ability to see the safest possible health care system become a reality.

Taking our Adverse Drug Event training on the road in association with the Indiana Hospital Association has provided us with an expanded view of the diversity of practice sites represented in our state. This has, in turn, provided us with greater insight into ways in which we can advance the safe use of medications in institutional settings.

Our national engagement with the Department of Veterans Affairs (VA) Administration has enabled us to gain a more comprehensive view of veterans’ care. It is a privilege to be a part of the important work that occurs in VA medical centers across the country. Improving the care that is provided to these heroes is one of the most satisfying activities in which we are engaged.

All that the center has accomplished over this past year would not have been possible without the ability of a special group of people to see what could lie beyond the visible horizon. The Lilly Endowment Inc. willingly invested in an idea that our Purdue University College of Pharmacy could make a meaningful contribution to improving the safe use of medications in Indiana and beyond. That support has had an immeasurable impact for the CMSA and for patients worldwide.

CRAIG K. SVENSSON
Dean of the College of Pharmacy and
Professor of Medicinal Chemistry and Molecular Pharmacology
As CMSA enters into its sixth year, the sun begins to set on our startup years and a new horizon awaits our maturing organization. Our first five years have built the solid foundation upon which we stand now and have set the tone for where we want to be five years from now.

This path forward is uncharted, but far from unfamiliar; we have regularly discovered and launched new ideas throughout our history. While our work has been impactful and rewarding, we cannot rest upon past success. With people around the world continuing to be unintentionally harmed by medication use every day, CMSA must continue to seek new pathways for educating, new methods and devices for discovering, and new partners with whom to share this journey.

From the time a medication is manufactured until it is administered, there are safety issues of an almost limitless number to be addressed. And yet, with these challenges come new opportunities and partnerships. A new day at CMSA is rising. We will continue to work tirelessly to ensure that safe medication use becomes common practice.

KYLE E. HULTGREN
Director
Center for Medication Safety Advancement
ADE Cures for Indiana

The Purdue University College of Pharmacy’s Center for Medication Safety Advancement (CMSA) continues to be an instrumental partner in the Indiana Hospital Association’s (IHA) Coalition for Care. IHA partnered with CMSA to target two national objectives: to positively impact adverse drug events and readmissions.

Ongoing for more than two years, the CMSA-IHA partnership has resulted in various successful programs, including the Indiana Adverse Drug Events (ADE) Roadshow, which CMSA launched in the summer of 2014. The three-month tour of Indiana was designed to have the medication safety experts at CMSA visit each patient-safety coalition in the state, providing a one-to two-hour presentation at each stop. The presentations included best practices in harm reduction that focused on the three strategic medication-related harms: 1) anticoagulation, 2) hypoglycemia and 3) opioid overdose. Specific improvement data also was provided to and reviewed with each coalition. Following each presentation, the speakers hosted an open question-and-answer forum so each group could have relevant medication safety-related questions answered.

The CMSA team’s unique opportunities to interact with so many health professionals established helpful new relationships and laid the foundation for improved patient care throughout Indiana.

John B. Hertig
Associate Director
Center for Medication Safety Advancement
CONCENTRATED
Work with the VA

The vista of collaborative possibilities will continue to emerge as a result of the new contract award received by the Purdue University College of Pharmacy CMSA from the Department of Veterans Affairs (VA) Administration. The new multiple-university VA award granted to CMSA and seven other universities is for one base year, with the potential for four one-year renewal options. Under the new contract award, each of the eight universities will submit individual proposals for specific VA projects for competitive evaluation and award. To date, the VA has made nine project awards, with CMSA the successful recipient of eight — at a total of $3,655,849, if all option years are realized.

CMSA will provide subject matter and technical expertise, process improvement leadership, education, and training for the VA. The support provided in the past and going forward occurs at all levels of patient-centered VA care. That includes direct patient-care units and their staff, clinical patient-care departments, management staff, and executive leadership. CMSA is fortunate to be able to partner with the VA in these multidimensional efforts to develop and share process-improvement strategies aimed at continually advancing high-quality standards for patient care.

CATHERINE R. SCOTT
Education Program Manager
Center for Medication Safety Advancement
The community of professionals dedicated to advancing practices of safe medication use has always been passionate and engaged. Whenever a great step forward is made, it is never made alone. Teamwork at this level is inspiring and drives all of those involved to become better.

One important initiative for CMSA this past year has been to take transformative steps into a leadership role at the national and international level. In 2014, CMSA became a collaborating partner with the American Society of Health System Pharmacists at the group’s annual meeting and Medication Safety Collaborative. CMSA also was invited to become a collaborating partner with the Abu Dhabi Health Services Company (SEHA) at that group’s Annual Medication Safety Conference in Abu Dhabi, United Arab Emirates.

CMSA is proud to continue its collaborative partnership with both conferences again in 2015. It is through such venues that new ideas are allowed to germinate into lifesaving practices. We stand in strong support of both organizations and the vision that they have in common with CMSA and the medication safety community at large.

**KYLE E. HULTGREN**  
Director  
Center for Medication Safety Advancement
Reformulating DATA ACCESS

At its most fundamental level, the concept of data mining is an attempt to find nuggets of truth and information in large data sets. One of the larger medication-related data sets in existence today is the FDA Adverse Event Reporting System (FAERS). As with most complex problems, the FAERS data set presents both an opportunity and a problem for its users.

In 2014, CMSA was presented with a question about which drugs, when reformulated based on clinical use or pharmacological properties, may present truly innovative and safe drug development opportunities for pharmaceutical manufacturers. To answer this question (and others), CMSA began work with database hub experts at Purdue University to centralize and to transform the millions of publicly available records from the FAERS data set. The project will allow the quick and easy retrieval and the collation of these records from across the world. The project, aptly named SafeRx, will allow more robust and meaningful data queries than what may currently be available through the FDA open-access site at https://open.fda.gov.

Although the initial SafeRx data hub will provide insight into reported adverse events, there are plans to rapidly grow the data set over the next three to five years through connection to other publicly available medication safety data. SafeRx eventually will provide direction for future drug development, practice-based research and additional insight into the safe use of medications. Making safe medication use common practice is central to the CMSA mission, and the SafeRx data hub is a promising path to achieving that mission.

DANIEL D. DEGNAN
Senior Project Manager
Center for Medication Safety Advancement
Organic Safety Training

Members of the CMSA staff have significant roles in the academic program of the Purdue University College of Pharmacy, which strengthens our students’ education and overall experience. In addition to providing oversight and guidance for curriculumwide patient safety instruction, the CMSA staff is involved in core and elective didactic courses and in the experiential component of the curriculum.

Dr. Kyle Hultgren and his colleagues developed and delivered a new three-credit-hour Patient Safety and Informatics core course for pharmacy students enrolled in the P-3 year. Students have the benefit of many hands-on applications that are based on current CMSA initiatives and research. Dr. John Hertig coordinates and delivers, in conjunction with other faculty, the Practice Management and Marketing course in the final semester of the P-3 year. Projects and presentations during the course enhance students’ verbal and written communication skills and stress the importance of effective teamwork. Drs. Hultgren, Hertig and Daniel Degnan serve as preceptors for advanced practice experiential clerkships for pharmacy students in their P-4 year, when students work with medication safety experts to expedite project and programmatic efforts at CMSA.

In addition, staff members at CMSA routinely participate in College of Pharmacy co-curricular activities by serving as speakers, facilitators and committee members.

Steven A. Scott
Associate Head for Education, Department of Pharmacy Practice
and Associate Professor of Clinical Pharmacy
REWRITING
Insulin Pen Usage

CMSA is passionate about preventing harm associated with medications and medication errors. Our research in insulin pen safety is one example of that passion in action.

The insulin pen has provided several advantages over the syringe and vial method in treating people with diabetes. Despite advantages like controlling dose variability, reducing the risk of hypoglycemia and improving the ease of use for patients, disadvantages also have been identified. Of primary concern are numerous reports over the past five years of health care professionals reusing insulin pens on multiple patients, thereby exposing patients to possible transmission of bloodborne pathogens such as HIV and hepatitis.

CMSA has partnered with the Institute for Safe Medication Practices and BD Medical to conduct research regarding the safe use of insulin pens in multiple settings. Our goal in providing education nationwide to help others learn from our research is to prevent patients from experiencing this tragic medication error.

KATELYN R. BROWN
Medication Safety Fellow
Center for Medication Safety Advancement
A Case of Safety

The Medication Safety Residency, founded by CMSA, is a one-year postgraduate training program that was designed to enhance scientific collaboration between Purdue University and Eli Lilly. As the 2014-15 resident, I spent six months at CMSA and six months at Eli Lilly and Company in Global Patient Safety. The goal of this program is to enhance the pharmacist’s knowledge and expertise in medication safety across a wide variety of clinical, academic and industrial settings.

In just a short period of time, I have had many opportunities to collaborate with various health care organizations, including the Indianapolis Coalition for Patient Safety, the Indiana Hospital Association, and IU Health on a range of projects to improve the quality and safety of care. Our team continues to be focused on and very excited about developing a novel score to predict bleeding risk in hospitalized patients who are receiving anticoagulants. We hope to provide a comparative validation of the risk score and integrate it with a clinical decision support system to reduce patient harm.

Through all of these experiences, I have gained an incredible amount of knowledge about patient safety, and I am looking forward to sharing what I have learned with others. I am thankful for all the opportunities I have been given this year. It has been a wonderful journey.

TRANG A. TRUONG
Medication Safety Resident
Center for Medication Safety Advancement
The Loading Dose of EDUCATION

Working hands-on with medication safety projects has given us the opportunity to apply our didactic education to real world issues. Not only have we been able to apply our clinical knowledge, but thanks to the new patient safety course in the College of Pharmacy, we also have utilized additional classroom training. Alongside the CMSA team, we developed an insulin toolkit that addresses many patient safety concerns within hospitals. The toolkit gives healthcare professionals a reference of best practices to ensure that the processes in their institution provide patients with safe and optimal medication therapy. This project helped open our minds to the opportunities pharmacists have to impact care on a global scale. It also aided greatly in developing our collaboration, communication and teamwork skills —of universal value in the field of pharmacy.

As interns at CMSA, we have truly valued the opportunity to explore nontraditional careers, because there are so many options in today’s dynamic health care field. The experience has allowed us to grow as leaders both personally and professionally, while also equipping us with an impactful patient safety focus as future pharmacists. The CMSA team has been first class, and we could not have asked for better mentors.

ANDREW KLUEMPER
Third Professional Year,
College of Pharmacy Student

ADAM SMITH
Second Professional Year,
College of Pharmacy Student

JACOB MARTIN
Second Professional Year,
College of Pharmacy Student
CMSA CAPSULE
Dissolving the Numbers for 2014-15

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PUBLICATIONS

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International PRESENTATIONS
ONE MISSION
Making Safe Medication Use
COMMON PRACTICE

31 STATES
5 COUNTRIES
Impacted by CMSA

5,132
Health Care Professionals Trained

ONE REGISTERED
COPYRIGHT

ONE

23
Students / Interns
TRAINED
For a **CONSULTATION**

We encourage you to explore our CMSA website and bookmark it as a gateway to some of the most up-to-date medication safety information available. The site explains CMSA, details many current projects, and links you to new presentations and publications as they become available. Stay closely tuned to our medication safety blog, a great source of hot topic information.

**WWW.PHARMACY.PURDUE.EDU/CMSA**

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