



Program Brief Network of Patient Safety Databases



Patient Safety Organizations: A Summary of 2014 Profiles

The safety of patients in health care settings remains a national priority and an important challenge. The Patient Safety Organization (PSO) program, which was authorized by the Patient Safety and Quality Improvement Act of 2005 (PSQIA or the Patient Safety Act) and administered by the Agency for Healthcare Research and Quality (AHRQ), makes it possible for health care providers to voluntarily report information on patient safety events under legal protection and to use this information to develop patient safety interventions and solutions. In turn, changes in organizational culture in the health care setting, particularly the safety culture, increasingly have supported health care leaders sharing information about patient safety concerns at their institutions, including highly regarded hospitals.¹

Policymakers also recognize PSOs as essential contributors to national patient safety improvement efforts. For example, the National Academy of Science/Institute of Medicine's recently released report on improving diagnosis in health care, the third report in their renowned *To Err Is Human* series, identifies the PSO program as an important tool for increased reporting and analysis of patient safety events.² Furthermore, in less than a year (January 2017), hospitals with more than 50 beds may work with a PSO in order to contract with health plans in insurance exchanges.

PSOs are asked to complete the PSO Profile Form annually to provide additional detail on the PSO program. The PSO Profile Form provides retrospective information about a PSO's operations, and the numbers and types of providers it serves. This brief looks at the



evolution of PSOs on the basis of profile information that was voluntarily submitted for 2014. Future briefs will summarize information for coming years.

Overall, the brief covers:

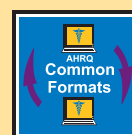
- The role of PSOs in health care
- Characteristics of PSOs
- Characteristics of providers contracted with PSOs
- Event reports received by PSOs
- Examples of activities that PSOs undertake to support patient safety improvement

¹Nanji KC, Patel A, Shaikh S, et al. Evaluation of perioperative medication errors and adverse drug events. *Anesthesiology*. 2016 Jan;124(1):25-34.

²National Academies of Sciences, Engineering, and Medicine. *Improving Diagnosis in Health Care*. Washington, DC: The National Academies Press; 2015.



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The Role of PSOs in Health Care

Both the mission and the primary activity of a PSO must be to conduct activities to improve patient safety and the quality of health care. The term *safety* refers to reducing risk from harm and injury, whereas the term *quality* suggests striving for excellence and value (defined as the health outcomes achieved per dollar spent). By addressing common, preventable adverse events, a health care setting can become safer, thereby enhancing the quality of care delivered.

PSOs aim to help providers detect and reduce risks and hazards associated with their delivery of care that may lead to patient harm. PSOs create a secure environment in which clinicians and health care organizations can share information, including event reports, and learn from each other's experiences. PSOs can analyze provider data and assist with root-cause analysis of individual events, thus identifying targets for improving patient safety and quality. PSOs also can measure provider performance and patient outcomes that relate to quality of care other than the patient safety dimension.

PSOs collect and analyze patient safety work product (PSWP) from providers in a standardized manner that permits valid comparisons of similar cases across similar providers. The aim of aggregating PSWP locally, regionally, and nationally is to develop insights into the underlying causes of harm from patient safety events. Aggregating standardized information about patient safety events from multiple hospitals and other providers is necessary to identify patterns and trends in patient safety events and to accelerate the process of learning how best to improve patient safety.

Characteristics of PSOs

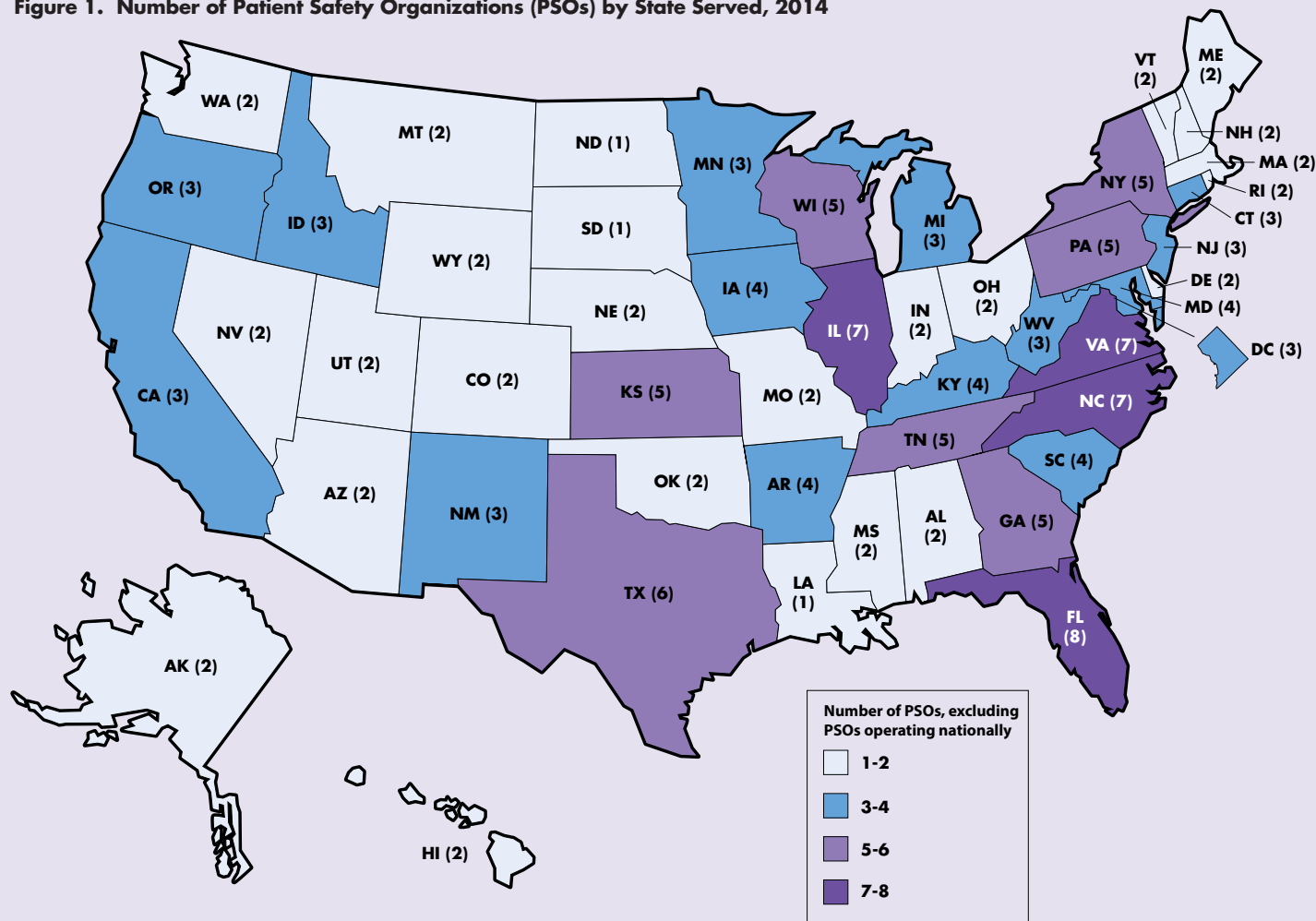
The Patient Safety Rule permits many types of entities to seek listing as a PSO; those seeking PSO listing may be an entire organization or a component of an organization, a public or private entity, or a for-profit or not-for-profit entity. The Patient Safety Act excludes certain entities from becoming listed as a PSO; these include health insurance issuers, a component of a health insurance issuer, regulatory agencies, organizations that serve as agents of regulatory agencies (i.e., Medicare Quality Improvement Organizations), accreditation and licensure

entities, and entities that administer a Federal, State, local, or tribal patient safety reporting system to which health care providers are required to report by law or regulation.

As of the end of 2014, AHRQ had listed 81 organizations as PSOs. The following are some key characteristics self-reported for 2014 by 68 of those PSOs:

- About one-third of all PSOs were health care providers, and 29 percent were professional or trade associations. The remaining PSOs were consulting firms, consumer advocacy organizations, insurers other than health insurers, software developers, educational establishments, and other business types. The PSO type of business with the largest increase in number from 2012 to 2014 was health care provider organizations (from 17 to 22). The proportion of PSOs that were health care providers increased from 26 percent to 32 percent.
- In terms of profit status, the majority of PSOs were not-for-profit entities (60 percent); in terms of organizational structure, 9 out of every 10 PSOs (91 percent) were components of a larger entity. Among component PSOs, slightly more than half were not a separate legal entity in 2014. By comparison, in 2012, component PSOs that were separate legal entities slightly outnumbered those that were not separate legal entities.
- More than half (56 percent) of PSOs served providers in all U.S. States and territories. In addition to these 38 national PSOs, in 2014, every State had at least 1 regional PSO. In 2014, the average number of regional PSOs per State was three, up from two in 2013. States in the South Atlantic area of the country had the most regional PSOs.
- More than half (56 percent) of PSOs in 2014 addressed patient safety across the full spectrum of clinical specialties, rather than focusing on a specific medical specialty. Among PSOs with a specific medical focus, the most common specialties were anesthesiology, emergency medicine, general surgery, and pharmacy. See Figure 1 for the geographic distribution of PSOs.

Figure 1. Number of Patient Safety Organizations (PSOs) by State Served, 2014



Source: Agency for Healthcare Research and Quality, Patient Safety Organization Profile, Calendar Year 2014.

Characteristics of Providers Contracted With PSOs

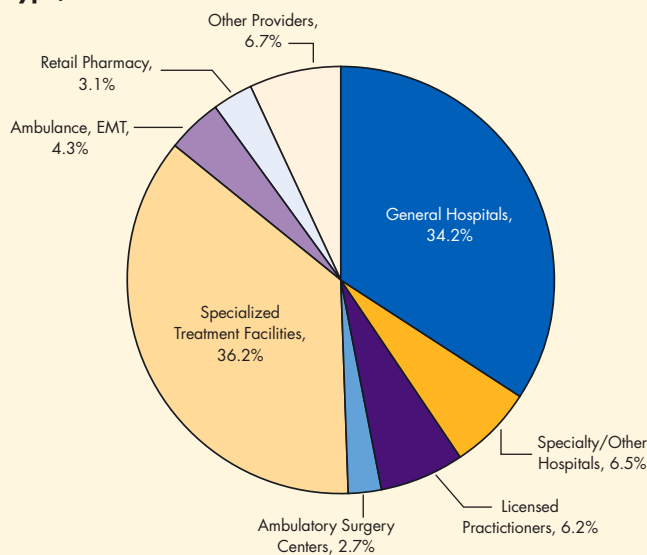
Overall, PSOs had contracts or agreements with more than 19,000 providers. A provider may be an individual practitioner, a provider entity, or a health system comprising several entities. The following are some key characteristics of the providers—either individuals or entities—served by PSOs:

- Although 60 percent of PSOs in 2014 had fewer than 50 providers under contract, the 10 largest PSOs had on average almost 1,700 providers under contract. Since 2012, PSOs with more than 250 providers under contract tripled in number, whereas PSOs with under 10 contracted providers decreased.
- Specialized treatment facilities (e.g., dialysis, chemotherapy, psychiatric facilities) and general hospitals made up a majority of providers that submitted the PSO profile (36 percent and 34 percent, respectively). “Other” providers included ambulance and emergency medical services, ambulatory surgery centers, and retail pharmacies.
- Since 2012, the providers with the fastest rate of increase in contracts with PSOs were retail pharmacy; ambulatory surgery centers; and ambulance, emergency medical technician, paramedic services, and so forth. The number of contracted hospitals increased by 269 over this period.

- General hospitals and specialized treatment facilities under contract with a PSO were geographically diverse across U.S. census regions. However, the majority of these facilities were found in metropolitan areas with populations greater than one million.
- The average hospital associated with a PSO had more beds than the average hospital in the United States.
- The average hospital under PSO contract and the average U.S. hospital had a similar likelihood of being a private, nonprofit hospital.
- Slightly fewer than one-third of general hospitals contracting with PSOs had an academic affiliation, either as part of an academic medical center or as a teaching affiliate.

Figure 2 shows the distribution of providers contracting with PSOs by type.

Figure 2. Distribution of PSO Contracted Providers by Type, 2014



Abbreviations: EMT, emergency medical technician; PSO, Patient Safety Organization
Source: Agency for Healthcare Research and Quality, Patient Safety Organization Profile, Calendar Year 2014.

Event Reports Received by PSOs

In conjunction with the creation of PSOs, PSQIA requires AHRQ to administer a Network of Patient Safety Databases (NPSD) to analyze and report aggregated patient safety event data submitted by PSOs. The PSO Privacy Protection Center (PSOPPC) must render nonidentifiable the data that PSOs have voluntarily submitted under PSQIA, and the NPSD

aggregates those data for analysis. The NPSD will analyze these data in order to better understand the underlying causes of patient harm and to develop information on how to improve patient safety. Both the PSOPPC and the NPSD are operated under contract to AHRQ.

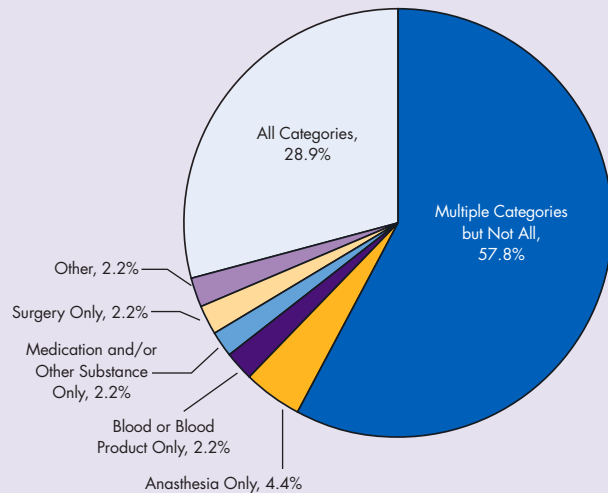
The Common Formats, developed by AHRQ, facilitate the collection and reporting of patient safety events in a standardized manner across different health care providers. Common Formats are broadly divided into two categories: (1) generic ones that apply to all patient safety events and (2) event-specific ones that relate to certain high-frequency event types and are used together with the generic modules.

The following are some key characteristics of reports collected by PSOs self-reporting for 2014:

- Twenty-eight percent of providers under contract with a PSO sent at least one patient safety event report to a PSO, for a total of about 2,280,000 reports.
- About one-quarter of PSOs received 10,000 or more patient safety event reports from providers in 2014, and half that many received between 1,000 and 10,000 reports from providers.
- Sixty-six percent of PSOs (or 45) received data for at least one patient safety event report in a standardized format in 2014:
 - Seven PSOs received patient safety reports in AHRQ Common Formats. An additional 18 PSOs received reports in both AHRQ Common Formats and another standardized format.
 - Forty-three PSOs received the reports electronically.
 - Thirty-nine PSOs collected reports in multiple or all event categories (26 PSOs in multiple but not in all event categories, and 13 PSOs in all event categories). PSOs that collect patient safety event reports for single event types did so only for anesthesia, surgery, medication or other substance, blood or blood product, or another unspecified event type.
- Eight PSOs submitted event reports to the PSO Privacy Protection Center in 2014, accounting for about 6 percent of patient safety event reports submitted by providers to PSOs. Two of these PSOs collected information on all event categories, and the other six collected information only on anesthesia-related events. An additional six PSOs submitted test data to the PPC.

Figure 3 shows the distribution of PSOs by type of event reports collected.

Figure 3. Distribution of Patient Safety Organizations by Type of Event Reports Collected, 2014



Source: Agency for Healthcare Research and Quality, Patient Safety Organization Profile, Calendar Year 2014.

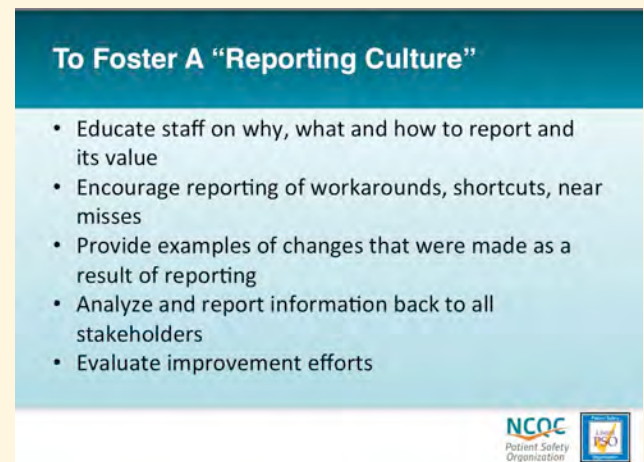
Examples of PSO Activities

Among AHRQ-listed PSOs that self-reported for 2014, the types of resources and services most universally provided were educational opportunities such as webinars (87 percent of PSOs). More than three-fourths of PSOs offered analytical support for adverse events, and a similar share provided comparative reports. Slightly over 70 percent of PSOs provided networking events (e.g., access to subject matter experts), and 58 percent provided technical assistance (e.g., on-call support by experts). Following are examples of these PSO activities.

Educational Opportunities. The North Carolina Quality Center PSO (NCQC PSO) hosts in-person learning sessions once a year, at a minimum, as well as monthly virtual teleconferences or webinars. For example, their webinar on “The Importance of Reporting Safety Events” shared knowledge with PSO members about the various benefits of creating an environment where reporting of safety events is encouraged, as well as ways to encourage reporting. The webinar described how reporting not only increases awareness of specific events but also brings secondary benefits,

such as creating a culture of safety and transparency. A slide from that webinar (Figure 4) conveys techniques that can be employed to encourage reporting, such as sharing examples of how the event reports led to changes that reduced health care risks and patient harm. The webinar indicates that this approach—linking the action (reporting) to an outcome (improved safety)—is effective in fostering health care provider support for an initiative.

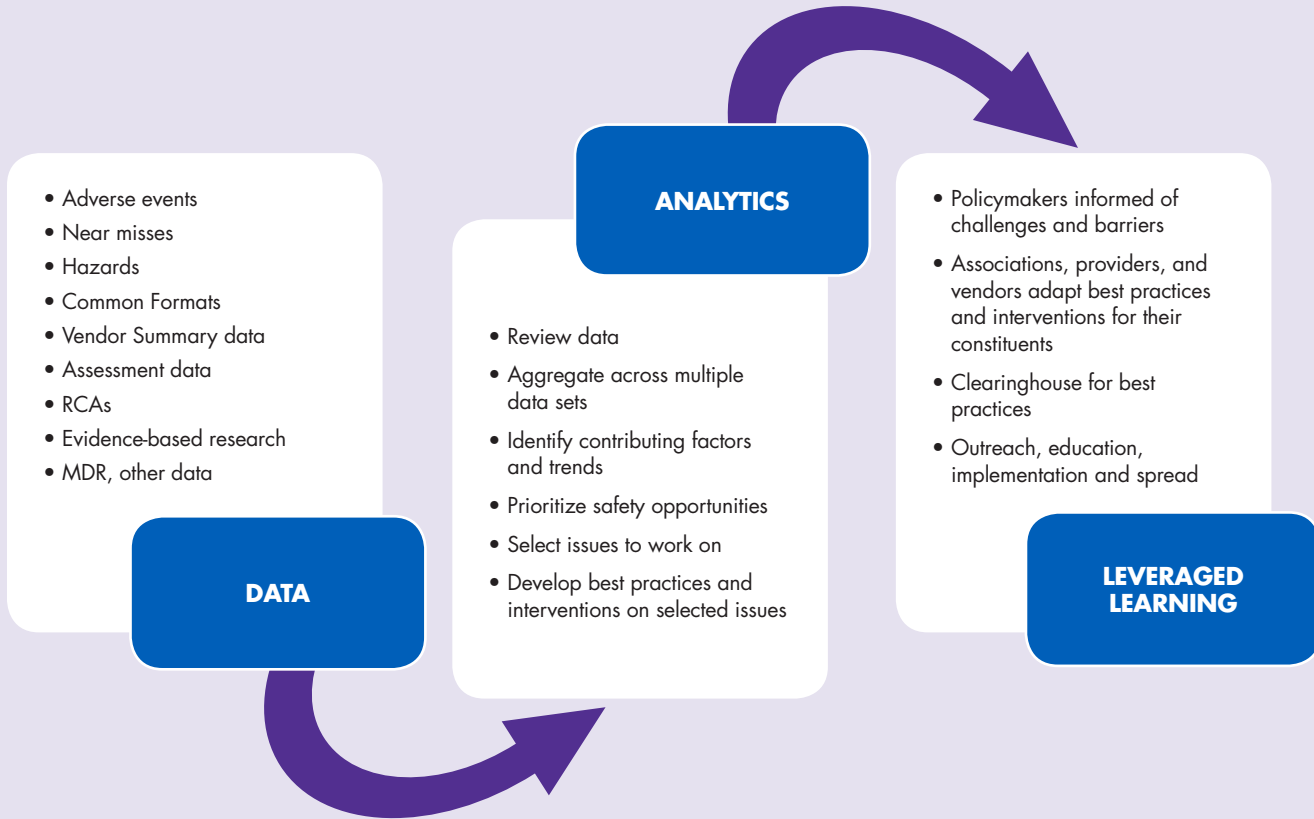
Figure 4. NCQC PSO’s Webinar Slide on How to Foster a “Reporting Culture”



Source: Slide Reproduced From: North Carolina Quality Center. “The Importance of Reporting Safety Events.” 2014.

Analytic Support for Adverse Events. Lessons learned from the analysis of collected event reports by PSOs can be used to educate members and the larger community of health care providers and other stakeholders who are seeking to improve the quality of health care. For example, based in large part on events reported by PSO members, ECRI Institute PSO publishes an annual report of the top 10 patient safety concerns for the year. This report is one of many “leveraged learnings” on how ECRI Institute PSO uses data analytics to develop educational materials for their members (see Figure 5).

Figure 5. ECRI Institute PSO’s Use of Data Analytics to Develop Educational Materials



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Data collection in a standardized format is key to aggregation and ensures that data quality is high enough to perform meaningful analytics. Clarity PSO has helped its members to adapt their information technology (IT) system to the AHRQ Common Formats using an incremental approach. The PSO considered having the same platform across member hospitals be essential for implementing the AHRQ Common Formats; their member hospitals typically have an IT administrator available to make changes.

After first attempting to align their legacy adverse event reporting system with the AHRQ Common Formats by cross mapping the already collected data, Clarity PSO decided that it would be more accurate and more straightforward if they integrated the terminology of the Common Formats into the data collection process via

their health care safety portal system. They are taking an incremental approach to accomplish this: they started by implementing the Common Formats used for all types of events (Healthcare Event Reporting Form, Patient Information Form, and Summary of Initial Report Form) and then applying Common Formats for falls, pressure ulcers, surgery/anesthesia, medications, and blood/blood products. Over time, they will add the device/health information technology, perinatal, and venous thromboembolism formats.

Networking. Through one of the MHA Keystone Center PSO’s Safe Table events, it surfaced that concentrations of compounded oral liquids for children were not standardized and this lack of standardization had contributed to errors and patient harm, especially during transitions of care. For example, 77 drugs reviewed had

Figure 6. Pharmacy Standard Resulting From Collaboration: Rifampin Suspension Example

Drug name:	Rifampin	Dosage Form:	Suspension
Concentration:	25 mg/mL	Shelf Life:	28 days
Route:	Oral	Storage:	Room temperature or refrigerate
Volume:	120 mL	Auxiliary Labeling:	Shake Well

Ingredients	QS	Quantity	Units
Rifampin 300-mg capsule		10	capsule
Ora-Sweet/Ora-Plus*	Y	qs ad 120	mL

Directions

1. Open capsules and empty contents into a mortar.
2. Triturate contents to a fine powder.
3. Levigate with a small amount of base solution to form a paste.
4. Add base solution in increasing amounts while mixing thoroughly.
5. Transfer contents of the mortar to a graduated cylinder.
6. Rinse the mortar and pestle with base solution and pour into graduated cylinder.
7. Add base solution to the graduated cylinder to achieve total volume of 120 mL.
8. Transfer contents of the graduated cylinder into an appropriate size plastic amber bottle. Shake well to mix.

Adapted from the following source: Michigan Pediatric Safety Collaboration. State-Wide Initiative to Standardize the Compounding of Oral Liquids in Pediatrics. <http://www.mipedscompounds.org/standard-formulations>. Accessed February 8, 2016.

three or more different compounding concentrations. In collaboration with pharmacy experts in the state, the PSO and its members began a process to study the compounding variability for these medications and to develop standard concentrations for 120 different medications. As a result of the standardization effort, 470 unique formulations for 147 drug entities were reduced to 104 different concentrations for 100 drugs. Pharmacies across the state of Michigan are now implementing the standards and implementation in other States has begun (see Figure 6).

Technical Assistance. Wake Up Safe, a PSO specializing in pediatric anesthesiology, is engaged in initiatives that are designed to assist their members in process

improvement. Notably, they require all members wishing to submit information on an adverse event to their PSO to perform a root-cause analysis (RCA). An article published in the July 2014 issue of *Anesthesia and Analgesia* describes Wake Up Safe’s standardized RCA process, which requires that three anesthesiologists who were not involved in the event analyze the event with an RCA to identify the causal factor(s). Among the many tools that Wake Up Safe makes available to its members to identify root causes is a structured questionnaire that, when completed, provides detailed information to users on the underlying factors leading to safety events that can be used to prevent recurrence.

Conclusion

The PSO Profile Form information presented in this brief describes the evolution of a program and of PSOs as they work with health care providers to improve patient safety and quality and reduce harm. The amount of data being collected, analyzed, and used to affect safety and quality is growing. As the PSO program continues to grow and mature, the contributions of these organizations are becoming more sophisticated and more varied. Stakeholders endeavoring to improve patient safety should look to this annual brief for more information about PSOs and their activities in future years.

To learn more about PSOs, visit www.pso.ahrq.gov.

- Providers can learn about how to work with and choose a PSO.
- Organizations can learn more about the process to become a PSO.
- Users can access a full list of AHRQ-listed PSOs.

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