Pennsylvania
Patient Safety Authority

2014 Annual Report

April 30, 2015

Letter from the Board Chair

April 30, 2015

Dear Fellow Pennsylvanians:

Marking its 10th year of reporting in 2014, the Pennsylvania Patient Safety Authority (Authority) continues to work to improve patient safety in Pennsylvania's healthcare facilities through data analysis and collaboration. By December 2014, the number of reports submitted through the Pennsylvania Patient Safety Reporting System (PA-PSRS) reached over 2.2 million. High-harm events decreased 45% since 2005. Serious Events in 2014 decreased by 6.2% per month compared with 2013. Incidents also decreased by 2.4% per month compared with 2013. Time will tell whether these decreases in Serious Events and Incidents are a trend or an anomaly for 2014.

Through its Patient Safety Liaison (PSL) Program, the Authority conducted 189 educational sessions for almost 10,000 individuals. Audiences for these sessions included hospital leadership, patient safety committees, nurses, physicians, patient safety officers, respiratory therapists, radiology staff, and many others. Topics for the sessions included falls, human factors, culture of safety in the operating room, teamwork and communication, TeamSTEPPS, root-cause analysis, MCARE reporting requirements, the value of near-miss reporting, preventing wrong-site surgeries, and others.

Collaborations with healthcare facilities, the Hospital and Healthsystem Association of Pennsylvania (HAP), and other Pennsylvania healthcare organizations continued through the federal Partnership for Patients program. The Authority's collaborations in Pennsylvania focus on reducing falls,

wrong-site surgeries, and adverse drug events statewide. All collaborations have resulted in decreased harmful patient safety events. Although the federal program has ended, the Authority will continue to collaborate with healthcare facilities on these areas as well as others.

The Authority marked its 10th anniversary in March 2014 of publishing the *Pennsylvania Patient Safety Advisory*. The award-winning academic journal is the Authority's flagship publication based on analysis of adverse events and near misses occurring in Pennsylvania's healthcare facilities. The Authority has published more than 475 safety-focused articles, with over 4,100 changes in Pennsylvania acute care facilities and nursing homes directly attributed to the *Advisory* articles since 2005.

Last year, the Authority continued to educate Pennsylvania healthcare workers in hospitals, nursing homes, ambulatory surgical facilities, and professional organizations across the commonwealth in infection prevention. A long-term care best practice assessment tool was introduced, as well as new analytical tools for nursing homes in 2014.

As the new chair of the Pennsylvania Patient Safety Authority's Board of Directors, I look forward to working with Pennsylvania healthcare facilities and nursing homes to further improve patient safety through the new educational initiatives and programs detailed in this report.

On behalf of the board, I am pleased to submit this annual report for your review.

Rachel Levine, MD
Acting Chair, Board of Directors
Pennsylvania Patient Safety Authority

Pennsylvania Patient Safety Authority

Board of Directors

Staff

Table of Contents

Addenda

Pennsylvania Patient Safety Authority 2014 Annual Report

Introduction

The Pennsylvania Patient Safety Authority is an independent state agency established under Act 13 of 2002, the Medical Care Availability and Reduction of Error (MCARE) Act. It is charged with taking steps to reduce and eliminate medical errors through the collection of data, identification of problems, and recommendation of solutions that promote patient safety in hospitals, ambulatory surgical facilities (ASFs), birthing centers, and abortion facilities.

The Authority initiated statewide mandatory reporting in June 2004, making Pennsylvania the only state in the nation to require reporting of Serious Events and Incidents (near misses). All reports are confidential and non-discoverable, and they should not include any patient or provider names. In 2007, the legislature added a chapter to the MCARE Act that addressed the reporting of healthcare-associated infections (HAIs) in Pennsylvania and required infection reporting from nursing homes.

This report provides a high-level overview of the Authority's 2014 activities. More detail is provided in several addendums referenced in this report.

In June 2014, the Authority marked 10 years of reporting through the Pennsylvania Patient Safety Reporting System (PA-PSRS). The Authority uses the patient safety event reports in many ways to reduce and avoid patient harm to Pennsylvanians being treated at reporting facilities. See "Breadth of Authority Activities" for an illustrative look at the Authority's activities over the last 10 years.

Data Collection and Analysis Overview

PA-PSRS is a secure, web-based system that permits medical facilities to submit reports of what the Pennsylvania MCARE Act defines as "Serious Events" and "Incidents" (see **Addendum A** for definitions). Statewide mandatory reporting through PA-PSRS went into effect June 28, 2004. All information submitted through PA-PSRS is confidential, and no information about individual facilities is made public.

As defined by the MCARE Act, PA-PSRS is a facility-based reporting system. It is important for Pennsylvania patients and their families to recognize there are other complaint and error reporting systems that are available for individuals. The Department of Health can issue sanctions and penalties, including fines and forfeiture of license, to healthcare facilities that fail to comply. Citizens can file complaints related to hospitals and ASFs by calling the Department of Health at (800) 254-5164; for complaints related to birthing centers, they can call the Department of Health at (717) 783-1379. Complaints against licensed medical professionals can be filed with the Department of State's Bureau of Professional and Occupational Affairs at (800) 822-2113.

All reports to PA-PSRS are submitted by facilities through a process identified in their patient safety plans, as required by the MCARE Act. However, the MCARE Act provides one exception to this facility-based reporting requirement. Under this exception, a healthcare worker who feels that his or her facility has not complied with the MCARE Act reporting requirements may submit an anonymous report directly to the Authority. Anonymous reports are specifically addressed later in this report.

To access PA-PSRS, facilities need only a computer with Internet access and to register with the Authority. There is no need for a facility to procure costly equipment or software to meet statutory reporting requirements, and only minimal self-directed training is necessary to learn how to navigate PA-PSRS. In addition, the Authority developed a subsystem in PA-PSRS that allows facilities to interface their own data collection systems with PA-PSRS for the submission of non-harm events. In 2014, over 60% of all reports submitted to the Authority came through this interface process. The use

Breadth of Authority Activities

2.2 million reports submitted to the Authority from June 2004 through December 2014

475 *Advisory* articles published since 2004, with readership in 44 countries and subscribers in all 50 states

4,100 reported changes in Pennsylvania acute care facilities and nursing homes attributed to *Advisory* articles from 2006 through 2014

11,900 Advisory-based CME credits earned by Pennsylvania healthcare professionals from 2006 through 2014

CME

8,000 healthcare professionals participated in over 189 Authority education sessions in 2014

900 visits made by PSLs to individual healthcare facilities in 2014

Patient Safety Liaison Program

200 Pennsylvania healthcare organizations and government agencies partnered with the Authority in collaborations in 2014

1,500 Pennsylvania healthcare workers received education on infection prevention in 2014

New analytical tools and the Long-Term Care Best-Practice Assessment Tool for nursing homes developed in 2014

14 groups and individuals recognized for their patient safety efforts

I am Patient Safety

MS15211

of the interface significantly reduces the resources needed by facilities to enter this important information.

Reporting facilities submitted over a quarter of a million reports through PA-PSRS in 2014. Approximately 3% of non-infection reports involved some level of patient harm. As with all reporting systems, the information collected is dependent on the degree to which facility reporting is accurate and complete. The reporting cultures and patterns in each facility, and their interpretations of the MCARE Act, do lead to reporting variation. The Authority is primarily a data collection, analysis, and education agency. The Authority does not audit the information provided by the facilities. The Pennsylvania Department of Health has primary regulatory authority for the MCARE Act. As such, the Department of Health receives all reports with patient harm, has the authority to audit facility reporting, and can fine facilities for failure to report.

The Authority has been working closely with the Department of Health and facility stakeholders to reduce this reporting variation for patient harm events. This standardization initiative resulted in a set of reporting principles. These principles will be effective in April 2015.

This section highlights select data analyses and graphics. Additional information can be found in **Addendum B**.

Reports by Month and Submission Type

Between January 1 and December 31, 2014, Pennsylvania acute care facilities (all reporting facilities with the exception of nursing homes) submitted 240,778 reports through PA-PSRS, bringing the number of reports submitted by these facilities since the program's inception to 2,271,374. Table 1 shows the distribution of submitted reports by month for calendar year 2014.

Reports by Facility Type

As shown in Table 2, the total number of reports submitted through PA-PSRS in 2014 surpassed a quarter million. The vast majority of reports (87.1%) were submitted by hospitals; nursing homes, which submit only HAI reports, account for an additional 10.7% of the overall total.

Table 1. Reports Submitted through PA-PSRS in 2014 by Month, Acute Care Facilities

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Serious Events	625	549	620	605	632	590	535	609	537	605	567	606	7,080
Incidents	21,332	19,361	18,348	21,169	19,237	17,440	18,225	22,974	19,602	20,716	16,929	18,365	233,698
Total	**21,957**	**19,910**	**18,968**	**21,774**	**19,869**	**18,030**	**18,760**	**23,583**	**20,139**	**21,321**	**17,496**	**18,971**	**240,778**

Table 2. Reports Submitted through PA-PSRS in 2014 by Facility Type

FACILITY TYPE	HOSPITALS	AMBULATORY SURGICAL FACILITIES	BIRTHING CENTERS/ ABORTION FACILITIES	ALL ACUTE LEVEL FACILITIES	NURSING HOMES*	ALL FACILITIES REPORTING VIA PA-PSRS
Number of reports submitted	234,847	5,711	220	240,778	28,825	269,603
Number of facilities active for year ending December 31, 2014	239	302	24	565	703	1,268

* Nursing homes only submit reports of healthcare-associated infections through PA-PSRS.

High-Harm Events Decrease, Along with Patient Deaths

Approximately 2.9% of submitted reports were Serious Events, while 97.1% were Incidents. In 2014, the Authority received 20,065 reports per month on average, an average decrease of 486 (2.4%) per month from 2013, the first annualized decrease in reporting through PA-PSRS. In 2014, the Authority received 208 reports of events from acute-level facilities that may have contributed to or resulted in the patient's death, a decrease of 13 reports (5.9%) from 2013. Additionally, reports with harm scores of G, H, and I are considered high-harm events. For example,

an event that occurred and resulted in permanent harm to the patient is given a harm score of G, and an event that occurred and resulted in a near-death event is given a harm score of H. An event resulting in a patient death is given a harm score of I. Figure 1 below shows these high-harm events have been steadily decreasing annually since 2005, both in number and as a percentage of Serious Events. More about Pennsylvania healthcare facility data can be found in **Addendum B**.

Figure 1. High-Harm Reports Submitted by Acute-Level Facilities through PA-PSRS by Year, with Percentage of Annual Serious Events in Parentheses, 2005 to 2014

NO. OF HIGH-HARM REPORTS
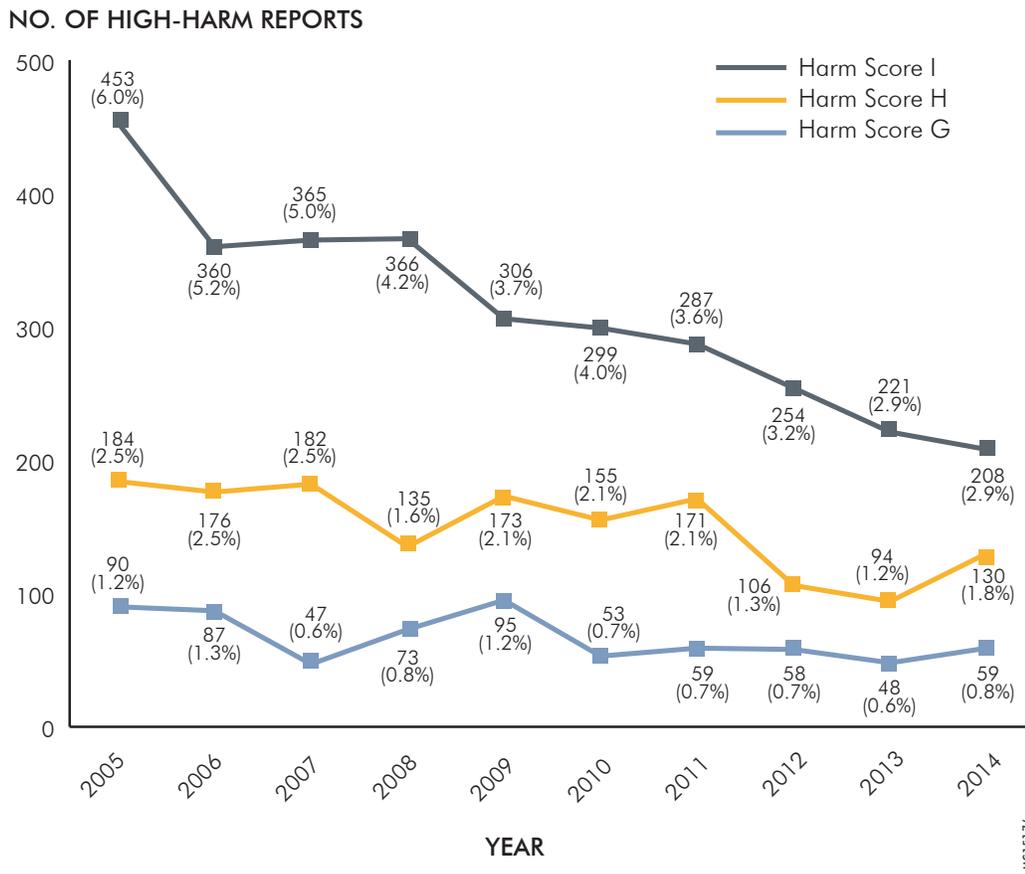
The *Pennsylvania Patient Safety Advisory* Turns 10

The *Pennsylvania Patient Safety Advisory* provides timely original scientific evidence and reviews of scientific evidence that can be used by healthcare systems and providers to improve healthcare delivery systems and educate providers about safe healthcare practices. The emphasis is on problems reported to the Authority, especially those associated with a high combination of frequency, severity, and possibility of solution; novel problems and solutions; and problems in which urgent communication and information could have a significant impact on patient outcomes. The "Readership" infographic on the following page shows the distribution of subscribers across the globe for the *Advisory*.

Since 2004, more than 475 safety-focused *Advisory* articles have been published and over 4,100 documented changes in Pennsylvania acute care facilities and nursing homes are directly attributed to *Advisory* articles. The Authority has provided 47 *Advisory*-based educational toolkits, which garnered over 100,000 website hits in 2014. More than 11,900 *Advisory*-based CME credits have been earned by healthcare professionals from 2006 through 2014.

Through its *Advisory*, the Authority will continue to help make healthcare as safe as possible for patients in Pennsylvania. As 2015 unfolds, look for enrichments in the readability of the articles and the accompanying practical resources. The content, design, and distribution methods for articles and resources will sharpen further. The goal will remain presenting information in a practical, straightforward manner while maintaining the important scientific process that provides validity. More information about the *Advisory* can be found in **Addendum C**.

Training and Education Efforts

The Patient Safety Liaison (PSL) Program continues to provide a unique resource to Pennsylvania healthcare facilities. PSLs are a facility's personal link to the Authority. Every Pennsylvania hospital, ASF, birthing center, and abortion facility is assigned one of seven regional PSLs. Each PSL serves as an educator and consultant to their assigned facilities, providing on-site educational programs, assisting in collaborative work, analyzing patient safety events, and providing methods for improvement through *Advisory* articles, toolkits, and other available resources. In addition to conducting 189 educational sessions to over 9,000 healthcare professionals, PSLs made over 900 visits to individual healthcare facilities in 2014. Since 2010, the number of healthcare professionals educated by the Authority has increased significantly, as shown in Figure 2.

Educational programs were conducted throughout Pennsylvania at the facility, regional, and state level. Audiences included hospital leadership, patient safety committees, nurses, physicians, patient safety officers, respiratory therapists, radiology staff, therapy staff, nursing home staff, and many others. Presentations were given in person and in webinar sessions. Continuing education credits are offered for registered nurses for on-site programs at no charge to the facility.

Educational topics included the following: falls, human factors, culture of safety in the operating room, teamwork and communication, TeamSTEPPS, root-cause analysis, medication safety, Medical Care Availability and Reduction of Error (MCARE) Act reporting requirements, value of

Figure 2. Total Educational Program Attendance
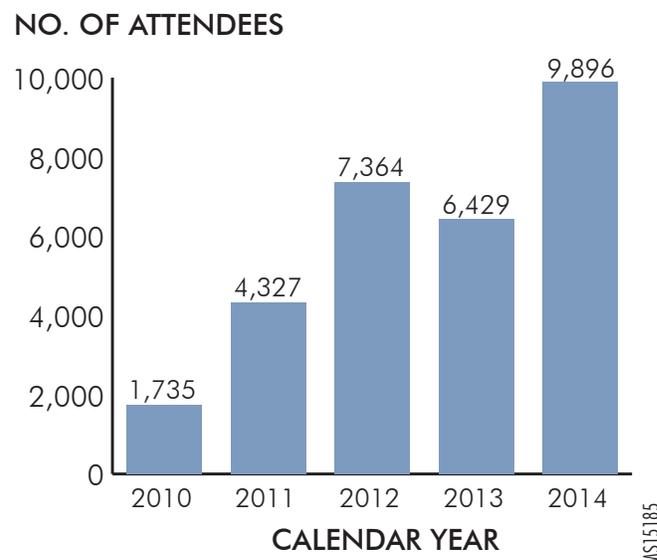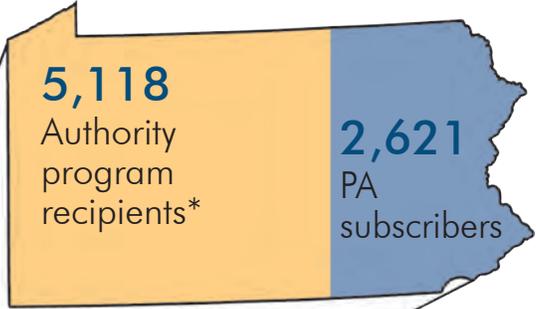
NO. OF ATTENDEES

CALENDAR YEAR

MS15185

Readership

5,118 Authority program recipients*

2,621 PA subscribers

4,377 subscribers in the US

Subscribers in all **50** states, plus DC, the Virgin Islands, Puerto Rico, and other US territories.

Subscribers in **44** countries

4,566 subscribers worldwide

336 new subscribers in 2014

* Recipients include reporting system users from acute healthcare facilities and nursing homes, as well as board and panel members in Pennsylvania. These recipients are not included in the total numbers of PA/US/worldwide subscribers indicated above.

near-miss reporting, infection prevention, operating room fire safety, preventing wrong-site surgeries, just culture, failure mode and effects analysis (FMEA), and using data to improve patient safety.

Infection prevention analysts also provide educational sessions on HAIs to healthcare facilities and nursing homes.

In 2014, Authority infection prevention analysts provided educational programs to over 1,500 Pennsylvania healthcare workers in hospitals, nursing homes, ASFs, and professional organizations across the commonwealth, as well as to various advocacy groups and healthcare partners in infection prevention and patient safety.

More about the Authority's education activities can be found in **Addendum D**.

Collaborations

The Authority has found that collaborating with facilities in Pennsylvania has helped facilities make improvements in specific areas where the data shows work needs to be done. In 2014, the Authority's collaboration projects provided access to evidence-based best practices, education, tools, resources, facility networking and sharing, and published articles in the Advisory that would allow work to be shared statewide. The work with the Hospital and Health-system Association of Pennsylvania (HAP) Pennsylvania Hospital Engagement Network (HAP PA-HEN) utilized the majority of the Authority's collaborative resources in 2014; however, the Authority was also able to begin a collaborative project with long-term care facilities to prevent catheter-associated urinary tract infections (CAUTIs). In addition, the Authority fostered collaborative partnerships in 2014 with the Philadelphia Department of Public Health, Quality Insights Quality Innovation Network, and the Health Research and Educational Trust national implementation of the Comprehensive Unit-based Safety Program (CUSP) for CAUTI in long-term care. Collaborations and partnership topics included falls; wrong-site surgery; harmful adverse drug events with anticoagulants, insulin, and opioids; CAUTIs; HAIs; and CUSP for CAUTI in long-term care.

Patient Safety Authority and How It Aligns with National Patient Safety Priorities

The Authority has a comprehensive patient safety mandate established under the MCARE Act. In 2014, the Authority consulted with a patient safety expert to receive feedback from field and expert patient safety advocates through several interviews to assess its alignment with national patient safety priorities. Figure 3 is the result of the consultant's interviews and shows the Authority aligns strongly with national patient safety efforts.

The Authority's patient safety efforts were rated particularly strong in the areas of support for the healthcare workforce to enable focus on patient care and improvement work, its focus on culture, and its promotion and spread of patient safety work, among others. This promotion of its work includes collaborations. These collaborations often involve working with national organizations and groups.

For example, the Authority works with the National Patient Safety Foundation (NPSF) in a variety of ways. The Authority's clinical director sits on NPSF's oversight committee. The Authority's director of PSLs works with NPSF on its Certified Professional in Patient Safety (CPPS) exam and taught a review course in April 2015. The Authority will also speak at NPSF's national conference about its work on falls reduction and its work with ASFs to reduce transfers to hospitals and procedure cancellations. An Authority infection prevention analyst also works with NPSF on their oversight committee that is conducting a research study on non-ventilator-associated hospital-acquired pneumonia. The Authority had previously published an *Advisory* article on the topic, which garnered NPSF's interest.

	SYSTEM FOCUS ON PATIENT SAFETY	SUPPORT OF WORKFORCE	FOCUS ON CULTURE	PATIENT AND CONSUMER ENGAGEMENT	TRANSPARENCY	ADOPTION OF HEALTH INFORMATION TECHNOLOGY	SPREAD OF SAFETY WORK
Data collection, analysis, guidance; *Advisory* and website	●	●	◉	○, ◍	◉	○	●
Training and education programs	●	●	●	○, ◍	●	○, ◍	●
Patient safety and quality improvement collaboratives	●	●	◉	○, ◍	●	○, ◍	●
Patient Safety Liaison Program	●	●	●	○, ◍	◉	○, ◍	●

● = Extremely strong alignment, ◉ = Strong alignment, ○ = Alignment, ◍ = Opportunity for improvement

MS15207

The Authority has also initiated discussion on the safety of electronic health records. The Authority was one of the first organizations to publish on the topic through an *Advisory* article, which garnered the interest of the Office of the National Coordinator for Health Information Technology. The Authority has also contracted with Health Research and Educational Trust on a 14-month collaboration to develop and implement an infection prevention and safety program to support long-term care facilities in adopting evidence-based infection prevention practices to reduce CAUTIs and improve safety culture.

The Authority also continues to work with the HAP PA-HEN through the federal Partnership for Patients program to reduce falls, wrong-site surgeries, and adverse drug events with opioids.

The collaborative and partnership activities are detailed in **Addendum E**.

"I Am Patient Safety" Poster Campaign Recognizes Pennsylvania Healthcare Workers

The Authority held its annual I Am Patient Safety poster recognition contest during the last several months to recognize individuals and groups within Pennsylvania's healthcare facilities who have demonstrated a personal commitment to patient safety. The recognition poster contest is held each year, with posters delivered to facilities in time for Patient Safety Awareness Week. The contest helps patient safety officers promote progress being made within their facilities to improve patient safety.

Several Authority board members and management staff comprised the judging panel. The panel judged submissions upon the following criteria: the person or group (1) had a discernible impact on patient safety for one or many patients, (2) demonstrated a personal commitment to patient safety, and (3) demonstrated that a strong patient safety culture is present in the facility. Bonus points were awarded for submissions that demonstrated initiative taken by an individual.

Winners received their photos and patient safety efforts highlighted on posters that can be displayed within their facilities. They also received a certificate and an I Am Patient Safety recognition pin from the Authority. Winners were invited to attend the March 2015 Patient Safety Authority Board of Directors meeting for lunch and to meet the Authority board members and staff.

The individuals and groups recognized for the "I Am Patient Safety" poster contest are featured on the cover of the 2014 Annual Report. Their achievements and posters can be found in **Addendum G**. The addendum is a reprint of the 2015 March *Advisory* article.

The Authority's HAI Reduction Efforts

HAIs can be devastating and even deadly. HAIs are associated with increased mortality and greater costs of care. According to the Centers for Disease Control and Prevention (CDC), approximately 1 out of every 20 patients in United States hospitals will contract an HAI. The most common types of HAIs are bloodstream infections, urinary tract infections, surgical site infections, gastrointestinal illnesses such as *Clostridium difficile* or norovirus, lower respiratory tract infections such as pneumonia, and skin and soft-tissue infections.

Since the inception of HAI reporting in 2009, the Authority's HAI prevention activities have advanced from the initial articles published in the *Advisory* to offering webinars, conducting on-site facility visits, developing toolkits, and interfacing with local, state, and national partners focusing on HAI prevention.

Long-Term Care HAI Data Analysis

On April 1, 2014, the Authority began collecting HAI reports from long-term care facilities through PA-PSRS using updated criteria that closely follow the revised McGeer criteria published in 2012. **Addendum F** refers to data collected before April 1, 2014, as version 1 data; the data period of April 1, 2014, through December 31, 2014, is referred to as version 2 data.

Facilities in Pennsylvania submitted a total of 28,825 infection reports through PA-PSRS in 2014; a 6.9% decrease from the 30,958 submitted in 2013. The decrease in reporting may have resulted, in part, from the changes in criteria instituted in April 2014, when facilities modified their surveillance activities to capture reformed HAI-related data points.

Participation in Rapid Ebola Preparedness Teams

In response to the threat of Ebola-related morbidity and mortality, Authority analysts, in conjunction with the Pennsylvania Department of Health, CDC, and the Association for Professionals in Infection Control and Epidemiology, participated in site assessments to evaluate proposed Ebola treatment centers in Pennsylvania. Two sets of visits to each site occurred: one with the state-led teams and one with the CDC.

The initial visit focused on overall preparedness related to Ebola, but the assessments looked at all-hazard readiness as the overall goal that facilities should strive to achieve. The second visit, with CDC in attendance, showcased the programs that Pennsylvania facilities operationalized in a very short time frame. CDC acted in a consultative role with the state-led team and the facility representatives. The outcome of a successful joint visit was the facility's designation as a state Ebola treatment center. Designation meant that the assessed facility could theoretically manage a patient with Ebola from admission to discharge in a coordinated and safe manner.

The Authority thanks the facilities that agreed to be assessed for designation and acknowledges the financial and operational commitment the facilities displayed in response to a potential infectious threat to Pennsylvania's residents. The CDC list of Ebola treatment centers is available at http://www.cdc.gov/vhf/ebola/healthcare-us/preparing/current-treatment-centers.html.

Long-Term Care Best-Practice Assessment Tool

Monitoring compliance with best practices aimed at preventing HAIs is fundamental to identifying improvement targets. Designed in 2011, the Authority's Long-Term Care Best-Practice Assessment *Tool* helps facilities assess best-practice strategies for HAI prevention and compliance in seven categories: hand hygiene, environmental infection control, outbreak control, and prevention of urinary tract, respiratory, skin and soft-tissue, and gastrointestinal multidrug-resistant organism infections.

New Analytical Tools for Nursing Homes

In April 2014, the Authority implemented PA-PSRS changes for nursing home users according to the 2012 McGeer criteria. Due to the recent change in reporting requirements, the Authority updated its analytical reports and tools for nursing homes. Features of the analytical tools include the following: analytics are generated to provide real-time information; individual facility infection rates can now be compared with a peer group rate or state rate; reports are exportable as Excel, Word, or PDF documents; graphs and tables have been designed with improved display features; and users can drill down through their data from a facility level through to the unit level.

More information about the Authority's HAI activities can be found in **Addendum F**.

Recommendations to the Department of Health

In 2014, the Authority focused its attention on standardization of reporting. Since its inception, facilities have asked the Authority to standardize reporting for clarity of certain issues. The Authority and the Pennsylvania Department of Health (the Department), along with HAP, the Hospital Council of Western Pennsylvania, and the Pennsylvania Ambulatory Surgery Association, developed 28 guiding principles to provide more consistent and clearer standards for reporting requirements defined in section 302 of the MCARE Act. The document published in the September 27, 2014, *Pennsylvania Bulletin* outlines final guidance to acute healthcare facilities in Pennsylvania in making determinations about whether specific occurrences meet the statutory definitions of Serious Events, Incidents, and Infrastructure Failures. Public comments from the draft guidance published in the January 4, 2014, *Pennsylvania Bulletin* are included in the September 2014 document.

The guidance principles went into effect April 1, 2015. Prior to implementation, facilities were educated about what the Authority and the Department have agreed to in regard to the principles and reporting to help consistency. Questions were taken during the education sessions regarding the principles. A fact sheet with the questions and answers will be made available.

Since its inception, the Authority has had a special focus on preventing surgical procedures from being performed on the wrong patient, wrong body part, wrong side of the body, or wrong level of a correctly identified anatomic site—collectively referred to as "wrong-site surgery." While this type of event is rare at the level of an individual hospital or ASF, the Authority has developed the largest database of reports on wrong-site surgery cases in the United States, and possibly the world. The Authority's analysis of several hundred of these reports allowed the Authority to identify principles that, when followed, can prevent these events.

Having developed the evidence base for these principles and demonstrated that facilities adopting these principles can drastically reduce the occurrence of wrong-site surgery, the Authority took the initial steps toward issuing formal recommendations on wrong-site surgery prevention. The Authority met with the Pennsylvania Department of Health in January 2012 to discuss the process for making recommendations and obtained its agreement in principle that recommendations on this topic would benefit the commonwealth.

In March 2012, the Authority distributed draft recommendations for public comment to the patient safety officers of all acute care facilities that perform surgery, as well as to the Pennsylvania chapters of relevant clinical specialty societies and professional associations. The Authority received feedback from these stakeholders on whether they envisioned any barriers to implementation of the principles. In November 2012, the Authority published a supplementary *Advisory* discussing the feedback received from the Pennsylvania professional organizations.

The Authority and the Department of Health expected to address the wrong-site surgery recommendations in late 2014 but did not due to the standardization of the 28 guiding principles discussed previously. The Authority will work with Department of Health to address the wrong-site surgery recommendations, once education and implementation for the standardization guiding principles is complete.

Anonymous Reports

The MCARE Act includes an important provision that permits individual healthcare workers to submit what the MCARE Act defines as an "anonymous report." Under this provision, a healthcare worker who has complied with section 308(a) of the act may file an anonymous report regarding a Serious Event. The MCARE Act requires facilities to make anonymous report forms available to healthcare workers. The Authority does not receive many anonymous reports.

The Authority makes the forms available on the PA-PSRS website, which is accessible without a password. The reporting form is a simple, one-page questionnaire. To ensure healthcare workers are aware of the option to submit an anonymous report, the Authority developed an anonymous report pamphlet. The pamphlet includes an anonymous report form with guidelines for filing a report so patient safety officers can make them easily accessible for hospital staff. While making their routine visits to

facilities in their region, the Authority's PSLs also ensure patient safety officers are making the anonymous report forms accessible to employees.

Healthcare workers are able to submit anonymous reports according to the protocols established through PA-PSRS. Individuals completing the form do not need to identify themselves, and the Authority assigns professional clinical staff to conduct any subsequent investigations. The Authority encourages healthcare workers to submit anonymous reports when they believe their facility is not responding appropriately to a Serious Event. The MCARE Act requires that the annual report include the number of anonymous reports filed and reviews conducted by the Authority. The Authority received one anonymous report in 2014 that complied with MCARE Act requirements. The Authority has received a total of 11 anonymous reports since reporting began in 2004.

Referrals to Licensure Boards

The MCARE Act requires the Authority to identify the number of referrals to licensure boards for failure to submit reports under the act's reporting requirements. No such situations were identified during 2014. However, it is

important to note that the Authority is unlikely to receive information related to a referral to a licensure board, as PA-PSRS reports do not include the names of individual licensed practitioners.

Fiscal Statements and Contracts

The MCARE Act establishes the Patient Safety Trust Fund as a separate account in the State Treasury. Under the MCARE Act, the Authority, which has sole discretion to determine how those funds are used to effectuate the purposes of the patient safety provisions of the act, administers funds in the Patient Safety Trust Fund. Funds for the Patient Safety Trust Fund come from assessments made by the Department of Health on certain medical facilities.

The Authority recognizes that Pennsylvania hospitals, birthing centers, ASFs, abortion facilities, and nursing homes bear financial responsibility for costs associated with complying with mandatory reporting requirements. Accordingly, the Authority has focused on two fiscal

goals: to be moderate in the use of moneys contributed by the healthcare industry and to ensure that healthcare facilities paying for PA-PSRS receive direct benefits from the system and from Authority programs in return.

In this regard, within the design of PA-PSRS, the Authority included a variety of integral and analytical tools that provide immediate, real-time feedback to facilities on their own adverse event and near-miss reports and activities. Most recently, the Authority has provided nursing homes with an infection analytic system within PA-PSRS. Facilities can use these tools for their internal patient safety and quality improvement programs. The Authority also publishes the *Advisory*, a scholarly journal issued quarterly

that includes detailed analysis and identification of trends of reports submitted through PA-PSRS.

Also, the Authority has provided numerous training and education programs, including patient safety officer basics and beyond-the-basics education, regional root-cause analysis seminars, and programs on failure mode and effects analysis, reduction of MRSA in ASFs, and evidence-based best practice in preventing wrong-site surgery, to name a few. All of these programs are offered for free.

As identified elsewhere in this report, the Authority expanded its services by organizing and supporting research collaboratives with reporting facilities and other patient-safety-centric organizations. The Authority also provides continuing medical education and patient safety curriculum development. By directly offering clinical guidance, feedback, and educational programs to providers about actual events that occur in Pennsylvania, the Authority provides measurable value back to the healthcare industry that contributes to funding this program.

Funding Received from Hospitals, ASFs, Birthing Centers, and Abortion Facilities

The MCARE Act set a limit of $5,000,000 on the total aggregate assessment on acute care facilities for any one year beginning in 2002, plus an annual increase based on the Consumer Price Index (CPI) for each subsequent year.

On January 28, 2014, the Authority board authorized a recommendation to the Department of Health that the FY 2013-2014 acute care surcharge assessment total $5.5 million. This amount was equal to the surcharge assessment from the previous fiscal year and was 17% less than the maximum annual amount that could have been assessed for the year pursuant to section 305(d) of the MCARE Act. See Table 3.

At the time of this recommendation, the Authority board took several points into consideration, including the following:

- The Authority FY 2013-2014 budget was approximately $8.6 million, of which approximately $7.6 million was related to non-HAI expenditures.

- The Authority received $0.8 million in revenue for work performed for the Centers for Medicare and Medicaid Services (CMS) Partnership for Patients initiative. HAP manages the Pennsylvania Hospital Engagement Network (HEN) that provided the framework for these activities.

- The Authority budget increased by $2.0 million, or 30.8%, over the previous fiscal year. This budget included $1.6 million in strategic initiative spending.

- Excluding the strategic initiative spending, the budget increased 5.6% over the previous year, which was offset by $0.8 million in HEN/CMS revenues.

Additionally, on December 9, 2014, the Authority board authorized a recommendation to the Department of Health that the FY 2014-2015 acute care surcharge assessment total $6.2 million. This amount is a $0.7 million, or 12.7%, increase over the FY 2013-2014 acute care assessment and is 8% less than the maximum annual amount that could have been assessed for the year pursuant to section 305(d) of the MCARE Act.

At the time of this recommendation, the Authority board took several points into consideration, including the following:

- The Authority FY 2014-2015 budget is approximately $8.2 million, of which approximately $7.2 million is related to non-HAI expenditures.

- The Authority budget decreased by $433 thousand, or -5.0%, from the previous fiscal year. This budget included $1.2 million in Strategic Initiative spending.

- Since FY 2009-2010, the acute care assessment had increased by $500 thousand or 2.5% per year.

- Since the FY 2007-2008 acute care assessment of $5.4 million, the acute care assessment had increased by just $100 thousand over six years, a 2% total increase through FY 2013-14, or 0.3% per year.

- Also considered in authorizing this increase were staff and program growth, significant increases in Commonwealth of Pennsylvania mandated benefit pool rates and the conclusion of the HEN contract in December 2014.

Table 3. Acute Care Facility Assessments

FISCAL YEAR	NUMBER OF FACILITIES ASSESSED BY DOH*	APPROVED ASSESSMENTS	TOTAL ASSESSMENTS RECEIVED BY DOH†
2002-03	356	$5,000,000	$4,663,000
2003-04	377	$2,565,000	$2,542,316
2004-05	414	$2,500,000	$2,508,787‡
2005-06	450	$2,500,000	$2,500,149
2006-07	453	$2,500,000	$2,500,034
2007-08	526	$5,400,000	$5,391,583
2008-09	524	$4,000,000	$3,972,677
2009-10	519	$5,000,000	$4,989,781
2010-11	542	$5,000,000	$4,981,443
2011-12	550	$5,100,000	$5,063,723
2012-13	545	$5,500,000	$5,504,549
2013-14	556	$5,500,000	$5,492,002
2014-15§		$6,200,000	
			$50,110,044

* The number of facilities assessed by Department of Health (DOH) differs from the number of Medical Care Availability and Reduction of Error (MCARE) Act facilities cited elsewhere in this report due to the differences in the dates chosen to calculate the number of facilities for these two different purposes.

† Amounts assessed and amounts received will differ because a few facilities may have closed in the interim or are in bankruptcy. In a few cases, the DOH is pursuing action to enforce facility compliance with the MCARE Act's assessment requirement.

‡ Total assessments received are greater than assessments made because some funds received were late payments for the previous year's assessment.

§ DOH has not yet calculated the FY 2014-15 acute care assessments as of the production of this table.

Funding Received from Nursing Homes

Act 52 of the MCARE Act allows the Department of Health to assess the nursing homes up to $1,000,000 per year for any one year, beginning in 2008, plus an annual increase based on the CPI for each subsequent year. In 2008, following the Authority's suggestion, the Department of Health assessed 725 nursing home facilities $1,000,000 and transferred $1,000,782 to the Patient Safety Trust Fund for FY 2008-2009. This money can only be spent on activities related to HAI and implementation and maintenance of chapter 4 of the MCARE Act.

On January 28, 2014, the Authority board authorized a recommendation to the Department of Health that the FY 2013-2014 nursing home surcharge assessment total $1.0 million. This amount was $100 thousand more the previous year's assessment and was approximately 6.5% below the maximum assessment permitted under Act 52 based on annual CPI adjustments.

Additionally, on December 9, 2014, the Authority board authorized a recommendation to the Department of Health that the FY 2014-2015 nursing home surcharge assessment total $1.05 million. This amount is $50 thousand more than the previous year's assessment and is approximately 3.6% below the maximum assessment permitted under Act 52 based on annual CPI adjustments. See Table 4.

Table 4. Nursing Home Assessments

FISCAL YEAR	NUMBER OF FACILITIES ASSESSED BY DOH	APPROVED ASSESSMENTS	TOTAL ASSESSMENTS RECEIVED BY DOH
2008-09	725	$1,000,000	$1,000,782
2009-10	711	$800,000	$799,382
2010-11	707	$800,000	$799,829
2011-12	707	$800,000	$804,473*
2012-13	711	$900,000	$913,315*
2013-14	698	$1,000,000	$998,751
2014-15†		$1,050,000	
			$5,316,532

* Total assessments received are greater than assessments made because, in a few cases, funds received were late payments for the previous year's assessment.

† The Department of Health (DOH) has not yet calculated the FY 2014-15 acute care assessments as of the production of this table.

Annual Expenditures

During calendar year 2014, the Authority spent approximately $7.4 million and received HEN-related reimbursement of $842 thousand resulting in net expenditures of $6.6 million. See Table 5.

Table 5. Actual Expenditures for Calendar Year 2014

CONTROL LEVEL	AMOUNT
61: Personnel	$2,009,351
63: Operating	$5,438,935
44: HEN Augmentation	-$842,756
Net Expenditures	$6,605,530

Patient Safety Authority Contracts

The MCARE Act requires the Authority to identify a list of contracts entered into pursuant to the act, including the amounts awarded to each contractor.

During calendar year 2014, the Authority received services under the following contracts (key: FC [funds commitment]; PO [purchase order]):

ECRI Institute, FC # 4000013036

Five-year contract for program administration, clinical analysis, training, and data collection and reporting infrastructure services, extended through September 2014.

November 2008 to September 30, 2014

Total contract amount: over 5 years and 11 months	$25,977,719
Total contract expenditures:	$24,316,370.15

Amount invoiced for 2008: (November and December)	$ 496,373.04
Amount invoiced for 2009: (January through December)	$3,664,012.67
Amount invoiced for 2010: (January through December)	$3,723,832.43
Amount invoiced for 2011: (January through December)	$3,854,487.96
Amount invoiced for 2012: (January through December)	$4,253,118.44
Amount invoiced for 2013: (January through December)	$4,601,794.47
Amount invoiced for 2014: (January through September)	$3,722,751.13

ECRI Institute, FC # 4000018888

Four-year, nine-month contract for program administration, clinical analysis, training, and data collection and reporting infrastructure services.

October 1, 2014, through June 30, 2019

Total contract amount: over 4 years and 9 months	$24,227,233
Amount invoiced for 2014: (October through November) – unaudited	$767,354.02

December 2014 invoice not yet received.

IKON Office Solutions, PO # 4500712922

<u>B&W</u> Copier Lease

August 1, 2013, to June 30, 2017, @ $202.62/month

13-month lease expense (Jan-Jan) paid in CY 2014:

$2,630.31 (includes $3.75 credit)

XEROX Corporation, PO # 4500734462

<u>Color</u> Copier Lease

October 1, 2013, to August 31, 2017, @ $398.39/month with no overage charge

12-month lease expense (Oct-Dec):	$4,780.68

DELL Marketing LP, PO # 4300409286

SAS Visual Analytics software licenses and training

Issue date: March 31, 2014. Total PO:	$62,948.30.
Amount Expended in 2014:	$62,948.30

SAS Institute Inc., FC # 4000018726

Professional services agreement for installation and development of SAS Visual Analytics software

SAS contract # S4033-1. Effective July 29, 2014.

Total commitment:	$36,683.52
Amount Expended in 2014:	$30,433.69

Contracts under which the Authority received revenue as contractor:

HRET Subcontract Agreement – CAUTI LTC Cohort 2

Federal Fixed Price – HHSA2902010000251, Task Order #8

2014 base period:	$25,000.00
Option period:	$25,000.00
(exercisable through September 18, 2015)	
Amount invoiced by Authority in 2014:	$25,000.00

HAP/CMS Subcontract Agreement - Hospital Engagement Network (HEN)

Option Year 1 – Contact HHSM-500-2012-022C.3

Amount invoiced by Authority in 2014:	$845,480.00

Patient Safety Authority Balance Sheet

The following balance sheet (Table 6) reflects the status of the Patient Safety Trust Fund as of December 31, 2014:

Table 6. Patient Safety Trust Fund Balance Sheet (Unaudited), as of December 31, 2014*

ASSETS	
Temporary investments	$5,387,100
Total Assets	**$5,387,100**

LIABILITIES AND FUND BALANCE	
Liabilities	
Accounts payable and accrued liabilities	$104,192
Invoices payable	4,009
Accrued payables goods receipts	(62,948)
Total Liabilities	**$45,253**

Fund Balance	
Restricted for:	
Encumbrances	$4,025,694
Health-related programs	1,316,153
Total Fund Balance	**$5,341,847**
Total Liabilities and Fund Balance	**$5,387,100**

* *Source*: Comptroller Operations, Commonwealth Bureau of Accounting & Financial Management

Board of Directors and Public Meetings

Members of the board of directors are appointed by the governor and the general assembly according to certain occupational or residence requirements. As of December 31, 2014, members include:

**Physician appointed by the Governor
who serves as Chair:
Rachel Levine, MD, Acting Physician General**
Residence: Middletown (Dauphin County)

**Appointee of the President pro tempore of the Senate:
Daniel Glunk, MD**
Residence: Williamsport (Lycoming County)

**Appointee of the Minority Leader of the Senate:
Cliff Rieders, Esq.**
Residence: Williamsport (Lycoming County)

**Appointee of the Speaker of the House:
Stanton N. Smullens, MD, Vice Chair**
Residence: Philadelphia (Philadelphia County)

**Appointee of the Minority Leader of the House:
Eric Weitz, Esq.**
Residence: Carlisle (Cumberland County)

**Nurse appointed by the Governor:
Joan M. Garzarelli, RN, MSN**
Residence: Irwin (Westmoreland County)

**Pharmacist appointed by the Governor:
Gary A. Merica, BSc, MBA/HCM**
Residence: Red Lion (York County)

**Hospital employee appointed by the Governor:
Radheshyam Agrawal, MD**
Residence: Pittsburgh (Allegheny County)

**Healthcare worker appointed by the Governor:
Jan Boswinkel, MD**
Residence: Havertown (Delaware County)

**Non-healthcare worker appointed by the Governor:
Lorina L. Marshall-Blake**
Residence: Philadelphia (Philadelphia County)

**Physician appointed by the Governor:
John Bulger, DO, MBA**
Residence: Danville (Montour County)

The MCARE Act requires the board of directors to meet at least quarterly. During 2014, the board met frequently to assess and develop future patient safety educational and advocacy activities, including developing standards for more consistent reporting. Representatives of healthcare, consumer, and other stakeholder groups, including the general assembly, have attended and spoken at public meetings. Following are the dates of all public board meetings held by the Authority during 2014:

- January 28, 2014
- March 4, 2014
- April 23, 2014
- June 10, 2014
- July 23, 2014 (cancelled)
- September 9, 2014
- October 29, 2014 (cancelled)
- December 9, 2014

Summary minutes of the public meetings are available on the Authority's website at http://www.patientsafetyauthority.org.

Address:
Pennsylvania Patient Safety Authority
333 Market Street, Lobby Level
Harrisburg, PA 17120

Phone: (717) 346-0469

Fax: (717) 346-1090

E-mail: patientsafetyauthority@pa.gov

Addendum A: Definitions

The Medical Care Availability and Reduction of Error (MCARE) Act requires healthcare facilities to submit reports on the following three kinds of occurrences:

1. **Serious Event.** An adverse event resulting in patient harm. The legal definition, from the MCARE Act, reads as follows: "An event, occurrence or situation involving the clinical care of a patient in a medical facility that results in death or compromises patient safety and results in an unanticipated injury requiring the delivery of additional health care services to the patient. The term does not include an incident."

2. **Incident.** A "near miss" in which the patient was not harmed. The MCARE Act defines this as follows: "An event, occurrence or situation involving the clinical care of a patient in a medical facility which could have injured the patient but did not either cause an unanticipated injury or require the delivery of additional health care services to the patient. The term does not include a serious event."

3. **Infrastructure Failure.** A potential patient safety issue associated with the physical plant of a healthcare facility, the availability of clinical services, or criminal activity. The MCARE Act defines this as follows: "An undesirable or unintended event, occurrence or situation involving the infrastructure of a medical facility or the discontinuation or significant disruption of a service which could seriously compromise patient safety." Reports of Infrastructure Failures are not addressed in this report because these are submitted only to the Department of Health.

Reports of Serious Events and Incidents are submitted to the Authority for the purposes of learning how the healthcare system can be made safer in Pennsylvania. Reports of Serious Events and Infrastructure Failures are submitted to the Department of Health for the purposes of fulfilling its role as a regulator of Pennsylvania healthcare facilities.

The MCARE Act requires the following types of facilities to submit reports of Serious Events, Incidents, and Infrastructure Failures to the Authority through the Pennsylvania Patient Safety Reporting System (PA-PSRS):

Hospitals. The Health Care Facilities Act (35 Pa. Stat. Ann. § 448.802a) defines a hospital as "an institution having an organized medical staff established for the purpose of providing to inpatients, by or under the supervision of physicians, diagnostic and therapeutic services for the care of persons who are injured, disabled, pregnant, diseased, sick or mentally ill or rehabilitation services for the rehabilitation of persons who are injured, disabled, pregnant, diseased, sick or mentally ill. The term includes facilities for the diagnosis and treatment of disorders within the scope of specific medical specialties, but not facilities caring exclusively for the mentally ill." For the purposes of this report, at the end of 2014, there were 239 hospitals in the Commonwealth of Pennsylvania.

Ambulatory surgical facilities. The Health Care Facilities Act defines an ambulatory surgical facility as "a facility or portion thereof not located upon the premises of a hospital which provides specialty or multispecialty outpatient surgical treatment. Ambulatory surgical facility does not include individual or group practice offices or private physicians or dentists, unless such offices have a distinct part used solely for outpatient treatment on a regular and organized basis. Outpatient surgical treatment means surgical treatment to patients who do not require hospitalization but who require constant medical supervision following the surgical procedure performed." For the purposes of this report, at the end of 2014, there were 302 ambulatory surgical facilities in the Commonwealth of Pennsylvania.

Birthing centers. The Health Care Facilities Act defines a birthing center as "a facility not part of a hospital which provides maternity care to childbearing families not requiring hospitalization. A birthing center provides a home-like atmosphere for maternity care, including prenatal, labor, delivery, postpartum care related to medically uncomplicated pregnancies." For the purposes of this report, at the end of 2014, there were five birthing centers in the Commonwealth of Pennsylvania.

Abortion facilities. Act 30 of 2006 extended the reporting requirements in the MCARE Act to abortion facilities that perform more than 100 procedures per year. For the purposes of this report, at the end of 2014, there were 19 qualifying abortion facilities in the Commonwealth of Pennsylvania.

Nursing homes. Act 52 of 2007 revised the MCARE Act to require nursing homes to report HAIs to the Authority. Reporting from these facilities began in June 2009. For the purposes of this report, at the end of 2014, there were 703 nursing homes in the Commonwealth of Pennsylvania. See the addendum for data received to date from nursing homes.

Other pertinent definitions used in this report include the following:

Medical error. This term is commonly used when discussing patient safety, but it is not defined in the MCARE Act. The word "error" appears in PA-PSRS and in this report. For example, one category of reports discussed is "medication errors." In PA-PSRS, the word "error" is used in the sense intended by the Institute of Medicine Committee on Data Standards for Patient Safety, which defines an error as follows: "The failure of a planned action to be completed as intended (i.e., error of execution), and the use of a wrong plan to achieve an aim (i.e., error of planning) . . . . It also includes failure of an unplanned action that should have been completed (omission)."[1]

Adverse event. This term also appears in this report, though it is not defined in the MCARE Act. The Institute of Medicine Committee on Data Standards for Patient Safety defines an adverse event as follows: "an event that results in unintended harm to the patient by an act of commission or omission rather than by the underlying disease or condition of the patient."[1] The Authority considers this term to be broader than "medical error," as some adverse events may result from clinical care without necessarily involving an error.

Within the MCARE Act, the term "medical error" is used in section 102: "Every effort must be made to eliminate medical errors by identifying problems and implementing solutions that promote patient safety." It is also used in defining the scope of chapter 3, "Patient Safety": "This chapter relates to the reduction of medical errors for the purpose of ensuring patient safety."

While PA-PSRS does include reports of events that result from errors, the program's focus is on the broader scope of actual and potential adverse events—not only those that resulted from errors.

Patient safety officer. The MCARE Act requires each medical facility to designate a single individual to serve as that facility's patient safety officer. Under the MCARE Act, the patient safety officer is responsible for submitting reports to the Authority. The MCARE Act also assigns other responsibilities to the patient safety officer.

Note

1. Aspden P, Corrigan JM, Wolcott J, et al., eds. Committee on Data Standards for Patient Safety. Institute of Medicine. Patient safety: achieving a new standard of care. Washington (DC): National Academies Press; 2004.

Addendum B:
Detailed Overview of Data
Reported through PA-PSRS

Introduction

The Pennsylvania Patient Safety Reporting System (PA-PSRS) is a secure, web-based system that permits medical facilities to submit reports of what the Pennsylvania Medical Care Availability and Reduction of Error (MCARE) Act defines as "Serious Events" and "Incidents."[1] Statewide mandatory reporting through PA-PSRS went into effect June 28, 2004. All information submitted through PA-PSRS is confidential, and no information about individual facilities is made public.

As defined by the MCARE Act, PA-PSRS is a facility-based reporting system. It is important for Pennsylvania patients and their families to recognize there are other complaint and error reporting systems that are available for individuals. The Department of Health can issue sanctions and penalties, including fines and forfeiture of license, to healthcare facilities that fail to comply. Citizens can file complaints related to hospitals and ambulatory surgical facilities by calling the Department of Health at (800) 254-5164; for complaints related to birthing centers, they can call the Department of Health at (717) 783-1379. Complaints against licensed medical professionals can be filed with the Department of State's Bureau of Professional and Occupational Affairs at (800) 822-2113.

All reports to PA-PSRS are submitted by facilities through a process identified in their patient safety plans, as required by the MCARE Act. However, the MCARE Act provides one exception to this facility-based reporting requirement. Under this exception, a healthcare worker who feels that his or her facility has not complied with the MCARE Act reporting requirements may submit an anonymous report directly to the Pennsylvania Patient Safety Authority.

To access PA-PSRS, facilities need only a computer with Internet access and to register with the Authority. There is

no need for a facility to procure costly equipment or software to meet statutory reporting requirements, and only minimal self-directed training is necessary to learn how to navigate PA-PSRS.

In submitting a report, medical facilities respond to 21 core questions through check boxes and free-text narrative fields. The system directs the user through the process, offering drop-down boxes of menu options and guiding the user to the next series of questions based on the answers to previous questions. The process is similar for nursing homes, which began reporting healthcare-associated infections (HAIs) in June 2009, with the system posing different questions depending on what type of infection is reported.

Questions answered by the facilities include basic demographic information (such as a patient's age and gender), the location within the facility where the event took place, the type of event, and the level of patient harm, if any. In addition, the report collects considerable detail about "contributing factors," details related to staffing, the workplace environment and management, and clinical protocols. Facilities are also asked to identify the root causes of a Serious Event and to suggest processes that can be implemented to prevent a reoccurrence.

Upon submission, a report is electronically prioritized and stored in the patient safety database. The Authority utilizes a team of clinical analysts to review some reports individually and all reports in aggregate. This team includes professionals with degrees and experience in medicine, nursing, pharmacy, health administration, risk management, product engineering, and statistical analysis, among other fields. In addition, the Authority has access to a large pool of subject matter experts in various medical specialties.

The clinical team performs analysis, following up with individual facilities as necessary. The team's role is to identify situations of immediate jeopardy, hazards, or trends that may compromise patient safety and to offer processes and solutions for improvements.

Based on this comprehensive analysis and augmented by review of healthcare literature, the Authority develops articles and additional resources that are published through the Pennsylvania Patient Safety Advisory. The Advisory articles are directed primarily to healthcare professionals, for use by both clinical and administrative staff to improve processes and outcomes. The articles are often supplemented by toolkits, many of which are interactive, which may be used to clarify and standardize reporting practices as well as to assess and improve current patient care practices at the organizational, microsystem, or individual patient care level.

The Authority has also developed analytical tools that are available to reporting facilities. These tools provide patient safety professionals, quality improvement specialists, and risk managers with detailed reports analyzing data related to their specific facilities in a timely manner. Many reports can be exported to other software programs for inclusion in facility publications or reports and presentations to trustees and senior management. In addition, facility personnel have the ability to export all, or any portion, of their own facility's data. Managers can use this information for their internal quality improvement and patient safety activities.

The Authority encourages providers to use the articles, toolkits, and analytic reports to support patient safety and continuous quality improvement initiatives. In a recent survey, responses indicated that Pennsylvania facilities have implemented more than 80 specific improvements as a result of information contained in this year's Advisory articles and associated toolkits.

The Advisory is published quarterly. Primary distribution of the Advisory is through e-mail, enabling the Authority to circulate the Advisory to thousands of individual healthcare providers, hospitals, and government and healthcare organizations around the world, including national patient safety and quality improvement organizations. As a result, the Authority is able to generate considerable interest in Pennsylvania's approach to promoting patient safety and in the lessons learned through PA-PSRS.

More information about the Advisory and the data collected through PA-PSRS is covered in **Addendum C**. In addition, all issues of the Advisory are accessible on the Authority's website at http://www.patientsafetyauthority.org.

PA-PSRS was developed under contract with ECRI Institute, a Pennsylvania-based, independent, nonprofit health services research agency, in partnership with HP, a leading international information technology firm, and the Institute for Safe Medication Practices (ISMP), also a Pennsylvania-based, nonprofit health research organization.

Interpreting PA-PSRS Data

Many factors influence the number of reports submitted by any particular facility or any group of facilities, of which safety and quality are just two. Additional factors include facility size, utilization or volume, patient case mix, severity of illness, facility understanding of what occurrences are reportable, facility success in detecting reportable occurrences, and others.

Similarly, numbers by themselves do not provide complete answers. For example, the number of incorrect medications administered (the "numerator") is not meaningful without knowing the total number of all medications administered (the "denominator"). In other words, 10 incorrect medications out of a total of 50 administered doses is much different than 10 incorrect medications out of 10,000 administered doses. And numbers alone cannot answer questions

of why and how. In fact, Authority patient safety analysts find the report narrative fields that describe what happened or how a harm event was prevented to be most helpful in identifying issues and guidance to be shared across Pennsylvania.

Additional considerations to understand when reviewing PA-PSRS data presented in this report include the following:

- Data presented in this report includes only reports of Serious Events and Incidents. While PA-PSRS also collects reports of Infrastructure Failures, these reports are submitted only to the Department of Health. The Authority does not receive reports of Infrastructure Failures. (See Figure 1.)

- Unless otherwise noted, data presented in this report is based on reports submitted through PA-PSRS between January 1, 2014, and December 31, 2014. Data from acute care facilities is presented in this addendum. HAI data from acute and long-term care facilities is presented in its Addendum F.

- Unless specifically noted, numbers of reports in different categories are actual "raw numbers" and have not been adjusted for any facility- or patient-related factors that may influence differences in report volume among different facilities.

- The data is not adjusted to account for medical facility openings, closings, or changes of ownership.

Caution is advised when comparing data contained in this report with data published by other patient safety reporting systems. PA-PSRS was developed within the context of the MCARE Act, which has its own unique definitions for what is and what is not reportable through PA-PSRS.[1] It also uses a specific list of event types that may be different from the lists used by other systems. PA-PSRS is the first mandatory state program collecting data on "near misses"—events that did not harm patients. After 10 years

Figure 1. Submission of PA-PSRS Reports
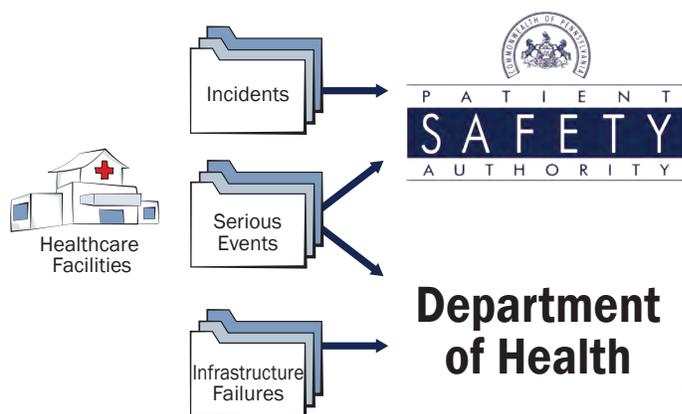
of data collection, it is the most comprehensive program of this type in the United States.

Many factors may influence differences among data from various patient safety reporting systems. The key comparisons to make are those made by individual healthcare facilities, which monitor performance over time and in relation to specific patient safety goals relevant to the specific healthcare setting.

Data Reports

Reports by Month and Submission Type

Between January 1 and December 31, 2014, Pennsylvania acute care facilities submitted 240,778 reports through PA-PSRS, bringing the number of reports submitted by these facilities since the program's inception to 2,271,370. Table 1 shows the distribution of submitted reports by month for calendar year 2014.

Approximately 2.9% of submitted reports were Serious Events, while 97.1% were Incidents. In 2014, the Authority

received 20,065 reports per month on average, an average decrease of 486 (2.4%) per month from 2013, the first annualized decrease in reporting through PA-PSRS. The number of Incident reports averaged 19,475 per month, an average decrease of 447 (2.2%) per month compared with the previous year. The number of Serious Event reports averaged 590 per month, which is an average decrease of 39 (6.2%) per month compared with 2013.

Table 1. Reports Submitted through PA-PSRS in 2014 by Month, Acute-Level Facilities

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Serious Events	625	549	620	605	632	590	535	609	537	605	567	606	7,080
Incidents	21,332	19,361	18,348	21,169	19,237	17,440	18,225	22,974	19,602	20,716	16,929	18,365	233,698
Total	**21,957**	**19,910**	**18,968**	**21,774**	**19,869**	**18,030**	**18,760**	**23,583**	**20,139**	**21,321**	**17,496**	**18,971**	**240,778**

Reports by Facility Type

As shown in Table 2, the total number of reports submitted through PA-PSRS in 2014 surpassed a quarter million. The vast majority of reports (87.1%) were submitted by hospitals; nursing homes submitted an additional 10.7% of the overall total.

The remainder of this data addendum focuses on acute care facilities; nursing homes are addressed in **Addendum F** on HAIs.

Table 3 demonstrates the trend of increasing numbers of report submissions from nonhospital acute-level facilities—ambulatory surgical facilities, birthing centers, and

abortion facilities—compared with hospitals from 2009 to 2014. Although both groups have increased reporting over that time period, the percentage from ambulatory facilities is increasing. That group of facilities saw 62.8% more reports submitted in 2014 than in 2009. This increase coincides with the implementation of the Patient Safety Liaison (PSL) Program; the Authority believes this increase is in part due to the increased presence of PSLs to assist facilities with their reporting practices.

Table 2. Reports Submitted through PA-PSRS in 2014 by Facility Type

	HOSPITALS	AMBULATORY SURGICAL FACILITIES	BIRTHING CENTERS/ ABORTION FACILITIES	ALL ACUTE- LEVEL FACILITIES	NURSING HOMES*	ALL FACILITIES REPORTING VIA PA-PSRS
Number of reports submitted	234,847	5,711	220	240,778	28,825	269,603
Number of facilities active for year ending December 31, 2014	239	302	24	565	703	1,268

* Nursing homes only submit reports of healthcare-associated infections through PA-PSRS.

Table 3. Reports Submitted through PA-PSRS since 2009 by Acute Facility Type

YEAR	HOSPITALS		AMBULATORY SURGICAL FACILITIES/BIRTHING CENTERS/ABORTION FACILITIES		ALL FACILITIES
	No.	% of Facility Type	No.	% of Facility Type	No.
2009	223,026	98.39	3,644	1.61	226,670
2010	221,855	98.33	3,769	1.67	225,624
2011	223,995	97.88	4,840	2.12	228,835
2012	230,017	97.78	5,232	2.22	235,249
2013	241,371	97.88	5,235	2.12	246,606
2014	234,841	97.54	5,931	2.46	240,778
Total*	**2,231,308**	**98.24**	**40,060**	**1.76**	**2,271,374**

* The Pennsylvania Patient Safety Authority began mandatory reporting statewide on June 28, 2004; these totals reflect submissions since that date, while the table shows data only from 2009.

Report Submission Trends

The trend line superimposed over the actual track of monthly reports in Figure 2 suggests that the volume of reports is increasing at a slower rate for acute level facilities through the end of 2014.

Figure 3 shows the three-year trends of reporting Serious Events and Incidents by acute-level facilities. Depicting the volume of Serious Event and Incident reports on a relative scale (24:1) shows that the volume of Serious Event reports has increased and then decreased somewhat over the long-term. Since 2007, Serious Event reports have been decreasing annually.

Reports by Event Type

Facilities use a classification taxonomy when reporting events through PA-PSRS. The first level of classification is the "event type," which addresses the most basic question about an occurrence: "What happened?"

The taxonomy includes second- and third-level subcategories. For example, the category "Falls" includes a series of subcategories, such as the following:

- Falls while lying in bed

- Falls while ambulating

- Falls in the hallways of the facility

- Other types of falls

The complete event type dictionary is a three-level, hierarchical taxonomy with 212 distinct event types that PA-PSRS and Authority analysts use to classify and discern patterns and trends in submitted reports.

Table 4 shows the percentage of reports submitted from acute-level facilities under each first-level event type in 2014. The most frequently reported events were errors related to procedure/treatment/test (23%) and medication errors (18%). While errors related to procedure/treatment/test was the event type most frequently reported through PA-PSRS, they were not the events most frequently associated with harm to the patient.

Figure 4 shows a comparison of the percentage of Serious Event and Incident submissions by event type.

Figure 2. Number of Submitted Reports since Inception of PA-PSRS from Acute-Level Facilities by Month
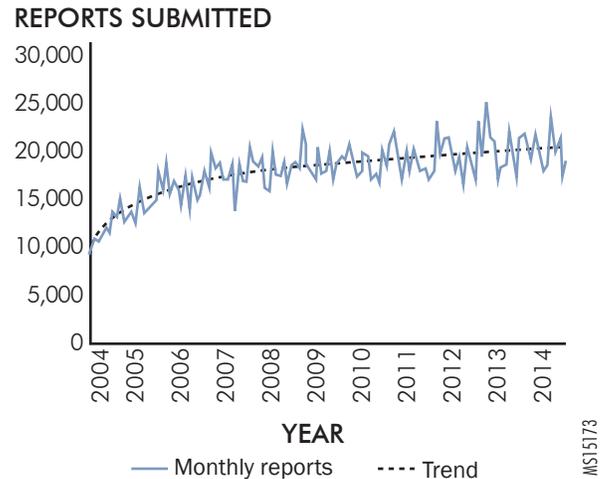
Figure 3. Number of Serious Event and Incident Reports since Inception of PA-PSRS from Acute-Level Facilities by Month
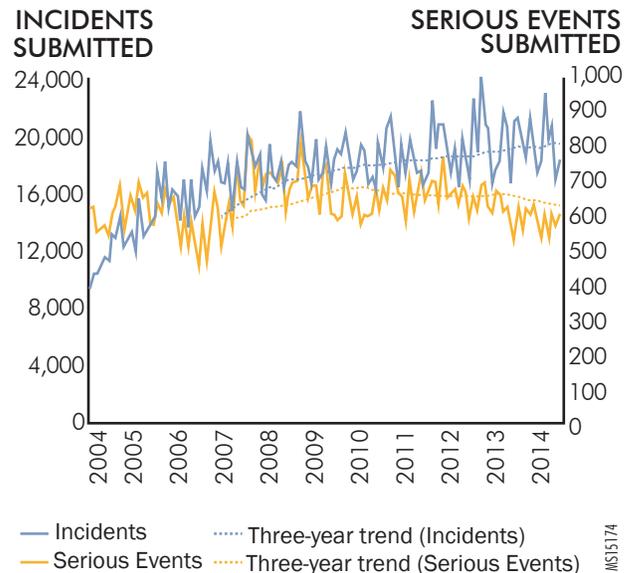
Table 4. Reports Submitted through PA-PSRS in 2014 by Event Type and Submission Type, Acute-Level Facilities

EVENT TYPE	SERIOUS EVENTS		INCIDENTS		TOTAL NO. OF REPORTS	% OF TOTAL REPORTS
	No.	%	No.	%		
Medication error	189	<1	43,988	>99	44,177	18
Adverse drug reaction	220	4	4,828	96	5,048	2
Equipment/supplies/devices	43	1	5,739	99	5,782	2
Fall	928	3	32,325	97	33,253	14
Error related to procedure/treatment/test	623	1	54,700	99	55,323	23
Complication of procedure/treatment/test	3,732	10	33,484	90	37,216	15
Transfusion	21	1	3,497	99	3,518	1
Skin integrity	587	2	32,364	98	32,951	14
Other/miscellaneous*	737	3	22,773	97	23,510	10
Total	**7,080**	**3**	**233,698**	**97**	**240,778**	**100**

* This is not a single category of completely unclassified reports but rather a category that includes specific subcategories that did not logically fit under other existing top-level headings. Examples of subcategories under other/miscellaneous are inappropriate discharge, other unexpected death, and electric shock to the patient.

Figure 4. Event Types by Percentage of Total Reports Submitted through PA-PSRS from Acute-Level Facilities in 2014
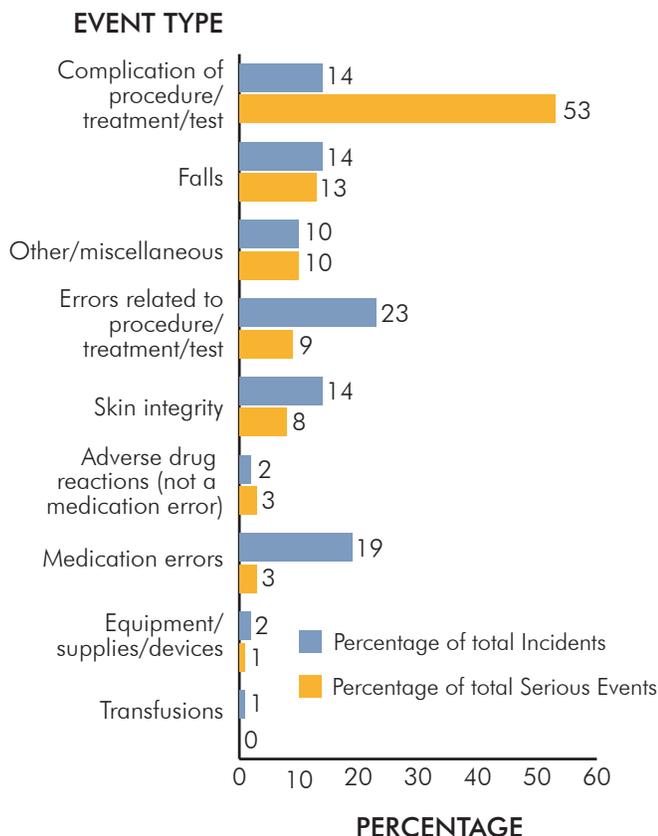
Reports by Level of Patient Harm

For every report submitted through PA-PSRS, the associated medical facility applies a 10-level scale to measure whether an event reached the patient and, if so, how much harm it caused.* This scale[2] ranges from "unsafe conditions" (e.g., look-alike medications stored next to one another) to the death of the patient, and it is summarized in Table 5.

Table 6 shows the reports received from acute-level facilities in 2014 categorized by the level of harm and event type. For the most part, the reports at each level of harm follow a similar distribution by event type as they do in the database as a whole. However, there are significant exceptions. For example, while complications of procedures/treatments/tests comprised 15% of reports overall in 2014, they comprised 53% of the reports of events involving harm or contributing to the patient's death.

*For example, an event in which a phlebotomist goes to draw blood from the wrong patient but catches the error by checking the patient's wristband before starting the blood-drawing procedure would be an event that did not reach the patient

Table 5. PA-PSRS Harm Scale for Acute-Level Facilities

HARM LEVEL	HARM SCORE	% OF REPORTS SUBMITTED IN 2014	DESCRIPTION
Unsafe conditions	A	12.42	Circumstances that could lead to an adverse event
Event, no harm	B1, B2, C, D	84.64	Often called a "near miss," an event that either did not reach the patient or did reach the patient but did not cause harm
Event, harm, excluding death	E, F, G, H	2.85	An event that reached the patient and caused temporary or permanent harm
Event, death	I	0.09	An event occurred that resulted in or contributed to death

Table 6. Reports Submitted through PA-PSRS in 2014 by Event Type and Level of Patient Harm, Acute-Level Facilities

EVENT TYPE	UNSAFE CONDITIONS		EVENT, NO HARM		HARMFUL EVENT		DEATH EVENT		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%
Medication error	2,097	7	41,891	21	185	3	4	2	44,177	18
Adverse drug reaction	102	<1	4,726	2	217	3	3	1	5,048	2
Equipment/ supplies/devices	874	3	4,865	2	43	1	0	0	5,782	2
Fall	297	1	32,028	16	914	13	14	7	33,253	14
Error related to procedure/ treatment/test	6,484	22	48,216	24	605	9	18	9	55,323	23
Complication of procedure/ treatment/test	3,079	10	30,405	15	3,621	53	111	53	37,216	15
Transfusion	522	2	2,975	1	20	0	1	0	3,518	1
Skin integrity	9,393	31	22,971	11	587	9	0	0	32,951	14
Other/ miscellaneous	7,054	24	15,719	8	680	10	57	27	23,510	10
Total	**29,902**	**12**	**203,796**	**85**	**6,872**	**3**	**208**	**<1**	**240,778**	**100**

At the other end of the spectrum, while medication errors comprised 18% of the total number of reports in 2014, they only comprised 3% of reports involving harm or contributing to the patient's death. No deaths were associated with equipment/supplies/devices or skin integrity events.

A certain portion of the reports could be referred to as examples of "unsafe conditions," meaning that there was an observed situation in which some harm was possible if corrective action was not taken. Astute healthcare providers may recognize unsafe conditions, or hazards, even before they impact individual patients. Unsafe conditions were cited in 12% of the reports submitted in 2014. As shown in Table 6, the event type for which unsafe conditions were most often reported was skin integrity (31%). The event type for which unsafe conditions were least often reported was adverse drug reactions (0.3%). Note that adverse drug reactions are not classified as medication errors.

Reports Involving the Patient's Death

In 2014, the Authority received 208 reports of events that may have contributed to or resulted in the patient's death from acute-level facilities, a decrease of 13 reports (5.9%) from 2013 (see Table 7).

Reports involving the patient's death accounted for 0.09% (i.e., less than one-tenth of one percent) of all submitted reports in 2014. Complication of procedures/treatments/tests was the predominant event type in which a patient death was involved; for context, recall that this event type comprises 15% of all reports in 2014. Of these reports involving death associated with complications, the majority describe patients who died following surgery or other invasive procedure (43.2%), patients who suffered cardiopulmonary arrest outside the intensive care unit setting (24.3%), or other complications (14.4%).

Table 7. Reports Submitted through PA-PSRS in 2014 Involving Patient Death, by Event Type, Acute-Level Facilities

EVENT TYPE	NO.	%
Medication error	4	2
Adverse drug reaction	3	1
Equipment/supplies/devices	0	0
Fall	14	7
Error related to procedure/treatment/test	18	9
Complication of procedure/treatment/test	111	53
Transfusion	1	0
Skin integrity	0	0
Other/miscellaneous	57	27
Total	**208**	**99***

* The total percentage does not equal 100 due to rounding.

Figure 5. High-Harm Reports Submitted by Acute-Level Facilities through PA-PSRS by Year, with Percentage of Annual Serious Events in Parentheses, 2005 to 2014

NO. OF HIGH-HARM REPORTS
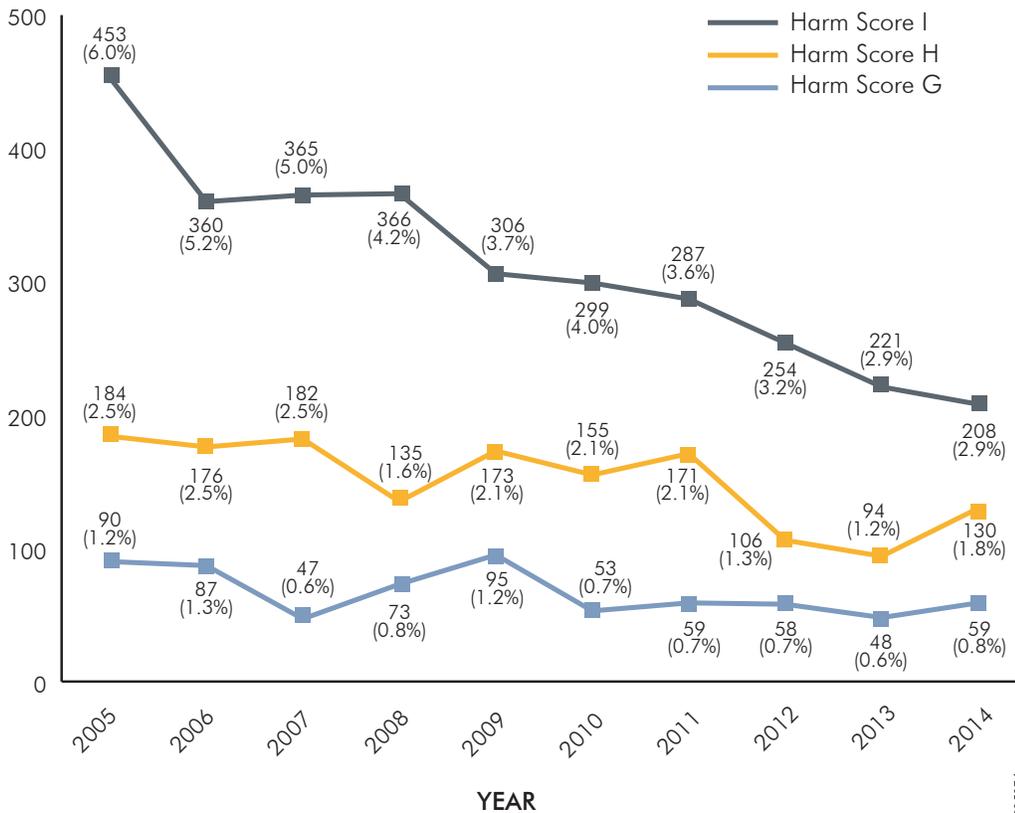
Many reports involving the patient's death were reported with the primary event type of other/miscellaneous. This category in the taxonomy contains the subcategory "Other Unexpected Death," which explains the extensive use of this category. Many of these reports involve patients who were found unresponsive, who went into respiratory arrest and for whom resuscitation efforts failed, or who were admitted to the hospital and died of their disease.

Patient Demographics

PA-PSRS collects few demographic details about patients. Patient disparity data is limited to gender and age. Table 8

Patient Gender

Of the 240,778 acute-level facility reports submitted in 2014, 125,722 (52.2%) involved female patients and 115,056 (47.8%) involved male patients. This proportion by gender is consistent with the Authority's observations since 2004. During childbearing years, women are more likely than men to have encounters with the healthcare system, and because women have a longer life expectancy than men, there are more women in the general population in the older age cohorts.[3]

The proportion of reports classified as Serious Events differed slightly according to the patient's gender, with 3.1%

Recalling from Table 5, reports with harm scores of G, H, and I are considered high-harm events. These high-harm events have been steadily decreasing annually since 2005, both in number and as a percentage of Serious Events, as shown in Figure 5.

provides the number of events reported by acute-level facilities in 2014 by patient gender and age cohort.

of reports involving female patients classified as Serious Events, compared with 2.8% for reports involving male patients.

Table 9 shows the distribution of reports by patient gender and event type. Many of the same patterns observed in 2013 are evident this year as well. Among these observed patterns is that the proportion of reports involving female patients was significantly higher among reports of adverse drug reactions. A slim majority of three event types involved male patients in 2014: equipment/supplies/devices, falls, and skin integrity.

Table 8. Reports Submitted through PA-PSRS in 2014 by Age Cohort and Gender, Acute-Level Facilities

AGE COHORT (YEARS)	FEMALE No.	%	MALE No.	%	ALL PATIENTS No.	%	% OF FEMALE PATIENTS
0 to 4	8,472	6.7	11,377	9.9	19,849	8.2	42.7
5 to 14	4,155	3.3	4,805	4.2	8,960	3.7	46.4
15 to 24	8,100	6.4	5,065	4.4	13,165	5.5	61.5
25 to 34	9,781	7.8	5,146	4.5	14,927	6.2	65.5
35 to 44	9,021	7.2	6,415	5.6	15,436	6.4	58.4
45 to 54	13,568	10.8	13,037	11.3	26,605	11.0	51.0
55 to 64	18,101	14.4	20,593	17.9	38,694	16.1	46.8
65 to 74	18,105	14.4	18,899	16.4	37,004	15.4	48.9
75 to 84	19,602	15.6	17,584	15.3	37,186	15.4	52.7
85+	14,748	11.7	9,795	8.5	24,543	10.2	60.1
Unknown	2,069	1.6	2,340	2.0	4,409	1.8	46.9
Total	**125,722**	**99.9***	**115,056**	**100.0**	**240,778**	**99.9***	**52.2**

* Total percentages do not equal 100 due to rounding.

Table 9. Reports Submitted through PA-PSRS in 2014 by Gender and Event Type, Acute-Level Facilities

EVENT TYPE	FEMALE		MALE		ALL PATIENTS	
	No.	%	No.	%	No.	% of Total
Medication error	22,449	50.8	21,728	49.2	44,177	18.3
Adverse drug reaction	3,301	65.4	1,747	34.6	5,048	2.1
Equipment/supplies/devices	2,885	49.9	2,897	50.1	5,782	2.4
Fall	16,388	49.3	16,865	50.7	33,253	13.8
Error related to procedure/treatment/test	29,540	53.4	25,783	46.6	55,323	23.0
Complication of procedure/treatment/test	21,059	56.6	16,157	43.4	37,216	15.5
Transfusion	1,886	53.6	1,632	46.4	3,518	1.5
Skin integrity	16,167	49.1	16,784	50.9	32,951	13.7
Other/miscellaneous	12,047	51.2	11,463	48.8	23,510	9.8
Total	**125,722**	**52.2**	**115,056**	**47.8**	**240,778**	**100.0**

Figure 6. Proportion of Hospital Reports through PA-PSRS by Gender and Age Cohort (2014), Admissions Data from 2013*
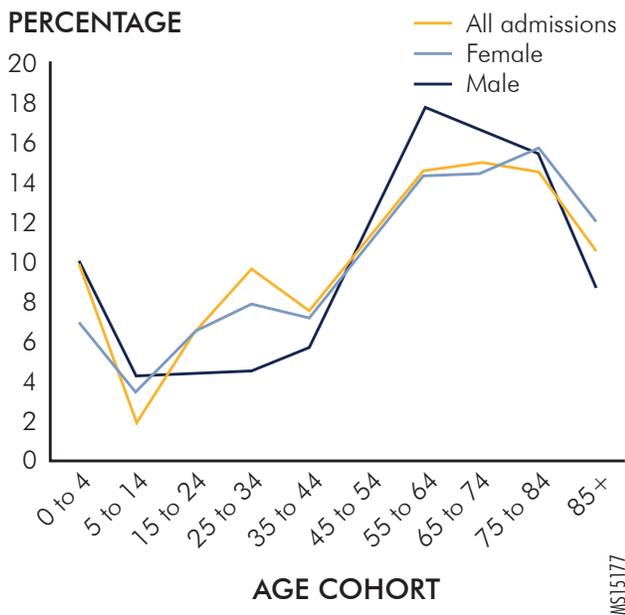
Based upon publicly available data from the website of the Pennsylvania Health Care Containment Council (http://www. phc4.org). Estimates are based on statewide inpatient data from 2013.

Patient Age

Figure 6 shows the proportion of reports submitted through PA-PSRS, from hospitals only, by gender and by patient age cohort. As noted above, this figure also illustrates that women are more likely than men to have encounters with the healthcare system during childbearing years. Patients age 65 or older accounted for 39.7% of all reports from hospitals through PA-PSRS in 2014.

Also shown in Figure 6 is the proportion of hospital inpatient admissions as reported by the Pennsylvania Healthcare Cost Containment Council (PHC4). The PHC4 data shows that patients age 65 or older make up 40.4% of the admissions to hospitals in 2013. However, this chart does not suggest that older patients are necessarily more likely than younger patients to be involved in a Serious Event or Incident. Rather, older patients' greater representation in the database simply reflects their greater representation in the healthcare system in terms of number of admissions and increased lengths of stay.

Patients in High and Low Age Cohorts

Elderly Patients

In the Authority's previous annual reports, several patterns of interest in reports involving elderly patients (65 or older) were identified. For example, elderly patients were

involved in 57.9% of falls reports from hospitals in 2009. This number declined steadily to 49.6% in 2014 (see Figure 7), an 8.3% proportional decrease.

In another area of interest concerning elderly patients, the percentage in this age group involved in skin integrity reports dropped to 66.7% in 2014. In addition, as recently as 2009, almost half of all reports combined (49.8%) involved patients 65 or older; this proportion dropped by 6.9% to 42.9% in 2014.

Perinatal Patients

There were 6,308 reports involving perinatal patients from hospitals (those age 20 days or younger), an increase of 364 reports (5.8%) from 2013. Less than two percent (1.55%) of perinatal reports were classified as Serious Events, noticeably lower than the percentage for all ages combined, which was 3% for the year.

About three-fifths (62.0%) of reports for perinatal patients were related to errors or complications of procedures/treatments/tests.

Approximately one-fifth (20.3%) of reports from hospitals involving perinatal patients were related to medication errors. This is the highest percentage in the last three years for this age cohort and event type (it was 19.6% in 2013 and 15.4% in 2012). Complications of procedures/treatments/tests accounted for 69.4% of the Serious Events reported for this age group.

Children and Adolescents

Reports submitted from hospitals through PA-PSRS in 2014 involving children and adolescents (i.e., age 21 or younger) totaled 36,583. The top two event types reported were medication errors, accounting for 32.7% of the reports, and errors related to procedures/treatments/tests, accounting for 26.2% of the reports. However, the event type complications of procedures/treatments/tests made up 52.8% of all Serious Events for this age group. This differs from 2013, when other/miscellaneous comprised 48.2% of Serious Events for the age group.

Figure 7. Hospital-Submitted PA-PSRS Reports of Specific Event Types Involving Elderly Patients (65 or older), 2009 to 2014
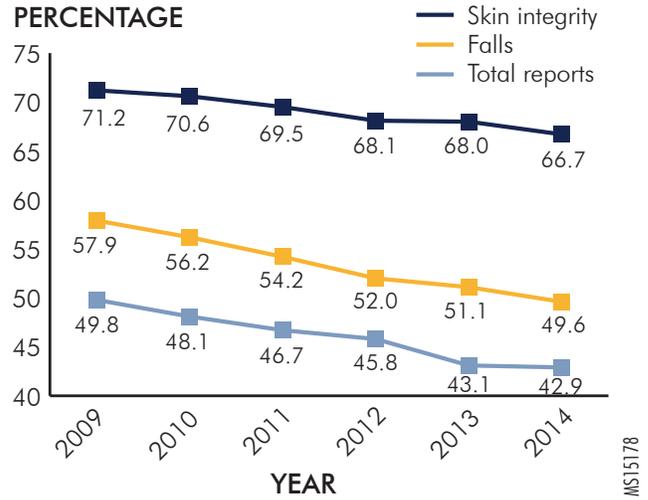
Figure 8. PA-PSRS Reports by Location or Department, 2014, Hospitals Only

Reports by Location/Department (Hospitals Only)

PA-PSRS has 155 designated care areas within hospitals. As illustrated in Figure 8, the care areas considered critical care areas and general medical/surgical units were cited as the locations for the greatest number of all reports submitted in 2014, each generating nearly a fifth (19.0% and 18.4%, respectively) of the total. Other hospital departments with higher report rates were pediatric care (9.4%), surgical services (9.3%), and intermediate units (8.8%).

While most hospital reports involved patients in the critical care and general medical/surgical areas, the greatest number of Serious Events involved patients in the surgical services area, accounting for nearly a third of Serious Events from hospitals (29.6%). The care area with highest proportion of Serious Events per submitted report was the diagnostic/labs care area (see Table 10).

Reports by Region and Submission Type

For the purposes of this report, the Authority Board of Directors has adopted a geographic breakdown of the commonwealth into six regions, as shown in Figure 9. This breakdown is based on the Department of Health's public health districts.

The variation in the number of reports submitted through PA-PSRS by geographic region (see Figure 10) is consistent with the population density and number of healthcare facilities in those areas. For example, the regions with the largest number of reports (Southeast and Southwest) were those with the commonwealth's two largest population centers: Philadelphia and Pittsburgh, respectively.

Figure 9. Regions of the Commonwealth, as Adopted by the Pennsylvania Patient Safety Authority
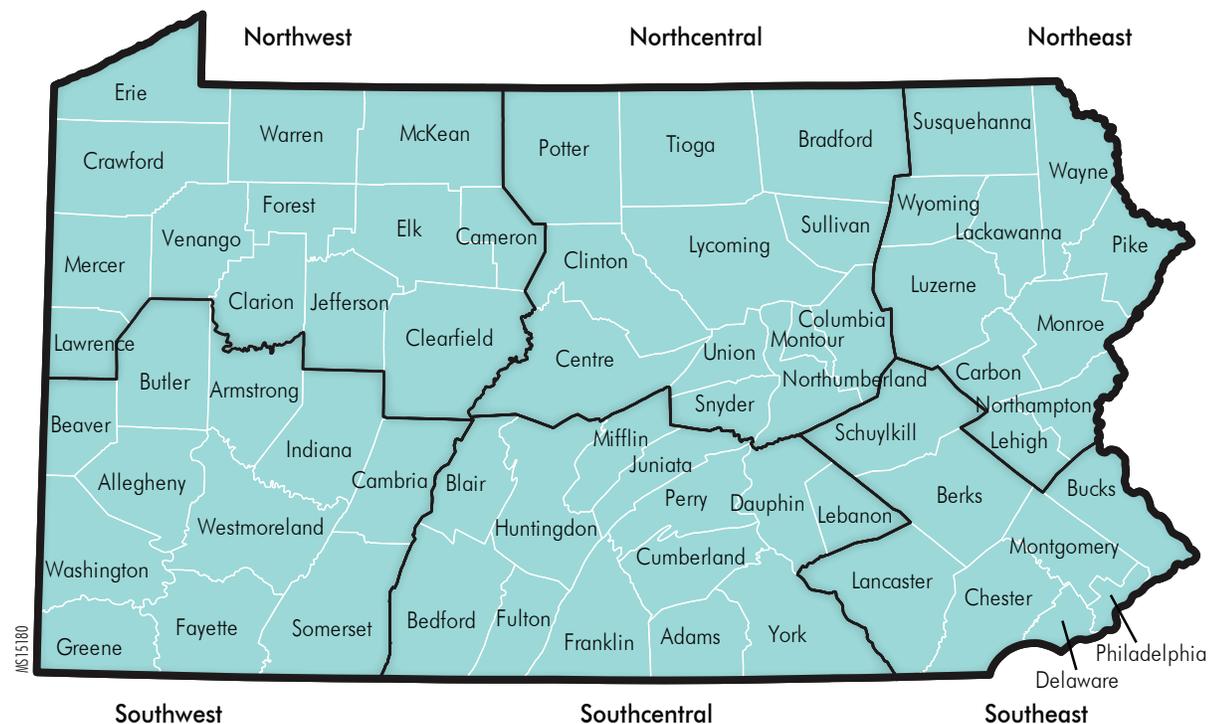
Adjusting the report volume for a measure of healthcare utilization paints a different picture. Figure 11 shows, by region, the number of reports from hospitals per 1,000 patient-days. This figure shows that, after accounting for the differences in the volume of healthcare provided in each region, facilities in the Northwest and Northcentral regions reported 43.7 and 41.7 Incidents per 1,000 patient-days, respectively. The rest of the regions reported from 23.2 to 31.3 Incidents per 1,000 patient-days.

Figure 12 shows that the Northwest and Northcentral regions submitted a greater proportion of Serious Events (3.9% of their reports) than the statewide pooled mean

(2.4%). Conversely, the Southeast region submitted the highest proportion of Incidents (98.5%), followed next by the Southwest region (97.9%).

This does not necessarily suggest that facilities in any of the regions were less or more safe than those in other regions. It may mean that the healthcare providers in certain facilities or regions have different perceptions of what constitutes potential patient safety issues, particularly for reports of unsafe conditions with no patient harm. Figure 13 shows that the Southwest region has the largest number of reports submitted per hospital.

Figure 10. Number of Serious Event and Incident Reports from Hospitals in 2014 by Region

Northwest · Northcentral · Northeast
⚠ 861 🗐 21,113
⚠ 708 🗐 17,231
⚠ 753 🗐 27,121
⚠ 1,335 🗐 62,523
⚠ 713 🗐 25,884
⚠ 1,167 🗐 75,438
Southwest · Southcentral · Southeast

⚠ Serious Events   🗐 Incidents

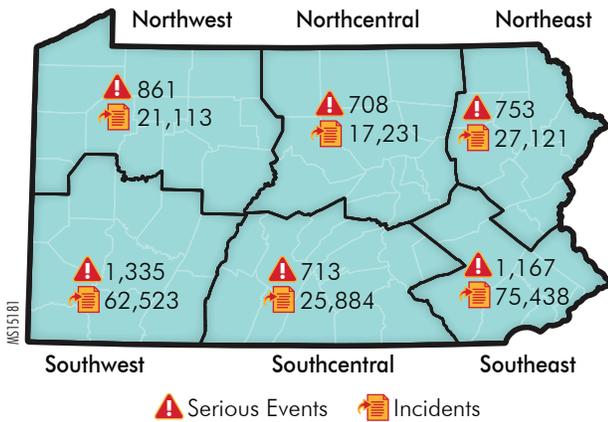**Figure 11. Reports from Hospitals in 2014 per 1,000 Patient-Days* by Region**

Northwest · Northcentral · Northeast
⚠ 1.8 🗐 43.7
⚠ 1.7 🗐 41.7
⚠ 0.8 🗐 27.6
⚠ 0.7 🗐 31.3
⚠ 0.7 🗐 28.0
⚠ 0.3 🗐 23.2
Southwest · Southcentral · Southeast

⚠ Serious Events   🗐 Incidents
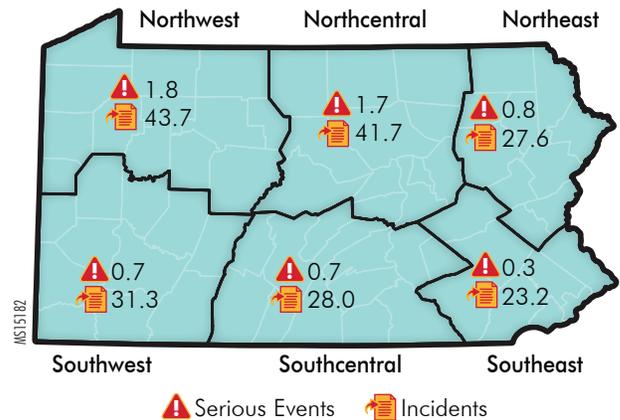
*Based upon publicly available patient-days data from the website of the Pennsylvania Health Care Containment Council (http://www.PHC4.org). Estimates are based on statewide inpatient data from 2013.

Figure 12. Percentage of Incident and Serious Event Reports from Hospitals in 2014 by Region

Northwest · Northcentral · Northeast
⚠ 3.9% 🗐 96.1%
⚠ 3.9% 🗐 96.1%
⚠ 2.7% 🗐 97.3%
⚠ 2.1% 🗐 97.9%
⚠ 2.7% 🗐 97.3%
⚠ 1.5% 🗐 98.5%
Southwest · Southcentral · Southeast

⚠ Serious Events   🗐 Incidents
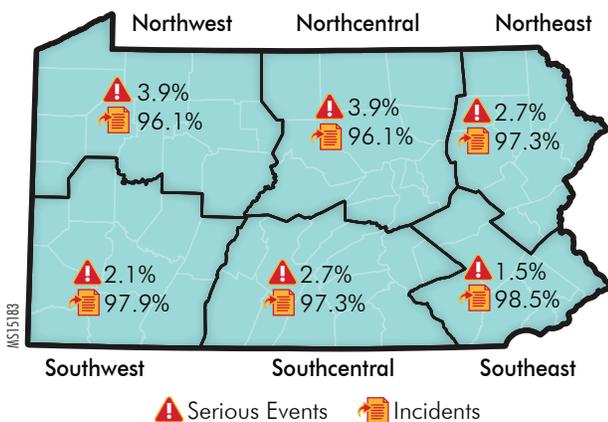
Figure 13. Number of Reports Submitted per Hospital in 2014 by Region

Northwest · Northcentral · Northeast
879
849
873
1,182
813
930
Southwest · Southcentral · Southeast

Statewide pooled mean = 950
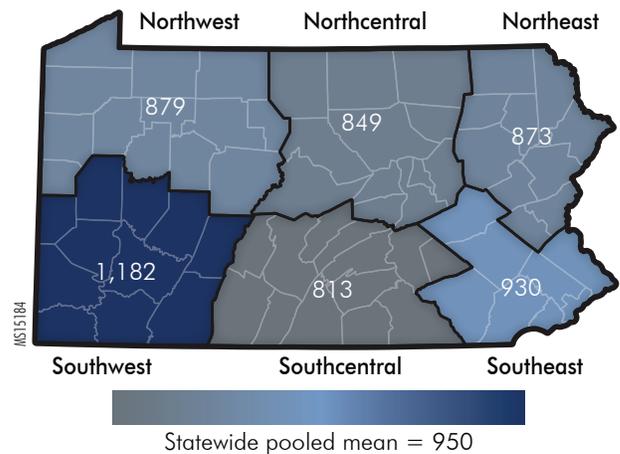
Table 10. Number and Percentage of Serious Events Submitted by Hospitals through PA-PSRS in 2014, by Care Area Location

LOCATION	NO. OF SERIOUS EVENTS	NO. OF REPORTS	% OF SERIOUS EVENTS BY LOCATION	% OF TOTAL SERIOUS EVENTS (N = 5,537)
Diagnostic/labs	260	2,966	8.8	4.7
Surgical services	1,639	21,837	7.5	29.6
Inpatient psychiatric	349	9,598	3.6	6.3
Inpatient rehabilitation	362	11,302	3.2	6.5
Specialty units	328	13,243	2.5	5.9
14 other care groups	2,599	175,901	1.5	46.9

Conclusion

The data presented in this addendum illustrates the continued progress among medical facilities in the commonwealth to identify and report patient safety events while decreasing the number of Serious Events among those reports. In 2014, the monthly average number of Serious Events decreased by 6.2% compared with 2013. The number of Serious Events involving deaths continued to decline annually. As the Authority completes its tenth year of collecting, analyzing, and providing education about adverse medical events, the data trends noted may be a positive reflection of the efforts made by healthcare institutions in the commonwealth.

Notes

1. 2002 Pa. Laws 154, No. 13. Medical Care Availability and Reduction of Error (MCARE) Act. Also available at https://www.portal.state.pa.us/portal/server.pt/document/495911/hb1802_pdf

2. National Coordinating Council for Medication Error Reporting and Prevention. NCC MERP index for categorizing medication errors [online]. 2001 Feb [cited 2015 Jan 13]. http://www.nccmerp.org/medErrorCatIndex.html

3. Nowatzki N, Grant KR. Sex is not enough: the need for gender-based analysis in health research. Health Care Women Int 2011 Apr;32(4):263-77.

Addendum C: The *Pennsylvania Patient Safety Advisory:* The Path of Success

The Pennsylvania Patient Safety Advisory provides timely original scientific evidence and reviews of scientific evidence that can be used by healthcare systems and providers to improve healthcare delivery systems and educate providers about safe healthcare practices. The emphasis is on problems reported to the Pennsylvania Patient Safety Authority, especially those associated with a high combination of frequency, severity, and possibility of solution; novel problems and solutions; and problems in which urgent communication of information could have a significant impact on patient outcomes.[1]

Optimizing patient safety is indeed a journey, and there has been excellent progress in Pennsylvania.[2] The grand vision and exceptional work since 2004, when the first *Advisory* was published, has yielded not only more than 475 safety-focused articles to date but tangible patient safety improvements in Pennsylvania.[3] The following pages illustrate the breadth of the Authority's *Advisory* in 2014, as well as during its 11-volume history, and its demonstrated value among the healthcare community.

Through its *Advisory*, the Authority will continue to help make healthcare as safe as possible for patients in Pennsylvania. As 2015 unfolds, look for enrichments in the

readability of the articles and the accompanying practical resources. The content, design, and distribution methods for articles and resources will sharpen further. The goal will remain presenting information in a practical, straightforward manner while maintaining the important scientific process that provides validity. The Authority will investigate fresh formats for information to reach patient safety officers, infection prevention designees, providers, and executive and management leadership in a convenient manner.[2]

In the background, analysts will leverage new tools to mine the rich information included in the event narratives that Pennsylvania healthcare facilities report through the Authority's Pennsylvania Patient Safety Reporting System (PA-PSRS). The issues raised by this constituency and overall readership, particularly in events reported through PA-PSRS by Pennsylvania facilities, informs this work. Pennsylvania healthcare facilities are encouraged to continue to submit useful information in event reports, especially within the narratives, and to communicate what more the Authority can do to facilitate these efforts. This hand-in-hand collaboration will support healthcare providers throughout Pennsylvania in the Authority's quest to provide the safest care possible for Pennsylvania patients and their families.[2]

Notes

1. Pennsylvania Patient Safety Authority. About the Pennsylvania Patient Safety Advisory [online]. [cited 2015 Jan 24]. http://patientsafetyauthority.org/ADVISORIES/Advisory Library/Documents/editorial_info.pdf

2. Doering MC. A change in clinical direction. Pa Patient Saf Advis [online] 2014 Dec [cited 2015 Jan 24]. http://patient safetyauthority.org/ADVISORIES/AdvisoryLibrary/2014/ Dec;11(4)/Pages/180.aspx

3. Clarke JR. A decade of dedication to improvement. Pa Patient Saf Advis [online] 2013 Dec [cited 2015 Jan 24]. http://patientsafetyauthority.org/ADVISORIES/Advisory Library/2013/Dec;10(4)/Pages/146.aspx

2014 Articles

Surgery

Anesthesia Blocks
ASF Cancellations
Distractions in the OR
Electronic Records
Robotic-Assisted Surgery

Sleep Apnea
Time-Out
Uterine Morcellation
Wrong-Site Surgery

Knowledge & Behavior

Autism
Consumer Awareness
Feeding Tubes
Healthcare Worker Fatigue
Patient Aggression

Opioids

Bariatrics
Surgical Site Infection

Hand Hygiene

Newborn Safety

Infection

PV Catheters

Falls

Best Practices
Falls Event Type Decision Tree
Patient Sitters to Reduce Falls

Medications

Adverse Drug Reactions
Analysis of IV Line Errors
High-Alert Medications

Content is grouped according to predominant patient safety foci. For more information by areas of focus, see "Patient Safety Focus" at http://patientsafetyauthority.org/Pages/BBTPatientSafetyFocus.aspx.

Scope

475+ articles
published in 56 issues
and supplements
since March 2004

PENNSYLVANIA
PATIENT
SAFETY
ADVISORY
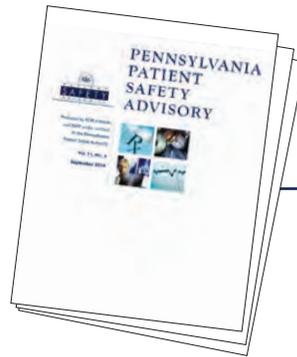
47 toolkits available, including
myriad tools (2014 emphasized)

Applying the Universal Protocol to Radiology Diagnostic Radiation and Pregnancy
Norovirus Anticoagulation Management Service **Obesity** ASF Infection Prevention Practices
Managing Clinical Emergencies Diagnostic Error Drug Shortages
ASF Patient Screening and Assessment Blood Transfusion Process
Hospital Bed Safety Safety in the MR Environment Contrast-Induced Nephropathy Expressed Breast Milk
Patient Safety Practices Vacuum-Assisted Vaginal Delivery Difficult Intubation
Newborn Injuries Airway Fires during Surgery **Hand Hygiene** Tubular Dressing Retainers
CAUTI Prevention Practices Preventing Retention of Surgical Items Clostridium Difficile Strategies
Bone Cement Implantation Syndrome **Preventing Wrong-Site Surgery** Insulin Therapy
Verbal Orders **Opioids** Color-Coded Wristbands Temporary Epicardial Pacing Wires Care at Discharge
Pneumatic Tourniquets Influenza (Flu) HYDROmorphone Risk Reduction CLABSI Risk Reduction
Nursing Home Infection Prevention Practices **Obstructive Sleep Apnea** Skin Tears
Surgical Site Infections Patient Flow in the Emergency Department Blood Specimen Labeling
Aspiration Screening **Falls** Behavioral Health Patient Safety Pneumonia

On the Web

Web traffic (2014):

Total website hits: **1,051,530**

Advisory hits: **567,129**

Toolkit hits: **104,042**

MS15114

2014 *Advisory* Hits: Top Articles per Issue

March
Patient Sitters to Reduce Falls
Analysis of IV Line Errors

June
Distractions in the OR
Healthcare Worker Fatigue

September
Robotic-Assisted Surgery
Newborn Safety

December
Falls Event Type Decision Tree
Hand Hygiene

0   500   1,000   1,500   2,000   2,500   3,000   3,500
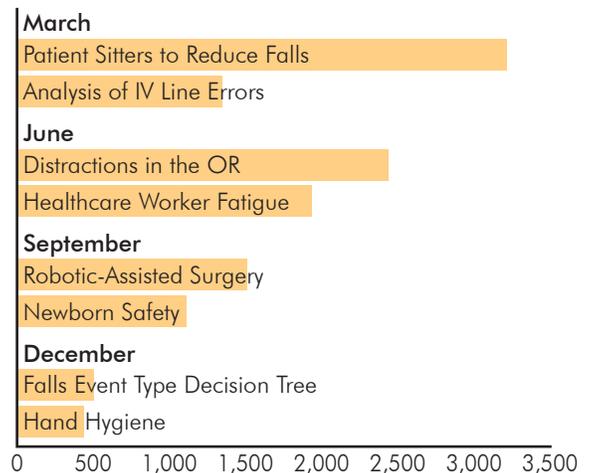
Note: Hits as of December 31, 2014. Articles published earlier
have had more time to garner hits.

Readership
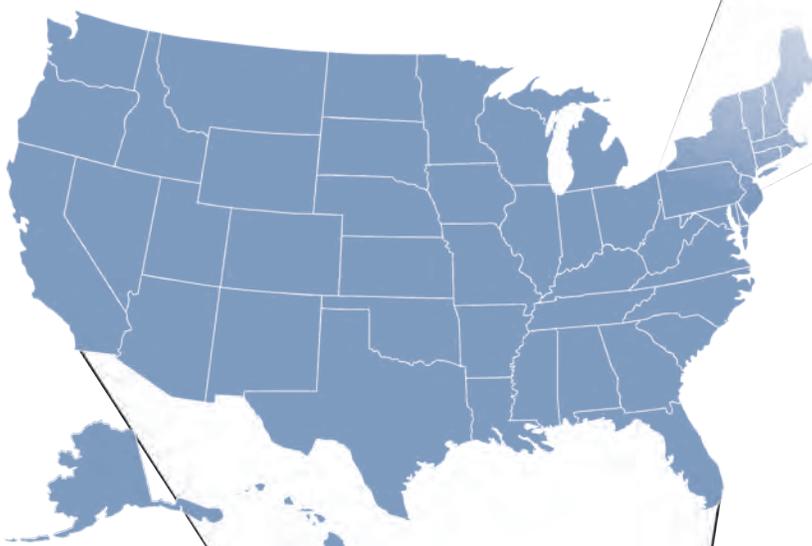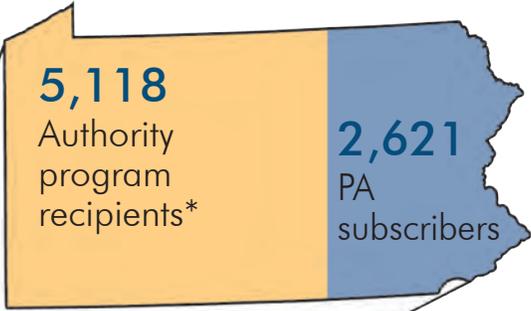
5,118 Authority program recipients*

2,621 PA subscribers

4,377 subscribers in the US

Subscribers in all **50** states, plus DC, the Virgin Islands, Puerto Rico, and other US territories.

Subscribers in **44** countries

4,566 subscribers worldwide
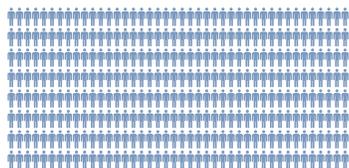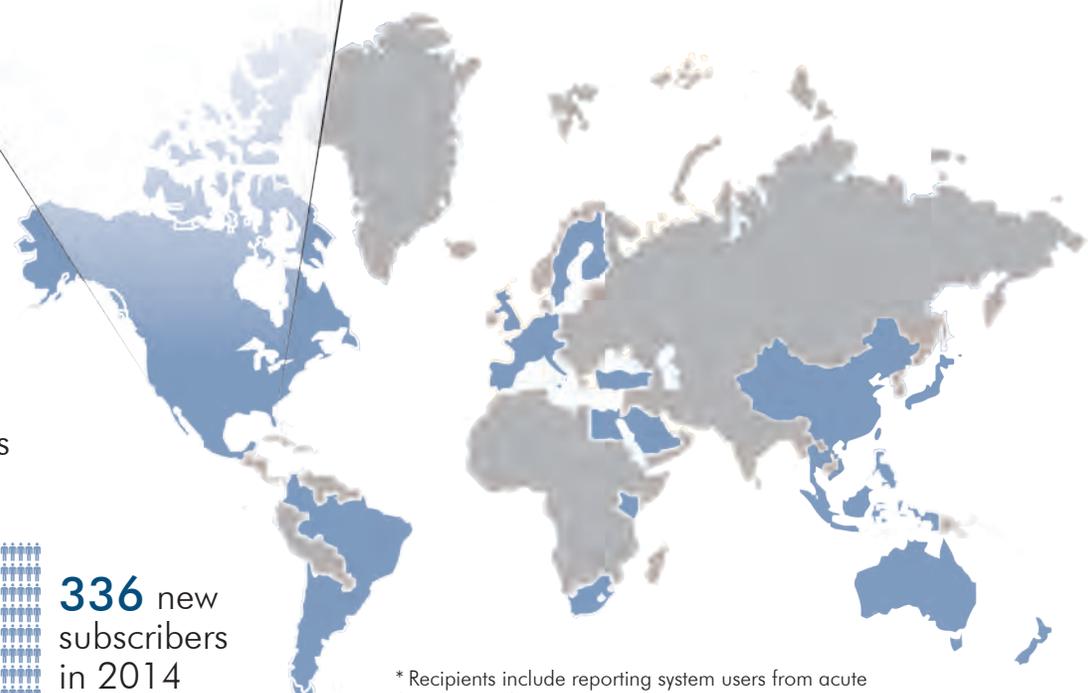
336 new subscribers in 2014

* Recipients include reporting system users from acute healthcare facilities and nursing homes, as well as board and panel members in Pennsylvania. These recipients are not included in the total numbers of PA/US/worldwide subscribers indicated above.

Added Value

4,100+ documented* changes in Pennsylvania acute care facilities and nursing homes directly attributed to *Advisory* articles since 2005

2014 Ratings of the *Advisory*

	Usefulness	Relevance	Readability	Scientific Quality	Educational Value
Hospitals	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆
Nursing Homes	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆
Weighted Average	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆

*According to Authority user surveys (internal reports): acute facilities (2005-2014) and nursing homes (2009-2014).

> "The *Advisories* constitute an effective knowledge dissemination strategy, are being used by facilities to make changes at the local level, and are shared across and outside of Pennsylvania."
>
> – Diane C. Pinakiewicz, MBA
> Author of *Alignment of Authority Activities with National Patient Safety Priorities*

> "The Authority is far, far in front of others, doing it right and using information, put in terms providers can use, to make improvements. . . . The *Advisories* are wonderful. . . . I have heard leading CMS staff express respect for the Authority."
>
> – Nancy Foster,
> Vice President for Quality and Patient Safety Policy,
> American Hospital Association

11,900+ *Advisory*-based CME credits, 2006 through 2014†

- ■ Tests that physicians passed for credit
- ■ Credits obtained
- — Available activities
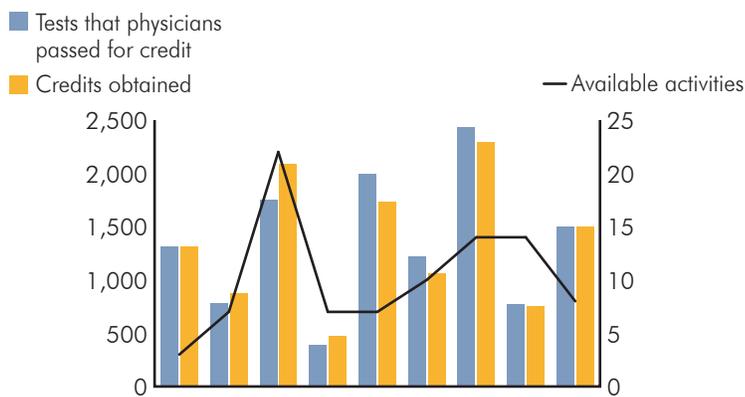
† The Authority applies select articles for CME credit through the Pennsylvania Medical Society (http://www.pamedsoc.org).

As of December 31, 2014, there have been more than **660** instances of Authority-associated content attributed or mentioned in the media or in medical literature, with more than **300** of those instances specifically referencing *Advisory* articles.

Some organizations that have cited *Advisory* articles:

- ▶ US Food and Drug Administration
- ▶ Joint Commission
- ▶ American Society of Anesthesiologists
- ▶ Agency for Healthcare Research and Quality

MS15022

Addendum D: Educational Programs

The Authority conducted numerous patient safety programs at the facility, regional, and state level. Educational offerings were selected based on audience demand, report analysis, current industry topics, and regulatory changes. The audiences included healthcare facility leadership, patient safety committees, nurses, physicians, patient safety officers, respiratory therapists, radiology staff, therapy staff, and many others. Attendance reached almost 10,000 individuals in 2014 (see the Figure). Modalities included in-person education, webinar sessions, and online learning.

Each program was evaluated by the participants, and these responses were incorporated into program improvement and future planning. Continuing education credits were offered for registered nurses for on-site programs at no charge to the facility. Certificates of attendance were offered for other modalities.

Figure. Total Educational Program Attendance

NO. OF ATTENDEES
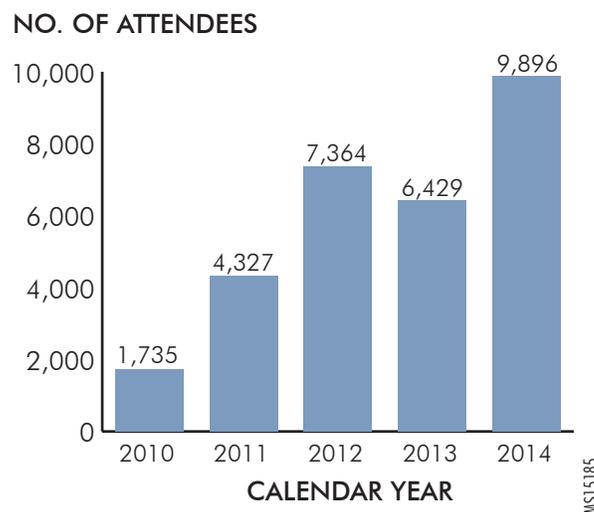
On-Site Educational Topics

Patient safety liaisons (PSLs) and other subject matter experts are available to conduct patient safety education programs at the request of the facility. Common topics include the following:

- Falls

- Human factors

- Culture of safety in the operating room

- Teamwork and communication

- TeamSTEPPS

- Root-cause analysis

- Medication safety

- Medical Care Availability and Reduction of Error (MCARE) Act reporting requirements

- Value of near-miss reporting

- Infection prevention

- Operating room fire safety

- Preventing wrong-site surgeries

- Just culture

- Failure mode and effects analysis (FMEA)

- Using data to improve patient safety

2014 Webinars

Webinars continued to be a new additional educational focus in 2014 to reach a broader audience. Feedback has generally been very positive, with facilities specifically stating that webinars allow more of their employees to attend the sessions. Some suggestions were noted in the facility annual survey regarding the timing of the webinars. As a reminder, most webinars are made available in a recorded format on the Authority website for viewing on demand. The titles and objectives of the webinars conducted in 2014 are as follows:

- Creating Change through Engaged Leaders and Inspired Teams: How to Make It All Happen
  — Articulate best practices around engaging leaders
  — Implement activities that have been associated with successful change management
  — Demonstrate the common features associated with successful and unsuccessful team building
  — Understand lessons from case studies associated with successful change management in the healthcare setting
- Spreading and Sustaining Change
  — Define spread and sustainability
  — Discuss strategies to spread change throughout the organization
  — Discuss key components of sustainability
- Health Information Technology (HIT) Errors and Patient Safety
  — Understand the regulatory framework developing around HIT
  — Identify the hazards associated with electronic health records (EHRs) being reported to safety reporting programs
  — Analyze an EHR-related adverse event for failure modes and potential solutions
  — Describe how to approach a safety evaluation of the EHR
- Modifiable Risk Factors for Respiratory Tract Infections
  — Assess the effect of modifiable risk factors that increase the potential for respiratory tract infections in nursing home residents

— Translate three evidence-based interventions into actionable facility practices shown to have a significant impact on lower respiratory tract infection outcomes
— Describe the rationale and apply the key components of an effective oral hygiene program
- Fall and Fall with Injury Prevention
  — Understand the four types of falls and which ones to target when creating a fall/fall injury prevention program
  — Describe how critical thinking individualized to a patient helps avoid dangerous situations
  — Explain why simulation scenarios are useful as a learning tool
- Safe Injection Practices
  — Communicate injection safety tenets effectively to the healthcare team
  — Understand how "adherence gaps" related to safe injection practices and basic infection control have led to outbreaks and avoidable patient harms
  — Identify some of the leading risks pertaining to healthcare-associated infections and patient safety during acquisition and consolidation
  — Learn how to minimize patient safety risks and potential liabilities associated with healthcare integration
- Business Case for Patient Safety
  — Recognize when and why a business case approach is effective
  — Illustrate how to use business case methodology
  — Apply business case analysis to projects
  — Discuss the keys to presenting the case persuasively
  — Review practical examples of business case methods

Online Learning

The Authority offered for the first time in 2014 an online learning program. This first program was designed to educate Pennsylvania long-term care providers on the newly released McGeer criteria for infection reporting. This online learning modality was well received and provided an opportunity to engage a large audience in an active learning experience. The Authority is excited to offer this learning modality in the future. Additional information can be found in **Addendum F**.

Regional Educational Offerings

In-person regional education offerings are conducted in various geographic regions based on need and interest on a rotating basis (see the Table).

Table. 2014 Authority Educational Offerings by Region

WEST	SOUTHCENTRAL/NORTHEAST	DELAWARE VALLEY
Patient Safety Officer Basics	Patient Safety Officer Basics	Patient Safety Officer Basics
Getting to the Root of the Problem	Just Culture: Balancing Error and Accountability	From Data to Information: Measures and Metrics in Patient Safety
Using Communication and Teamwork to Improve Patient Safety	Getting to the Root of the Problem	Professional Networking Sessions
Professional Networking Sessions	Using Communication and Teamwork to Improve Patient Safety	
	From Data to Information: Measures and Metrics in Patient Safety	
	Professional Networking Sessions	

Patient Safety Officer Basics Course

This course continues to be a key foundational program for new patient safety professionals and other clinical leaders. This course was offered in three locations in 2014 and was well attended. This course teaches the participants key elements of the MCARE Act and fundamentals of patient safety concepts. These sessions were attended by 90 participants. In addition, PSLs offer a compressed version of this program as just-in-time learning for new patient safety officers on-site.

Regional Half-Day Offerings

Two years ago, a statewide program called Patient Safety You Design was developed. This offering was originally featured as a full-day program encompassing four half-day sessions. Attendees selected two of the four sessions to attend. The programs were well received, but participants were limited to the number of sessions they could attend. In 2013-2014, the Delaware Valley region offered the program in four separate sessions throughout the year to allow participants to attend one, two, three, or all four sessions.

In 2014, the program continued to be offered on a regional basis in either single half-day sessions or full-day sessions that included one topic in the morning and one in the afternoon. Sessions were scheduled per regional audience preference. The programs continue to have a high satisfaction rate.

The modules are as follows:

- Getting to the Root of the Problem
  - This course is designed to assist the participant to define root-cause analysis, determine when to conduct a root-cause analysis, and implement the concepts through case study.

- Using Communication and Teamwork to Improve Patient Safety
  - This course is designed to assist the participant to identify strategies for improving teamwork, achieving high reliability, and improving communication.

- Just Culture: Balancing Error and Accountability
  - This course is designed to introduce the participant to the Just Culture model, providing discussion of the three classifications of behavior, differentiating between the three duties, and exploring the use of the Just Culture Algorithm.

- From Data to Information: Measures and Metrics in Patient Safety
  - This course is designed to assist participants in understanding how data and measurement play a role in patient safety, to describe basic data and measurement concepts and tools, and to demonstrate ideas for data presentation.

Professional Networking Sessions

PSLs facilitate networking sessions for patient safety officers and guests routinely throughout the commonwealth. Networking sessions offer patient safety officers and their guests an opportunity to discuss commonalities in patient safety issues and share solutions and improvement practices. Most networking sessions include an educational component on a topic of interest. Educational programs in 2014 included Workplace Violence – Active Shooter, Human Factors in Ambulatory Surgery, Breakdowns in the Medication Reconciliation Process, Aligning the Lines: An Analysis of Intravenous Line Errors, Distractions in the Operating Room, and a Systems and Behavioral Approach to Improve Hand Hygiene.

Academic Institutions and Professional Organizations

The Authority continues to receive educational requests from both academic institutions and professional organizations throughout Pennsylvania. Multiple patient safety educational programs have been presented at universities across the commonwealth and professional organizations, such as those representing risk managers, quality professionals, nurse leaders in acute and long-term care, infection preventionists, operating room nurses, and respiratory therapists. The Authority embraces these opportunities to connect with both emerging and established healthcare professionals.

Patient Safety Liaison Program

The Patient Safety Liaison Program continues to provide a unique resource to Pennsylvania healthcare facilities. PSLs are a facility's personal link to the Authority. Every Pennsylvania hospital, ambulatory surgical facility, birthing center, and abortion facility is assigned one of seven regional PSLs. Each PSL serves as an educator and consultant to their assigned facilities, providing on-site educational programs, assisting in collaborative work, analyzing patient safety events, and providing methods for improvement through *Pennsylvania Patient Safety Advisory* articles,

toolkits, and other available resources. In addition to conducting 189 educational sessions, PSLs made over 900 visits to individual healthcare facilities in 2014.

Examples of PSL activities are as follows:

- Staff, leadership and executive education sessions at the facility, regional, and state levels

- New patient safety officer orientation

- One-on-one assistance to patient safety officers and other clinical leaders

- Facilitation of root-cause analyses

- Facilitation of FMEAs

- Third-party observation for process improvement activities (e.g., wrong-site surgery initiatives, improvement in stat cesarean section times, debriefing processes)

- Participation in facility activities for National Patient Safety Awareness Week and National Nurses Week

- Participation in regional and statewide collaborations

- Facilitation of professional networking and idea sharing

Addendum E:
The Journey to Improve Patient Safety through Collaboration

To collaborate is "to work with another person or group in order to achieve or do something."[1] The Authority has found that collaborating with facilities in Pennsylvania has enhanced improvement in specific areas of healthcare and facilitated improvement in patient safety events. The Authority encourages all facilities in Pennsylvania to become involved in collaborative efforts. In 2014, the Authority's collaboration projects provided access to evidence-based best practices, education, tools, resources, facility networking and sharing, and published articles in the *Pennsylvania Patient Safety Advisory* that would allow the work to be shared statewide. The work with the Hospital and Healthsystem Association of Pennsylvania

(HAP) Pennsylvania Hospital Engagement Network (HAP PA-HEN) utilized the majority of the Authority's collaborative resources in 2014; however, the Authority was also able to begin a collaborative project with long-term care facilities to prevent catheter-associated urinary tract infections (CAUTIs). In addition, the Authority fostered collaborative partnerships in 2014 with the Philadelphia Department of Public Health, Quality Insights Quality Innovation Network, and the Health Research and Educational Trust (HRET) national implementation of the Comprehensive Unit-based Safety Program (CUSP) for CAUTI in long-term care. Following is a summary of the collaborative and partnership activities.

HAP's Pennsylvania Hospital Engagement Network*

The Authority continued to work with HAP and other Pennsylvania healthcare organizations through the federal Partnership for Patients program. HAP PA-HEN continued its work with hospitals to reduce healthcare-acquired conditions and wrong-site surgeries, with an additional contract award for 2014. Approximately 118 Pennsylvania hospitals participated in the HAP PA-HEN collaborative projects (see the Figure).

The goals of the program were as follows:

- *To keep patients from getting injured or sick.* By the end of 2014, decrease preventable hospital-acquired conditions by 40% compared with 2010.

- *To help patients heal without complication.* By the end of 2014, decrease preventable complications during a transition from one care setting to another so that hospital readmissions are reduced by 20% compared with 2010.

Figure. HAP PA-HEN Participants
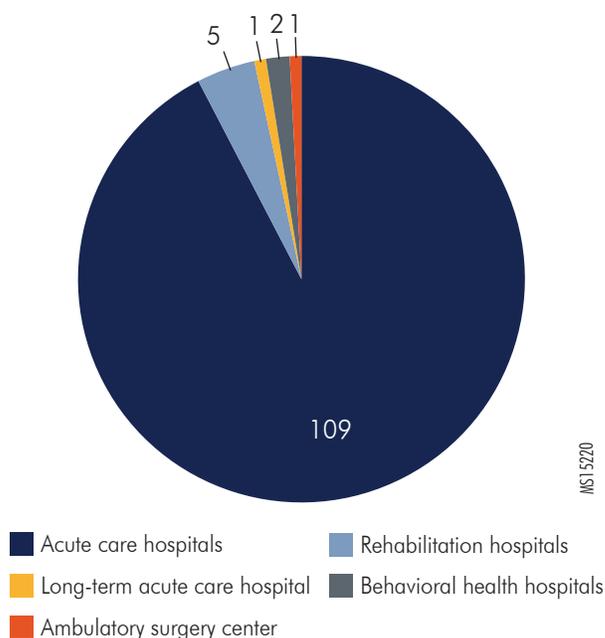
Legend:
- Acute care hospitals
- Long-term acute care hospital
- Ambulatory surgery center
- Rehabilitation hospitals
- Behavioral health hospitals

MS15220

HAP is the primary lead with the federal government for this program and partnered with the Authority, the Health Care Improvement Foundation, the Pennsylvania Health Care Quality Alliance, and Quality Insights of Pennsylvania in developing and implementing the HAP PA-HEN initiatives. The HAP PA-HEN achieved a 37% reduction in preventable all-cause harm and a 26% reduction in all-cause readmissions. HAP PA-HEN estimates the efforts of this initiative have resulted in the potential avoidance of more than 136,000 patient harm events and an estimated cost avoidance of approximately $694 million.[2] These results are interim and are subject to final verification by the Centers for Medicare and Medicaid Services as part of the Partnership for Patients formal evaluation process, which is currently being conducted. Highlights of the Authority projects (adverse drug events [ADEs], falls, and prevention of wrong-site surgery) are below.

Preventing Harmful Adverse Drug Events Related to Anticoagulants, Insulin, and Opioids

HAP PA-HEN worked with the Authority to implement a statewide ADE project aimed at reducing and preventing harm related to anticoagulants, insulin, and opioids. Data from the Authority and the Institute for Safe Medication Practices' national Medication Error Reporting Program determined that opioids, anticoagulants, and insulin are among the most frequent high-alert medications to cause patient harm. The goals of the ADE project were to improve practitioners' knowledge of and the processes associated with the use of anticoagulants, insulin, and opioids and to reduce the number of harmful events involving anticoagulants, insulin, and opioids for hospitals participating in the immersion project by 40% from the baseline by December 2014.

In 2014, the ADE project completed a second opioid knowledge assessment to reassess any changes in knowledge since the first assessment in 2012. Overall, improvement in knowledge about the use of opioids did occur, and although statistically significant, the improvement was small. In 2014, the ADE team developed insulin and anticoagulant assessments and distributed them to the hospitals to complete. These tools are available on the Authority's website at http://patientsafetyauthority.org/EducationalTools/Patient SafetyTools/opioids/Pages/home.aspx.

The outcome measures utilized for this project were as follows:

- Opioids:
  — Naloxone use
  — Rapid response team calls for anticoagulants, insulin, and opioids

- Insulin:
  — Blood sugars less than 50 mg/dL

- Anticoagulants:
  — International normalized ratios (INRs) greater than 5

Patients may experience symptoms such as respiratory depression, sedation, and hypotension when they receive a high dose of an opioid. Naloxone is a pure opioid antagonist that prevents or reverses those side effects of opioids. The immersion project hospitals measured the number of patients who may have been harmed with the use of opioids by comparing the number of patients prescribed an opioid against the number of those patients who needed to be given naloxone.

In addition, some patients may need immediate attention due to the serious effects from opioids and require a team of practitioners, often called a rapid response team, to help overcome the effects from the opioids. The immersion project hospitals measured the number of patients prescribed an opioid and how many of those patients needed a rapid response team visit.

The goal of the project was to reduce the number of harmful events that resulted in either the use of naloxone or rapid response team calls. Naloxone use showed a 42% decrease from baseline for patients prescribed opioids. The rate of rapid response calls showed a 58% decrease from baseline in team deployment for events due primarily to the effects of opioids compared with all rapid response team events.

Some medications can have their effects monitored by the use of lab results. For example, patients prescribed warfarin, an anticoagulant, can have the effects of warfarin measured based on an INR, and patients receiving insulin, used to treat diabetes, can be monitored by measuring their blood glucose values. When these lab values exceed a normal range, patients are at risk of being harmed from those medications and often have to be treated to reverse or bring these lab values back within range.

Collaboration
Tools Used for Collaborative Change
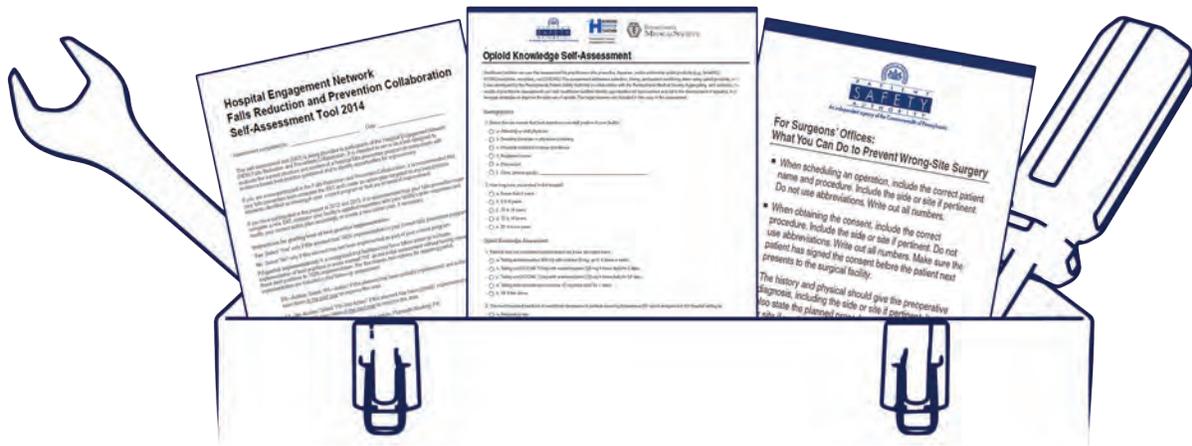
HAP PA-HEN Authority Projects
Results Pointing in the Right Direction

Baseline

Adverse Drug Events—Opioids

Falls

Wrong-Site Surgery

-10%

-30%

-50%

-70%

-29%

-58%

-23%

-62%

-23%

17.6% (preventable harm goal)

40% (project goal)

PERCENTAGE REDUCTION

HEN-wide

Immersion projects
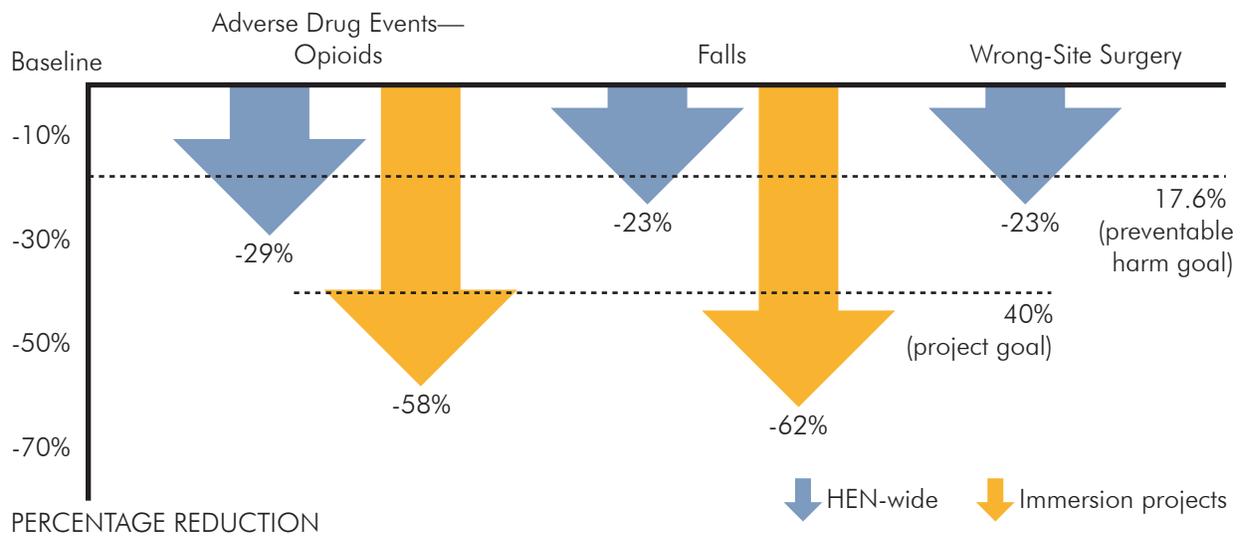
Overall HAP PA-HEN Results

37% reduction
Preventable Harm
(all cause)

26% reduction
Readmissions
(all cause)

$694 million
Healthcare Costs Avoided
(based on 136,319 harm events avoided)

Results reported December 1, 2014, are interim and subject to final verification by the Centers for Medicare and Medicaid Services.

The analyses upon which this document is based were in part funded and performed under contract number HHSM-500-2012-00022C, entitled "Hospital Engagement Contractor for Partnership for Patients Initiative."

MS15192

The immersion project hospitals counted the number of times those patients who were prescribed warfarin had an INR value >5, and for those patients prescribed insulin, the immersion project hospitals counted the number of times their blood glucose values dropped below 50 mg/dL, with a goal of reducing the number of times a patient may have been harmed from warfarin and/or insulin. Inpatients prescribed warfarin with an INR greater than 5 decreased by 57%. The rate of episodes of blood glucose results less than or equal to 50 mg/dL decreased by 40%.

The project provided participating hospitals educational webinars, regional meetings, use of the Patient Safety Knowledge Exchange (PassKey) collaborative website, one-on-one coaching calls, and consultative on-site visits and presentations. The HAP PA-HEN ADE project team collaborated with other HAP PA-HEN project teams, hospitals, and other HENs and professional organizations to help reduce

ADEs. Two HENs have indicated they will be using the opioid organization assessment developed by the Authority for hospitals outside Pennsylvania. In addition, the ADE project team presented the project activities to a Federal Interagency Workgroup that was established to look at ADEs related to opioids, anticoagulants, and insulin.

Ongoing spread of best practices and sustainability will be a continued focus, and the tools from this project are available to all hospitals on the Authority's website (http://patientsafetyauthority.org/EducationalTools/PatientSafetyTools/Pages/home.aspx). The focus of opioid, anticoagulant, and insulin safety remains extremely important related to issues of patient safety and quality of care. Although this project has concluded, the HAP PA-HEN will continue to contribute to the push toward national benchmark data by the production of evidence-based process measures that have the potential to have a high impact on the avoidance of opioid ADEs.

Falls Reduction and Prevention

Falls with injury are the most frequently reported hospital-acquired condition and are one of the most frequently reported Serious Events in Pennsylvania. Falls can have a serious impact on a person's ability to function, as well as their life expectancy. In 2011, Pennsylvania facilities reported 35,640 fall events through the Pennsylvania Patient Safety Reporting System (PA-PSRS). Of these fall events, 1,210 had severe enough harm to be classified as Serious Events, requiring significant additional healthcare. Falls with injury continue to represent a significant patient safety challenge for many hospitals. The goal of the falls reduction and prevention project was to decrease the number of falls with harm by 40% from the baseline.

The Authority partnered with HAP PA-HEN to reduce falls with harm. The HAP PA-HEN falls team collaborated with 62 hospitals in 2014 to reduce falls with harm in Pennsylvania. Hospitals in the project used standardized definitions of falls and falls with harm to ensure consistent project data. PA-PSRS was modified in 2012 to provide hospitals with an opportunity to capture standardized patient-days and patient encounter data. These modifications allowed for statewide and peer-group comparisons and for hospitals to have access to multiple reports for their outcome and process measures.

The falls project has offered the following resources to participants:

- Webinar-based educational offerings

- Coaching calls
- Hospital visits
  — Seventy-four percent of hospitals participated in this offering.
- A behavioral health workgroup
- Falls prevention tools
  — Self-assessment survey tool
  — Process measure audit tool
  — Postfall investigation tool and workbook
  — Action plan template
- Collaborative in-person regional meetings
- HEN Falls Team Leader workgroup
  — HAP PA-HEN sponsored this workgroup, which provided a forum for other HENs to network and share how they are managing falls reduction and prevention with their hospitals.

The in-person regional meetings provided an opportunity for hospitals to collaboratively share information about the following:

- Falls prevention
- Sustainability
- Leadership
- Team engagement

The team utilized the self-assessment tool and point prevalence audit tool developed in 2012 to monitor results of the project participants. The evidence-based self-assessment tool was completed by hospitals in the immersion project in July 2012, July 2013, and July 2014. There was 100% completion of the tool in 2012, 93% completion in 2013, and 84% completion in 2014. The self-assessment and point prevalence audit tool can be found on the Authority's website (http://patientsafetyauthority.org/EducationalTools/PatientSafetyTools/falls/Pages/home.aspx), and the results of the self-assessment tool can be found in two Advisory articles (December 2013: http://patientsafetyauthority.org/ADVISORIES/AdvisoryLibrary/2013/Dec;10(4)/Pages/117.aspx; June 2014: http://patientsafetyauthority.org/ADVISORIES/AdvisoryLibrary/2014/Jun;11(2)/Pages/69.aspx).

The outcome measure for this project was falls with harm per 1,000 patient-days at facility level. The 2014 project baseline was adjusted from 0.155 falls with harm per 1,000 patient-days in 2012 and 2013 to 0.123 falls with harm per 1,000 patient-days based on the current hospitals in the project. Baseline data was calculated using 2010 data. Outcomes for 2014 reflected a 62%

reduction in falls with harm per 1,000 patient-days for the immersion project and a 67% reduction in falls with harm per 1,000 patient-days for the HEN-wide hospitals. The average number of falls with harm per facility (HEN-wide) revealed a 23% reduction from the baseline. Sixty-two percent of hospitals that saw a reduction in falls with harm had, in the last 12 months of data, an average of 62% reduction from the baseline.

Ongoing spread of best practices and sustainability will be a continued focus, and the tools from this project are available to all hospitals on the Authority's website (http://patientsafetyauthority.org/EducationalTools/PatientSafetyTools/falls/Pages/home.aspx). The focus of falls prevention remains extremely important related to issues of patient safety and quality of care. The Authority team will offer assistance with falls prevention to hospitals through the Patient Safety Liaison Program and the online falls toolkit. Hospitals are encouraged to use the audits and other tools to ensure their falls program is fully executed as expected. The importance of the continual review of their hospital falls data was discussed as a component to help maintain sustainability.

Wrong-Site, Wrong-Person, and Wrong-Procedure/Surgery Prevention

Reports of wrong-site surgery (surgery performed on the wrong side, at the wrong site, or on the wrong patient or surgery for which the wrong procedure is attempted or completed) to the Authority have decreased in Pennsylvania by 41% since 2007. Even so, these highly preventable adverse events continue to be reported in Pennsylvania at a rate of nearly one event each week.

Of the wrong-site procedures reported in Pennsylvania between July 2004 and June 2013, wrong-site anesthesia blocks were the most common wrong-site procedures in operating suites, accounting for 21% of the reported events. The Authority partnered with HAP PA-HEN to collaborate with Pennsylvania facilities providing surgical services to strengthen and improve patient safety by preventing wrong-site anesthesia blocks through the implementation of standardized procedures and evidence-based best practices.

During 2012, the Authority developed and implemented a strategic and cohesive program that provided education, tools, technical assistance, resources, and interactive forums to facilitate participants' efforts to achieve an overall 20% improvement with the identified process and outcome measures. A shared collaborative website was

established to host all necessary assessment and monitoring documents, reference materials for educational sessions, and other resources. A similar approach was taken for facilities participating in the HAP PA-HEN wrong-site surgery project in 2014, which focused on the prevention of wrong-site anesthesia blocks.

In 2014, there were 13 hospitals and 1 ambulatory surgery center that participated in the project. Hospitals self-assessed and reassessed implementation of policies and procedures associated with preventing wrong-site anesthesia blocks (i.e., evidence-based best practices) and were asked to monitor compliance with identified measurement standards. Team leaders who successfully implemented prevention strategies within their organizations served as mentors and worked with the Authority to facilitate discussions about successes and barriers to implementation. The HAP PA-HEN wrong-site surgery project leaders and four hospitals participating in the project were featured during the September Partnership for Patients Provider Engagement Affinity Group Master Class, which was co-led by HAP and Texas Center for Quality and Patient Safety HEN directors.

As confirmed through workshop discussions and on-site observations by the Authority's wrong-site surgery team, participants are implementing evidence-based best practices and monitoring compliance to eliminate wrong-site events. In 28 months of data collection, there was a 23% improvement HEN-wide, and the results reflect two eight-month intervals of no reported events for the facilities participating in the project in 2014. Hospitals assessed implementation of policies and procedures associated with preventing wrong-site anesthesia blocks and were asked to monitor compliance with identified measurement standards. Areas of improvement in processes included the following:

- Verification and reconciliation of the schedule, consent, and history and physical by an anesthesiologist in the preoperative area increased by 20.7%.

- Operative site marking by the surgeon prior to the administration of regional or local anesthesia increased by 39.3%.

- Participation of the anesthesia provider in a formal time-out with a designated team before administering a regional or local anesthetic block to the patient increased by 9.7%.

Two regional workshops were conducted in 2014. The workshops provided an opportunity to review analyzed data from assessments, reassessments, and compliance monitoring with respect to the evidence-based practices. Participants and leaders shared successes, strategies, and common barriers through presentations and discussion. Presentation topics included the following:

- Results of a statewide survey and analysis of events reported through PA-PSRS supported that a separate block site mark by the anesthesia provider may be advantageous to preventing wrong-site anesthesia blocks.

- Evidence for use of an anesthesia checklist and the engagement of a trained nursing team in the anesthesia block process.

- Prevention strategies to reduce distractions in the operating room suite.

- innovative processes for preventing wrong-spinal-level procedures.

- Protocols to prevent wrong-site pain management procedures.

On-site perioperative observations were performed by Authority leaders and subject experts to identify opportunities for improved compliance with measures for assessing wrong-site surgery and wrong-site anesthesia blocks.

Ongoing spread of best practices and sustainability will be a continued focus, and the tools from this project are available to all hospitals on the Authority's website (http://patientsafetyauthority.org/EducationalTools/PatientSafety Tools/PWSS/Pages/home.aspx). The focus of preventing wrong-site events remains an extremely important issue related to patient safety and quality of care. The Authority team will offer assistance to hospitals for preventing wrong-site surgery through the Patient Safety Liaison Program and the online toolkit. Hospitals are encouraged to use the tools to evaluate their program.

AHRQ Safety Program for Long-Term Care: HAIs/CAUTI

The Authority has contracted with HRET on a 14-month collaboration, Agency for Healthcare Research and Quality (AHRQ) Safety Program for Long-Term Care: Healthcare-Associated Infections (HAIs)/CAUTI, to develop and implement an infection prevention and safety program to support long-term care facilities in adopting evidence-based infection prevention practices to reduce CAUTIs and improve safety culture. This collaborative provides

facilities with team and communication tools as well as data benchmarking and reports. The Authority has recruited 18 long-term care facilities in Pennsylvania to participate in the collaboration, which began with a kick-off meeting in August 2014. The facilities will be offered educational and expert resources throughout the project to assist them with reducing CAUTIs.

Collaboration

131 Facilities Participated in Authority Collaborations in 2014

Falls: **62**

Wrong-Site Surgery: **31**

Adverse Drug Events: **20**

Catheter-Associated Urinary Tract Infections: **18** (nursing homes)

$

2014 collaborative projects financially supplemented Authority assessment revenue by approximately **$956,000**

Goals Together Management Collaborate Project Sharing Team Communication Cooperation Methods Help Resources Leadership Tools Collaborate Education Teamwork

Collaborative Partnerships

Philadelphia Department of Public Health

The Philadelphia Department of Public Health will be facilitating a two-year Hemodialysis Infection Prevention Improvement Collaborative to improve infection control practices and reduce infections in outpatient hemodialysis centers. The Authority has partnered with the Philadelphia Department of Public Health to support the project with the expertise of one of our infection preventionists for coaching calls, conference calls, and webinars. The Authority has developed and will maintain a PassKey website for the collaborative. The Authority will complete an Advisory article at the end of the project to disseminate the results and collaborative methods.

Quality Insights Quality Innovation Network

The Authority has partnered with Quality Insights Quality Innovation Network–Quality Improvement Organization (QIN-QIO) to spread best practices for the prevention of HAIs, improve patient safety, reduce harm, and improve clinical care across the network. The network includes five states: Pennsylvania, Delaware, Louisiana, New Jersey, and West Virginia. The Authority has offered its website tools and resources. The Authority also presented a webinar, "Improving Patient Safety by Preventing HAIs," which can be found on the QIN-QIO website (http://www.qualityinsights-qin.org/Resources.aspx) or on the Authority's website (http://patientsafetyauthority.org/NewsAndInformation/HealthcareAssociatedInfections/Pages/home.aspx).

National Implementation of CUSP for CAUTI in Long-Term Care

The Authority partnered with HRET in 2014 to work on reducing CAUTIs in long-term care facilities. This national collaborative project will apply patient safety interventions to reduce CAUTIs as part of the Measurement and Evaluation Committee for the National Implementation of CUSP for CAUTI in long-term care facilities. The Authority will provide an infection prevention content expert to assist in the development of educational programs, questionnaires, process and outcome measures, data collection, and analytic processes, as well as to function as a national faculty coach. The Authority has participated in the national HRET CAUTI Long-Term Care Advisory Council to share best practices, lessons learned, and barriers to improve consistency. Participation in this program reinforces the long-term care changes to PA-PSRS CAUTI criteria, which were made in April 2014. Participation also provides the Authority the opportunity to influence national data collection and measurement and analysis.

Notes

1. Merriam-Webster dictionary. Collaborate [online]. [cited 2015 Jan 28]. http://www.merriam-webster.com/dictionary/collaborate

2. Hospital and Healthsystem Association of Pennsylvania. Pennsylvania Hospital Engagement Network (HAP PA-HEN) December 2014 Final Report. These results are interim and are subject to final verification by CMS as part of the Partnership for Patients formal evaluation process, which is currently being conducted.

Addendum F: Healthcare-Associated Infections

Introduction

Healthcare-associated infections (HAIs) can be devastating and even deadly. HAIs are associated with increased mortality and greater cost of care. According to the Centers for Disease Control and Prevention (CDC), approximately 1 out of every 20 patients in US hospitals will contract an HAI.[1] The most common types of HAIs are bloodstream infections, urinary tract infections (UTIs), surgical site infections, gastrointestinal illnesses such as *Clostridium difficile* or norovirus, lower respiratory tract infections such as pneumonia, and skin and soft-tissue infections.[1]

Since the inception of HAI reporting in 2009, the Authority's HAI prevention activities have advanced from the initial articles published in the *Pennsylvania Patient Safety Advisory* to offering webinars, conducting on-site facility visits, developing toolkits, and interfacing with local, state, and national partners focusing on HAI prevention.

To leverage the unique resources and strengths available from organizations dedicated to preventing HAIs, the Authority continues to partner with the Pennsylvania Department of Health (DOH), the Hospital and Healthsystem Association of Pennsylvania, the Association for Professionals in Infection Control and Epidemiology (APIC), CDC, the US Department of Health and Human Services, and other government agencies and professional associations across the continuum of healthcare delivery. The Authority addresses the prevention of HAIs by monitoring and analyzing infection reports from hospitals, long-term care facilities, and ambulatory surgical facilities to provide guidance and education in response to HAI trends in the various settings.

With the Authority's guidance and education, protecting patients and long-term care residents from infectious diseases has advanced, as illustrated by noteworthy reduction in the incidence of some HAIs in Pennsylvania healthcare facilities and evidenced in DOH and previous Authority annual reports.[2,3] This addendum summarizes the Authority's HAI activities, including the status of work initiated in 2014 and currently in progress, and presents HAI rate tables and interpretations for long-term care facilities.

The Authority has expanded its portfolio of activities to include innovative HAI prevention programs and provide resources that address new challenges. This expansion supports the Authority's endeavors to guide and educate healthcare facilities and to improve their methods to detect serious infection trends and develop new HAI prevention strategies.

Education and Outreach Programs

In 2014, Authority infection prevention analysts provided educational programs to more than 1,500 Pennsylvania healthcare workers in hospitals, long-term care facilities, ambulatory surgical facilities, and professional organizations across the commonwealth, as well as to various advocacy groups and healthcare partners in infection prevention and patient safety. Program participants reported that they learned new knowledge and planned to implement practice changes subsequent to the educational session. The following are a few survey responses received about the educational programs offered:

- "Reinforced and identified gaps in safe injection practices, leading to the development of comprehensive training for clinicians, physicians, and anesthesia."

- "Validation of the effect of oral hygiene on prevention of respiratory tract infections, leading to an oral hygiene audit and improvement program."

- "The importance of recognizing how your staff feel and their 'beliefs' related to hand hygiene."

- "I will implement a SurveyMonkey to determine what my staff truly believes (about hand hygiene)."

- "The decision-making map is helpful to assist me in assessing our current status." ("Decision-making map" available at http://patientsafetyauthority.org/EducationalTools/PatientSafetyTools/handhygiene/Pages/map.aspx

- "Developing different ways to get everyone involved with hand hygiene compliance."

On a following page, the "HAI Education and Outreach" infographic depicts how the Authority disseminates educational and training opportunities throughout the commonwealth and beyond. It also shows how the Authority integrates with other stakeholders to accomplish education, collaboration, and data analysis for the purpose of HAI reduction.

Long-Term Care Best-Practice Assessment Tool

Monitoring compliance with best practices to prevent HAIs is fundamental to achieving improvement targets. Designed in 2011, the Authority's Long-Term Care Best-Practice Assessment Tool helps facilities assess best-practice strategies for HAI prevention and compliance in seven categories: hand hygiene, environmental infection control, outbreak control, and prevention of urinary tract, respiratory, skin and soft-tissue, and gastrointestinal multidrug-resistant organism infections.[4] Educational programs provided to national organizations resulted in the tool's inclusion in the following prestigious publications:[5,6]

- APIC's 2013 *Infection Preventionist's Guide to Long-Term Care*

- The Joint Commission's 2014 online learning module and index of resources titled Applying High Reliability Principles to Infection Prevention and Control in Long Term Care

On a following page, the "Long-Term Care HAI Best-Practice Assessment Tool 2014" infographic depicts the relevance of the tool to users as evidenced by responses received from the 2014 annual survey. About 93% of survey respondents agreed or strongly agreed that the tool helped improve performance, education, and HAI prevention.

PA-PSRS Long-Term Care Reporting Program

On April 1, 2014, the Authority released system changes to the Pennsylvania Patient Safety Reporting System (PA-PSRS) for nursing home users. The revised system improves standardized reporting and aligns with the National Healthcare Safety Network criteria[7] and the 2012 revised McGeer criteria.[8] Using a new suite of analytic tools developed by the Authority for PA-PSRS, facilities are able to analyze

reported infection data down to the unit level. The Authority also introduced a learning management system (LMS) to provide training for PA-PSRS nursing home users. The LMS consists of interactive web-based modules available 24 hours a day, 7 days a week. See the following "PA-PSRS Long-Term Care HAI Reporting 2014" infographic for more information.

Rapid Ebola Preparedness Teams

In response to the threat of Ebola-related morbidity and mortality, Authority analysts, in conjunction with DOH, CDC, and APIC, participated in site assessments to evaluate proposed Ebola treatment centers in Pennsylvania. Two sets of visits to each site occurred: one with the state-led teams and one

with CDC. The initial visit focused on overall preparedness related to Ebola, but the assessments looked at all-hazard readiness as the overall goal that facilities should strive to achieve. The second visit with CDC in attendance showcased

HAI Education and Outreach

WORKING TOGETHER

Educate

Collaborate

PADONA
PA DOH
Joint Commission
APIC
Advocacy Groups
Public
The Authority
HAP/HEN
FSCI
HRET
KAIROS
CDC Rep Teams
CSTE

Analyze Data

FOR INFECTION PREVENTION
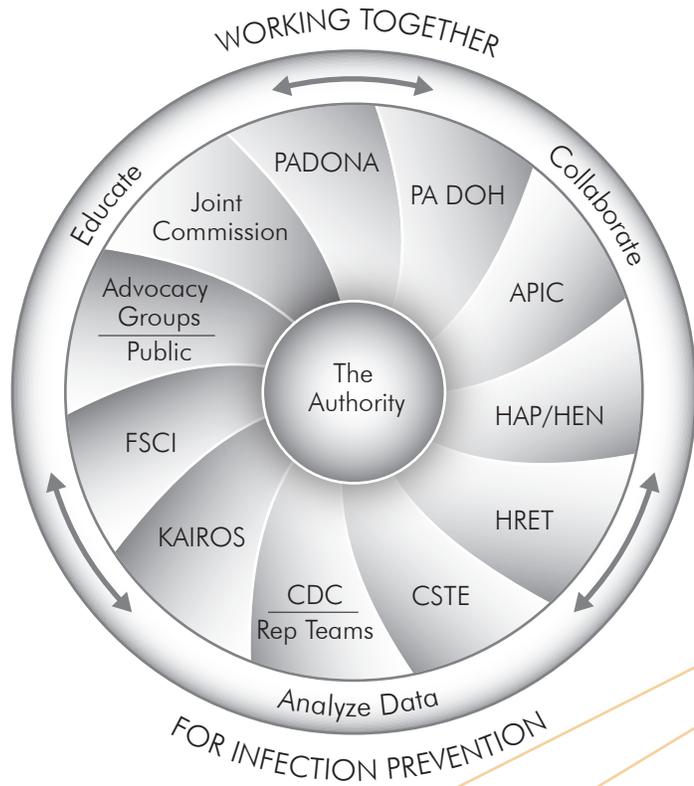
The Authority reached over 1,500 attendees representing various healthcare facilities, groups, and organizations.
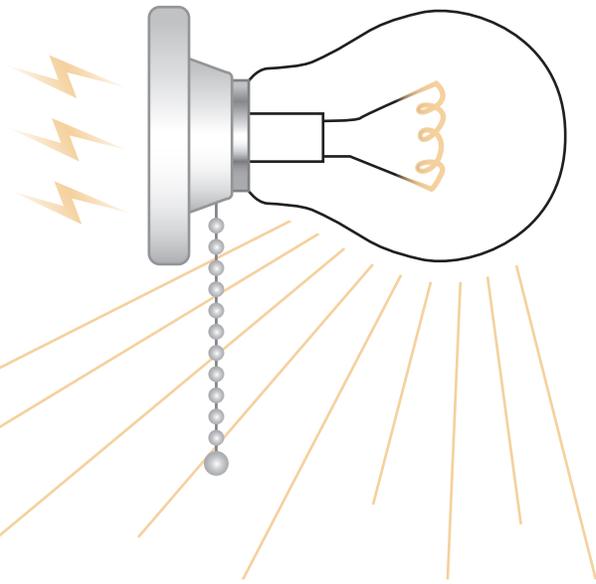
LONG-TERM CARE

▶ Safe injection strategies
▶ Bridging the gap between research and practice
▶ Infection reporting/ McGeer conversion
▶ Respiratory tract infections
▶ PA-PSRS analytics
▶ CAUTI definitions

AMBULATORY SURGERY

▶ Hand hygiene
▶ Infection control toolkit launch
▶ Injection safety
▶ Individual consults

ACUTE CARE

▶ Injection safety
▶ Hand hygiene
▶ Individual consults
▶ Surgical site infection prevention
▶ Ebola response preparedness

ADVOCACY GROUPS/PUBLIC

▶ MRSA screening/ colonization
▶ Consumer influenza prevention posters

MS15118
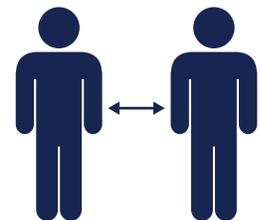
Long-Term Care HAI Best-Practice Assessment Tool 2014

Source: Pennsylvania Patient Safety Authority. *Nursing home user survey summary* [internal report]. Harrisburg (PA): Pennsylvania Patient Safety Authority; 2015 Jan.

PA-PSRS Long-Term Care HAI Reporting 2014
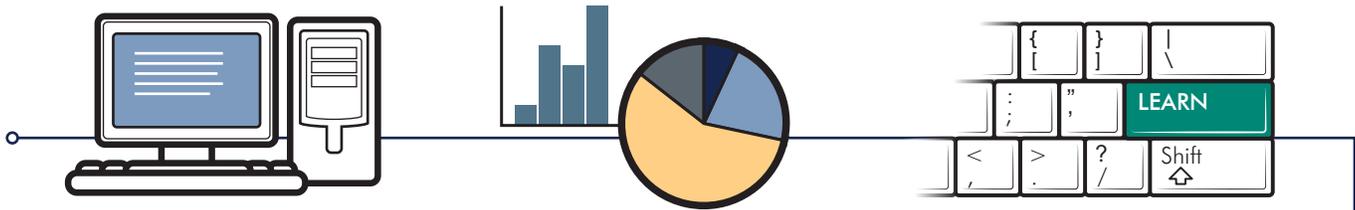
INTAKE

- Entire application updated to current standards
- Clinical decision support features
- Embedded definitions for key terms
- Designed with consultation from long-term care clinicians
- Imported data validation

ANALYTICS

- Infection awareness report (dashboard)
- Data refreshed daily
- State and peer group benchmarking
- Trackable metrics
- Drill down to a specific floor or care area
- User customization options

USER TRAINING

- Implemented learning management system (LMS) for tutorials
- >600 registered LMS users
- >1,700 courses completed
- Access to LMS 24/7
- Help desk
- Online user manual
- Interactive computer-based training
- Surveillance resources

USER FEEDBACK

Great · Respond · Appreciate · User-Friendly · Training · Report · No Difficulty · Clear · Training Modules · Easy · Infection · Data · Easy to Use · System · PA-PSRS · Very Easy · Good · Guidelines · Charts · Ease · Design · Concise · Easy to Navigate · Love

MS15120

the programs that Pennsylvania facilities operationalized in a very short time frame. CDC acted in a consultative role with the state-led team and the facility representatives.

The outcome of a successful joint visit was the facility's designation as a state Ebola treatment center. Designation meant that the assessed facility could theoretically man-age a patient from admission to discharge in a coordinated and safe manner. The Authority thanks the facilities that agreed to be assessed for designation and acknowledges the financial and operational commitment the facilities displayed in response to a potential infectious threat to Pennsylvania's residents. The CDC list of Ebola treatment centers is available at http://www.cdc.gov/vhf/ebola/healthcare-us/preparing/current-treatment-centers.html.

Long-Term Care HAI Data Analysis

On April 1, 2014, the Authority began collecting HAI reports from long-term care facilities through PA-PSRS using updated criteria that closely follows the revised McGeer criteria published in 2012.8 Data collected before April 1, 2014, is included in this addendum and is referred to as version 1 data. The data period of April 1, 2014, through December 31, 2014 is referred to as version 2 data.

Facilities in Pennsylvania submitted a total of 28,825 infection reports through PA-PSRS in 2014; a 6.9% decrease from the 30,958 submitted in 2013. The decrease in reporting may have resulted, in part, from the changes in criteria instituted in April 2014, when facilities modified their surveillance activities to capture reformed HAI-related data points.

Analysis Method

Of the 703 facilities actively reporting as of December 31, 2014, 636 (90.5%) met all validation criteria noted below. This is a 13% increase compared with the number of facilities noted in the 2013 annual report. The Authority excluded 67 facilities from analysis (a 53.5% decrease from 2013) if:

- Resident-days were not entered for every month of 2014.
  - — Thirty-eight facilities were excluded in 2014, compared with 117 in 2013, a 67.5% decrease.

- During one or more months, occupancy was above 100% or below 50%. Occupancy is calculated by dividing the number of resident-days during a month by the number of beds listed for each facility. The quotient is then divided by the number of days in that month.
  - — In the 2014 data, 29 facilities were excluded, compared with 26 in 2013, an 11.5% increase.

- Infections were reported without accompanying resident-days at the unit level.
  - — There were no facilities that were excluded in 2014 data.

  OR

- Catheter-associated urinary tract infections (CAUTIs) were reported without accompanying catheter-days.
  - — There were no facilities excluded for this infection type analysis in 2014 data.

The decrease in the number of nursing home excluded from further data analysis may be partially related to PA-PSRS enhancements, including built-in decision support and automated flags that provide a "stop-check" at the time of data entry, as well as data validation efforts conducted by DOH.

Note: In the tables for this addendum, rows indicating totals show the number of facilities reporting for the given type of infection with each unit type. This is not to be confused with the sum of the unit types for that infection. There may be overlap of unit types reporting at any given facility.

Version 1 Data (January 1, 2014, through March 31, 2014)

The rates that have been calculated for this time period are based on only three months of denominator data. Therefore, the rates as presented may appear higher in certain categories (e.g., influenza) due to facility census and seasonal variation. Year-to-year comparison of aggregate rates, as presented in previous annual reports, would not provide accurate actionable results because of the brevity of this three-month data set. An analysis of version 2 data is presented after the version 1 data.

Table 1. Urinary Tract Infections, Pooled Mean Rates, by Subcategory and Care Unit, Reported through PA-PSRS January through March 2014

UNIT NAME (n)	NO. OF INFECTIONS	RESIDENT-DAYS	CATHETER-DAYS	DEVICE UTILIZATION RATE*	POOLED INFECTION RATE (95% CI)[†,‡]
CAUTI (resident with indwelling urinary catheter)					
Dementia unit (7)	9	531,257	8,682	0.016	1.04 (0.36 - 1.71)
Mixed unit (45)	86	1,889,577	97,076	0.051	0.89 (0.70 - 1.07)
Nursing unit (47)	75	1,937,560	86,800	0.045	0.86 (0.67 - 1.06)
SN/STR unit (68)	128	2,181,697	116,873	0.054	1.10 (0.91 - 1.28)
Vent unit (2)	15	43,608	10,981	0.252	1.37 (0.67 - 2.06)
Total (154)	**313**	**6,583,699**	**320,412**	**0.049**	**0.98 (0.87 - 1.09)**
UTI (resident without indwelling urinary catheter)					
Dementia unit (24)	47	531,257	NA	NA	0.09 (0.06 - 0.11)
Mixed unit (56)	161	1,889,577	NA	NA	0.09 (0.07 - 0.10)
Nursing unit (53)	139	1,937,560	NA	NA	0.07 (0.06 - 0.08)
SN/STR unit (92)	215	2,181,697	NA	NA	0.10 (0.09 - 0.11)
Vent unit (2)	3	43,608	NA	NA	0.07 (0.00 - 0.15)
Total (191)	**565**	**6,583,699**	**NA**	**NA**	**0.09 (0.08 - 0.09)**

Note: CAUTI = catheter-associated urinary tract infection; UTI = urinary tract infection; SN/STR unit = skilled nursing/short-term rehabilitation unit; Vent unit = ventilator dependent unit; NA = not applicable

* Device utilization rate: number of urinary-catheter-days ÷ number of resident-days

† UTI rate calculation: number of UTI ÷ number of resident-days x 1,000

‡ CAUTI rate calculation: number of CAUTI ÷ number of catheter-days x 1,000

Table 2. Respiratory Tract Infections, Pooled Mean Rates, by Subcategory and Care Unit, Reported through PA-PSRS January through March 2014

UNIT NAME (n)	NO. OF INFECTIONS	RESIDENT-DAYS	POOLED INFECTION RATE (95% CI)*
Lower Respiratory Tract Infection (pneumonia/bronchitis/tracheobronchitis)			
Dementia unit (69)	187	531,257	0.35 (0.30 - 0.40)
Mixed unit (131)	773	1,889,577	0.41 (0.38 - 0.44)
Nursing unit (147)	721	1,937,560	0.37 (0.34 - 0.40)
SN/STR unit (190)	966	2,181,697	0.44 (0.41 - 0.47)
Vent unit (6)	30	43,608	0.69 (0.44 - 0.93)
Total (412)	**2,677**	**6,583,699**	**0.41 (0.39 - 0.42)**
Influenzalike Illness			
Dementia unit (6)	12	531,257	0.02 (0.01 - 0.04)
Mixed unit (26)	45	1,889,577	0.02 (0.02 - 0.03)
Nursing unit (18)	24	1,937,560	0.01 (0.01 - 0.02)
SN/STR unit (30)	57	2,181,697	0.03 (0.02 - 0.03)
Vent unit (1)	2	43,608	0.05 (0.00 - 0.11)
Total (72)	**140**	**6,583,699**	**0.02 (0.02 - 0.02)**
Total Respiratory Tract Infections			
Dementia unit (71)	199	531,257	0.37 (0.32 - 0.43)
Mixed unit (133)	818	1,889,577	0.43 (0.40 - 0.46)
Nursing unit (151)	745	1,937,560	0.38 (0.36 - 0.41)
SN/STR unit (199)	1,023	2,181,697	0.47 (0.44 - 0.50)
Vent unit (6)	32	43,608	0.73 (0.48 - 0.99)
Total (421)	**2,817**	**6,583,699**	**0.43 (0.41 - 0.44)**

Note: SN/STR unit = skilled nursing/short-term rehabilitation unit; Vent unit = ventilator dependent unit

* Rate calculation: number of infections ÷ number of resident-days x 1,000

Table 3. Skin and Soft-Tissue Infections, Pooled Mean Rates, by Subcategory and Care Unit, Reported through PA-PSRS January through March 2014

UNIT NAME (n)	NO. OF INFECTIONS	RESIDENT-DAYS	POOLED INFECTION RATE (95% CI)*
Vascular or Diabetic Ulcer (chronic/nonhealing)			
Dementia unit (2)	2	531,257	0.004 (0.000 - 0.009)
Mixed unit (17)	20	1,889,577	0.011 (0.006 - 0.015)
Nursing unit (9)	10	1,937,560	0.005 (0.002 - 0.008)
SN/STR unit (13)	15	2,181,697	0.007 (0.003 - 0.010)
Vent unit (0)	…	43,608	
Total (40)	**47**	**6,583,699**	**0.007 (0.005 - 0.009)**
Decubitus Ulcer (pressure-related)			
Dementia unit (3)	3	531,257	0.006 (0.000 - 0.012)
Mixed unit (20)	25	1,889,577	0.013 (0.008 - 0.018)
Nursing unit (8)	10	1,937,560	0.005 (0.002 - 0.008)
SN/STR unit (21)	24	2,181,697	0.011 (0.007 - 0.015)
Vent unit (2)	2	43,608	0.046 (0.000 - 0.109)
Total (53)	**64**	**6,583,699**	**0.010 (0.007 - 0.012)**
Burn-Associated			
Dementia unit (0)	…	531,257	
Mixed unit (0)	…	1,889,577	
Nursing unit (0)	…	1,937,560	
SN/STR unit (2)	2	2,181,697	0.001 (0.000 - 0.002)
Vent unit (0)	…	43,608	
Total (2)	**2**	**6,583,699**	**0.000 (0.000 - 0.001)**
Device-Associated			
Dementia unit (1)	1	531,257	0.002 (0.000 - 0.006)
Mixed unit (7)	8	1,889,577	0.004 (0.001 - 0.007)
Nursing unit (3)	3	1,937,560	0.002 (0.000 - 0.003)
SN/STR unit (9)	9	2,181,697	0.004 (0.001 - 0.007)
Vent unit (0)	…	43,608	
Total (20)	**21**	**6,583,699**	**0.003 (0.002 - 0.005)**
Cellulitis			
Dementia unit (34)	46	531,257	0.087 (0.062 - 0.112)
Mixed unit (83)	202	1,889,577	0.107 (0.092 - 0.122)
Nursing unit (77)	149	1,937,560	0.077 (0.065 - 0.089)
SN/STR unit (102)	206	2,181,697	0.094 (0.082 - 0.107)
Vent unit (2)	3	43,608	0.069 (0.000 - 0.147)
Total (245)	**606**	**6,583,699**	**0.092 (0.085 - 0.099)**
Other			
Dementia unit (24)	31	531,257	0.058 (0.038 - 0.079)
Mixed unit (78)	156	1,889,577	0.083 (0.070 - 0.096)
Nursing unit (61)	114	1,937,560	0.059 (0.048 - 0.070)
SN/STR unit (89)	163	2,181,697	0.075 (0.063 - 0.086)
Vent unit (6)	6	43,608	0.138 (0.027 - 0.248)
Total (218)	**470**	**6,583,699**	**0.071 (0.065 - 0.078)**
Total Skin and Soft-Tissue Infections			
Dementia unit (51)	83	531,257	0.156 (0.123 - 0.190)
Mixed unit (116)	411	1,889,577	0.218 (0.196 - 0.239)
Nursing unit (108)	286	1,937,560	0.148 (0.131 - 0.165)
SN/STR unit (159)	419	2,181,697	0.192 (0.174 - 0.210)
Vent unit (6)	11	43,608	0.252 (0.103 - 0.401)
Total (351)	**1,210**	**6,583,699**	**0.184 (0.173 - 0.194)**

Note: SN/STR unit = skilled nursing/short-term rehabilitation unit; Vent unit = ventilator dependent unit

* Rate calculation: number of infections ÷ number of resident-days x 1,000. Rates and CI shown to three decimals of significance because of small numbers.

Table 4. Gastrointestinal Infections, Pooled Mean Rates, by Subcategory and Care Unit, Reported through PA-PSRS January through March 2014

UNIT NAME (n)	NO. OF INFECTIONS	RESIDENT-DAYS	POOLED INFECTION RATE (95% CI)*
Gastrointestinal Infections Reported with Associated *Clostridium difficile*			
Dementia unit (14)	19	531,257	0.04 (0.02 - 0.05)
Mixed unit (85)	192	1,889,577	0.10 (0.09 - 0.12)
Nursing unit (67)	121	1,937,560	0.06 (0.05 - 0.07)
SN/STR unit (132)	244	2,181,697	0.11 (0.10 - 0.13)
Vent unit (5)	6	43,608	0.14 (0.03 - 0.25)
Total (271)	**582**	**6,583,699**	**0.09 (0.08 - 0.10)**
Gastrointestinal Infections Reported without Associated *C. difficile*			
Dementia unit (41)	237	531,257	0.45 (0.39 - 0.50)
Mixed unit (53)	357	1,889,577	0.19 (0.17 - 0.21)
Nursing unit (57)	543	1,937,560	0.28 (0.26 - 0.30)
SN/STR unit (93)	603	2,181,697	0.28 (0.25 - 0.30)
Vent unit (1)	1	43,608	0.02 (0.00 - 0.07)
Total (183)	**1,741**	**6,583,699**	**0.26 (0.25 - 0.28)**
Total Gastrointestinal Infections Reported			
Dementia unit (51)	256	531,257	0.48 (0.42 - 0.54)
Mixed unit (109)	549	1,889,577	0.29 (0.27 - 0.31)
Nursing unit (103)	664	1,937,560	0.34 (0.32 - 0.37)
SN/STR unit (183)	847	2,181,697	0.39 (0.36 - 0.41)
Vent unit (6)	7	43,608	0.16 (0.04 - 0.28)
Total (361)	**2,323**	**6,583,699**	**0.35 (0.34 - 0.37)**

Note: SN/STR unit = skilled nursing/short-term rehabilitation unit; Vent unit = ventilator dependent unit

* Rate calculation: number of infections ÷ number of resident-days x 1,000

Table 5. Other Infections, Pooled Mean Rates, by Subcategory and Care Unit, Reported through PA-PSRS January through March 2014

UNIT NAME (n)	NO. OF INFECTIONS	RESIDENT-DAYS	POOLED INFECTION RATE (95% CI)*
Intra-abdominal Infection (peritonitis/deep abscess)			
Dementia unit (0)	…	531,257	
Mixed unit (1)	1	1,889,577	0 (0 - 0)
Nursing unit (0)	…	1,937,560	
SN/STR unit (1)	1	2,181,697	0 (0 - 0)
Vent unit (0)	…	43,608	
Total (2)	**2**	**6,583,699**	**0 (0 - 0)**
Meningitis			
Dementia unit (0)	…	531,257	
Mixed unit (0)	…	1,889,577	
Nursing unit (1)	1	1,937,560	0 (0 - 0)
SN/STR unit (0)	…	2,181,697	
Vent unit (0)	…	43,608	
Total (1)	**1**	**6,583,699**	**0 (0 - 0)**
Viral Hepatitis			
Dementia unit (0)	…	531,257	
Mixed unit (0)	…	1,889,577	
Nursing unit (0)	…	1,937,560	
SN/STR unit (1)	1	2,181,697	0 (0 - 0)
Vent unit (0)	…	43,608	
Total (1)	**1**	**6,583,699**	**0 (0 - 0)**
Osteomyelitis			
Dementia unit (0)	…	531,257	
Mixed unit (4)	5	1,889,577	0 (0 - 0)
Nursing unit (3)	3	1,937,560	0 (0 - 0)
SN/STR unit (7)	9	2,181,697	0.00 (0.00 - 0.01)
Vent unit (0)	0	43,608	0 (0 - 0)
Total (14)	**17**	**6,583,699**	**0 (0 - 0)**
Primary Bloodstream Infection			
Dementia unit (0)	…	531,257	
Mixed unit (8)	9	1,889,577	0.00 (0.00 - 0.01)
Nursing unit (5)	6	1,937,560	0.00 (0.00 - 0.01)
SN/STR unit (20)	23	2,181,697	0.01 (0.01 - 0.01)
Vent unit (4)	5	43,608	0.11 (0.01 - 0.22)
Total (38)	**43**	**6,583,699**	**0.01 (0.00 - 0.01)**
Total Other Infections Reported			
Dementia unit (0)	…	531,257	
Mixed unit (13)	15	1,889,577	0.01 (0.00 - 0.01)
Nursing unit (9)	11	1,937,560	0.01 (0.00 - 0.01)
SN/STR unit (28)	36	2,181,697	0.02 (0.01 - 0.02)
Vent unit (4)	5	43,608	0.11 (0.01 - 0.22)
Total (53)	**67**	**6,583,699**	**0.01 (0.01 - 0.01)**

Note: SN/STR unit = skilled nursing/short-term rehabilitation unit; Vent unit = ventilator dependent unit

* Rate calculation: number of infections ÷ number of resident-days x 1,000

Version 2 Data (April 1, 2014, through December 31, 2014)

Version 2 data represents the last nine months of 2014. Because version 2 includes a greater duration of data, it is possible to comment on certain aspects of categorical performance; however, evaluating trends and performing detailed analyses is not possible due to lack of historical data. Future annual reports will provide year-to-year analyses and comparisons over time, similar to past annual reports.

Urinary Tract Infection

UTI has been a challenging infection to prevent in Pennsylvania. The aggregate UTI data (see Table 6) highlights that CAUTI and symptomatic UTI in particular could use more effective interventions. Outside of the ventilator and skilled nursing/short-term rehabilitation units, the other units represented may tend to house more mobile residents. Mobile residents tend to utilize leg bags; frequent routine opening and closing of the closed system (switching from leg bags to drainage bags and vice versa) may lead to contamination of the urinary tract and bladder by exogenous bacteria. Perhaps there are opportunities in CAUTI prevention for wider adoption of protocols for earlier removal and improved management of catheters and accessory equipment, such as leg bags. Accessory equipment may become a target for future infection prevention research to address, for example, the use, care, and maintenance of leg bags.

Symptomatic UTI seems to be more of an "equal opportunity infection" when comparing unit types (refer to Table 6). Interventions such as meticulous perineal care, frequent incontinence barrier replacement, and hydration promotion programs may warrant further investigation to prevent this type of infection in long-term care.

Asymptomatic bacteremic UTI (ABUTI) and device-related ABUTI are new HAI categories. Although the aggregate rates appear low for these infections, individual facilities are encouraged to look at their performance in these categories due to the severity of these infections. Individual facility performance analytics are available to individual facilities within the analytics section of PA-PSRS.

The Authority is actively engaged in UTI prevention activities in order to define and improve practice. Please refer to **Addendum E** for a detailed look at the Authority's current UTI prevention programs.

Respiratory Tract Infections

The frequent occurrence of episodes of pneumonia and lower respiratory tract infections has a large impact on the health of long-term care residents (see Table 7). Influenza and influenzalike illness round out the overall picture of preventable respiratory infections. Ventilator units seem to have a higher overall prevalence of respiratory infection. Perhaps lessons from acute care in terms of preventing ventilator-associated pneumonia by using care bundles could be applied in the long-term care setting (for example, meticulous and frequent oral hygiene). When full-year data sets become available utilizing version 2 criteria, opportunities for intervention and prevention may become more apparent. Meanwhile facilities are encouraged to review their individual performance in the PA-PSRS analytic suite available within the system.

Gastrointestinal Infections

Clostridium difficile infections and norovirus make up the majority of reported gastrointestinal infections (see Table 8). Despite the time-limited data set, this trend is consistent historically within the PA-PSRS database. Units that house residents who are less mobile and who require more hands-on care (with increased potential for translocation of spores from one patient to another) seem to have a higher prevalence of *C. difficile* infections. The same situation (translocation of virus) may be applicable to norovirus. Basic prevention measures may aid in decreasing the prevalence of these infections. Measures such as enhancing hand hygiene, isolation procedures, and environmental cleaning in these environments may be helpful.

Skin and Soft-Tissue Infections

Despite the time-limited data set, the skin and soft-tissue infection trend is consistent with historical PA-PSRS data (see Table 9). Units that house residents who are less mobile, and who may be more susceptible to pressure or friction injuries, may have higher rates of skin and soft-tissue infections.

The integumentary system is the body's first line of protection from infection. Whenever that system is compromised, there is a potential for cellulitis, soft-tissue, and wound infections. Prevention of skin and soft-tissue infections may be accomplished through meticulous repositioning and ambulation schedules, as well as the application of various skin protectants, especially when the resident is incontinent. Consultation with wound and ostomy professionals may be advisable to track prevalence and develop facility-specific, and resident-specific, care plans that minimize risk for skin breakdown. Authority resources for prevention of skin and soft-tissue infections are available on the Authority website at http://patientsafetyauthority. org/ADVISORIES/AdvisoryLibrary/2011/mar8(1)/Pages/ 34.aspx.

Sarcoptes scabiei var. *hominis* parasite (scabies) and conjunctivitis are new categories added to version 2 of

PA-PSRS and are included in this report. In general, enhanced hand hygiene for both residents and staff, isolation procedures, and environmental cleaning may be of benefit. The risk of conjunctivitis may be addressed by optimizing staff hand hygiene compliance, especially when administering ophthalmic solutions.

Based on the number of facilities reporting (n) and the raw number of infections reported, the data on scabies seems to indicate that at least one case of scabies has likely been experienced by almost every facility that reported an event in 2014. The cases reported by the ventilator units may be a result of breaches in contact precautions or screening due to the nature of that constellation of residents. Perhaps more emphasis needs to be placed on assessment and screening for scabies on admission, and periodically assessment and screening thereafter. Additional emphasis on prevention and control activities, such as contact precautions and surveillance, may be warranted. Episodes of scabies may lead to other skin and soft-tissue infections, like cellulitis, because deposition of parasitic feces in burrows causes irritation; subsequent scratching by residents can result in breaks in skin integrity and secondary infection.

Device-Related Bloodstream Infections

Device-related bloodstream infection is another new event category within version 2 of PA-PSRS (see Table 10). The data is divided into three mutually exclusive sections: central-line-associated bloodstream infection related to dialysis (CLABSI Dialysis), CLABSI related to a temporary intravascular catheter (CLABSI Temporary Line), and CLABSI related to a permanent intravascular catheter (CLABSI Permanent Line). The Authority recognizes that the majority of central-line care may not take place within the nursing home. However, the data suggests that the nursing home may have a role to play in the overall management of the central-line infection prevention. For example, facilities may have opportunities to take a more active role in discussing line care with contractors and others (e.g., dialysis

and chemotherapy staff) external to the nursing home who deliver care through the resident's central line.

The CLABSI data presented herein provides some of the first prevalence information in the nation for all central-line types managed outside of acute care. As data for this criteria matures, the Authority hopes to identify opportunities for CLABSI prevention that addresses the variety of caregivers, and caregiving sites and processes, that may be involved in the care of long-term care residents (for example, collaboration among facilities, renal networks, DOH, and others). Currently, the Authority is collaborating with the Philadelphia Department of Public Health and the Quality Insights Renal Network 4 to reduce dialysis-related bacteremia in long-term care facilities.

Table 6. Urinary Tract Infections (UTIs), Pooled Mean Rates, by Subcategory and Care Unit, Reported through PA-PSRS April through December 2014

UNIT NAME (n)	NO. OF INFECTIONS	RESIDENT-DAYS	CATHETER-DAYS	DEVICE UTILIZATION RATE*	POOLED INFECTION RATE (95% CI)[†,‡]
CAUTI (catheter in place with localizing urinary signs or symptoms, or catheter removed within the last two calendar days)					
Dementia unit (25)	42	1,651,221	26,947	0.016	1.56 (1.09 - 2.03)
Mixed unit (106)	261	5,717,379	291,281	0.051	0.90 (0.79 - 1.00)
Nursing unit (85)	176	5,946,230	277,293	0.047	0.63 (0.54 - 0.73)
SN/STR unit (146)	348	6,539,500	375,221	0.057	0.93 (0.83 - 1.02)
Vent unit (7)	29	129,257	31,037	0.240	0.93 (0.59 - 1.27)
Total (318)	**856**	**19,983,587**	**1,001,779**	**0.050**	**0.85 (0.80 - 0.91)**
Device-Related ABUTI (catheter in place without localizing urinary signs or symptoms)					
Dementia unit (1)	1	1,651,221	NA	NA	0 (0 - 0)
Mixed unit (8)	11	5,717,379	NA	NA	0 (0 - 0)
Nursing unit (4)	6	5,946,230	NA	NA	0 (0 - 0)
SN/STR unit (8)	12	6,539,500	NA	NA	0 (0 - 0)
Vent unit (4)	7	129,257	NA	NA	0.05 (0.01 - 0.09)
Total (25)	**37**	**19,983,587**	**NA**	**NA**	**0 (0 - 0)**
Symptomatic UTI (catheter not present or catheter removed for more than two calendar days within the facility with localizing urinary signs or symptoms)					
Dementia unit (69)	196	1,651,221	NA	NA	0.12 (0.10 - 0.14)
Mixed unit (137)	808	5,717,379	NA	NA	0.14 (0.13 - 0.15)
Nursing unit (149)	973	5,946,230	NA	NA	0.16 (0.15 - 0.17)
SN/STR unit (210)	1,181	6,539,500	NA	NA	0.18 (0.17 - 0.19)
Vent unit (5)	18	129,257	NA	NA	0.14 (0.07 - 0.20)
Total (424)	**3,176**	**19,983,587**	**NA**	**NA**	**0.16 (0.15 - 0.16)**
ABUTI (catheter not present or catheter removed for more than two calendar days within the facility without localizing urinary signs or symptoms [may have fever])					
Dementia unit (5)	6	1,651,221	NA	NA	0.00 (0.00 - 0.01)
Mixed unit (18)	39	5,717,379	NA	NA	0.01 (0.00 - 0.01)
Nursing unit (18)	47	5,946,230	NA	NA	0.01 (0.01 - 0.01)
SN/STR unit (25)	38	6,539,500	NA	NA	0.01 (0.00 - 0.01)
Vent unit (1)	1	129,257	NA	NA	0.01 (0.00 - 0.02)
Total (67)	**131**	**19,983,587**	**NA**	**NA**	**0.01 (0.01 - 0.01)**

Note: CAUTI = catheter-associated UTI; ABUTI = asymptomatic bacteremic UTI; SN/STR unit = skilled nursing/short-term rehabilitation unit; Vent unit = ventilator dependent unit; NA = not applicable

* Device utilization rate: number of urinary-catheter-days ÷ number of resident-days

† Basic UTI rate calculation: number of UTI ÷ number of resident-days x 1,000

‡ CAUTI rate calculation: number of CAUTI ÷ number of catheter-days x 1,000

Table 7. Respiratory Tract Infections, Pooled Mean Rates, by Subcategory and Care Unit, Reported through PA-PSRS April through December 2014

UNIT NAME (n)	NO. OF INFECTIONS	RESIDENT-DAYS	POOLED INFECTION RATE (95% CI)*
Influenza (the resident has tested positive for influenza)			
Dementia unit (26)	69	1,651,221	0.04 (0.03 - 0.05)
Mixed unit (54)	202	5,717,379	0.04 (0.03 - 0.04)
Nursing unit (52)	197	5,946,230	0.03 (0.03 - 0.04)
SN/STR unit (73)	196	6,539,500	0.03 (0.03 - 0.03)
Vent unit (1)	1	129,257	0.01 (0.00 - 0.02)
Total (164)	**665**	**19,983,587**	**0.03 (0.03 - 0.04)**
Influenzalike Illness (the resident has fever and influenza is suspected; testing for influenza is negative or not performed, and there may be a dry cough but no other overt signs)			
Dementia unit (3)	10	1,651,221	0.01 (0.00 - 0.01)
Mixed unit (30)	60	5,717,379	0.01 (0.01 - 0.01)
Nursing unit (16)	36	5,946,230	0.01 (0.00 - 0.01)
SN/STR unit (14)	24	6,539,500	0.00 (0.00 - 0.01)
Vent unit (0)	…	129,257	
Total (57)	**130**	**19,983,587**	**0.01 (0.01 - 0.01)**
Lower Respiratory Tract Infection (chest radiograph is negative for pneumonia or a new infiltrate and the resident is without fever, or no chest radiograph performed)			
Dementia unit (62)	177	1,651,221	0.11 (0.09 - 0.12)
Mixed unit (128)	636	5,717,379	0.11 (0.10 - 0.12)
Nursing unit (139)	739	5,946,230	0.12 (0.12 - 0.13)
SN/STR unit (179)	908	6,539,500	0.14 (0.13 - 0.15)
Vent unit (6)	16	129,257	0.12 (0.06 - 0.18)
Total (397)	**2,476**	**19,983,587**	**0.12 (0.12 - 0.13)**
Pneumonia (the resident's chest radiograph is positive for pneumonia or a new infiltrate)			
Dementia unit (87)	226	1,651,221	0.14 (0.12 - 0.15)
Mixed unit (167)	991	5,717,379	0.17 (0.16 - 0.18)
Nursing unit (181)	945	5,946,230	0.16 (0.15 - 0.17)
SN/STR unit (244)	1,166	6,539,500	0.18 (0.17 - 0.19)
Vent unit (10)	45	129,257	0.35 (0.25 - 0.45)
Total (500)	**3,373**	**19,983,587**	**0.17 (0.16 - 0.17)**
Total Respiratory Tract Infections			
Dementia unit (107)	482	1,651,221	0.29 (0.27 - 0.32)
Mixed unit (184)	1,889	5,717,379	0.33 (0.32 - 0.35)
Nursing unit (199)	1,917	5,946,230	0.32 (0.31 - 0.34)
SN/STR unit (280)	2,294	6,539,500	0.35 (0.34 - 0.37)
Vent unit (12)	62	129,257	0.48 (0.36 - 0.60)
Total (541)	**6,644**	**19,983,587**	**0.33 (0.32 - 0.34)**

Note: SN/STR unit = skilled nursing/short-term rehabilitation unit; Vent unit = ventilator dependent unit

* Rate calculation: number of infections ÷ number of resident-days x 1,000

Table 8. Gastrointestinal Infections, Pooled Mean Rates, by Subcategory and Care Unit, Reported through PA-PSRS April through December 2014

UNIT NAME (n)	NO. OF INFECTIONS	RESIDENT-DAYS	POOLED INFECTION RATE (95% CI)*
***Clostridium difficile* (the resident has diarrhea and a stool sample is positive for *C. difficile* toxin A or B; a toxin-producing *C. difficile* organism is identified from stool culture or by molecular testing; or pseudomembranous colitis is identified through endoscopic examination, surgery, or biopsy)**			
Dementia unit (26)	46	1,651,221	0.03 (0.02 - 0.04)
Mixed unit (136)	455	5,717,379	0.08 (0.07 - 0.09)
Nursing unit (134)	387	5,946,230	0.07 (0.06 - 0.07)
SN/STR unit (218)	758	6,539,500	0.12 (0.11 - 0.12)
Vent unit (8)	32	129,257	0.25 (0.16 - 0.33)
Total (420)	**1,678**	**19,983,587**	**0.08 (0.08 - 0.09)**
Norovirus (the resident has diarrhea and/or vomiting and laboratory results are positive for norovirus)			
Dementia unit (0)	…	1,651,221	
Mixed unit (3)	7	5,717,379	0 (0 - 0)
Nursing unit (4)	5	5,946,230	0 (0 - 0)
SN/STR unit (3)	4	6,539,500	0 (0 - 0)
Vent unit (0)	…	129,257	
Total (10)	**16**	**19,983,587**	**0 (0 - 0)**
Bacterial Gastroenteritis (the resident has diarrhea and/or vomiting and laboratory results are positive for a bacteriologic pathogen)			
Dementia unit (3)	3	1,651,221	0 (0 - 0)
Mixed unit (3)	3	5,717,379	0 (0 - 0)
Nursing unit (5)	5	5,946,230	0 (0 - 0)
SN/STR unit (7)	7	6,539,500	0 (0 - 0)
Vent unit (0)	…	129,257	
Total (17)	**18**	**19,983,587**	**0 (0 - 0)**
Kaplan (norovirus is suspected based on Kaplan criteria; the resident has diarrhea and/or vomiting and *C. difficile* results are negative)			
Dementia unit (12)	73	1,651,221	0.04 (0.03 - 0.05)
Mixed unit (12)	261	5,717,379	0.05 (0.04 - 0.05)
Nursing unit (15)	122	5,946,230	0.02 (0.02 - 0.02)
SN/STR unit (20)	162	6,539,500	0.02 (0.02 - 0.03)
Vent unit (44)	0	129,257	0 (0 - 0)
Total (17)	**618**	**19,983,587**	**0.03 (0.03 - 0.03)**
Total Gastrointestinal Infections Reported			
Dementia unit (37)	122	1,651,221	0.07 (0.06 - 0.09)
Mixed unit (139)	726	5,717,379	0.13 (0.12 - 0.14)
Nursing unit (137)	519	5,946,230	0.09 (0.08 - 0.09)
SN/STR unit (227)	931	6,539,500	0.14 (0.13 - 0.15)
Vent unit (8)	32	129,257	0.25 (0.16 - 0.33)
Total (434)	**2,330**	**19,983,587**	**0.12 (0.12 - 0.13)**

Note: SN/STR unit = skilled nursing/short-term rehabilitation unit; Vent unit = ventilator dependent unit

* Rate calculation: number of infections ÷ number of resident-days x 1,000

Pennsylvania Patient Safety Authority

Table 9. Skin and Soft-Tissue Infections, Pooled Mean Rates, by Subcategory and Care Unit, Reported through PA-PSRS April through December 2014

UNIT NAME (n)	NO. OF INFECTIONS	RESIDENT-DAYS	POOLED INFECTION RATE (95% CI)*
Cellulitis, Soft-Tissue, or Wound Infection			
Dementia unit (90)	244	1,651,221	0.15 (0.13 - 0.17)
Mixed unit (163)	1,187	5,717,379	0.21 (0.20 - 0.22)
Nursing unit (178)	1,000	5,946,230	0.17 (0.16 - 0.18)
SN/STR unit (243)	1,417	6,539,500	0.22 (0.21 - 0.23)
Vent unit (8)	31	129,257	0.24 (0.16 - 0.32)
Total (481)	**3,879**	**19,983,587**	**0.19 (0.19 - 0.20)**
Conjunctivitis			
Dementia unit (72)	241	1,651,221	0.15 (0.13 - 0.16)
Mixed unit (131)	664	5,717,379	0.12 (0.11 - 0.12)
Nursing unit (156)	831	5,946,230	0.14 (0.13 - 0.15)
SN/STR unit (170)	691	6,539,500	0.11 (0.10 - 0.11)
Vent unit (9)	35	129,257	0.27 (0.18 - 0.36)
Total (402)	**2,462**	**19,983,587**	**0.12 (0.12 - 0.13)**
Scabies			
Dementia unit (9)	42	1,651,221	0.03 (0.02 - 0.03)
Mixed unit (23)	49	5,717,379	0.01 (0.01 - 0.01)
Nursing unit (20)	35	5,946,230	0.01 (0.00 - 0.01)
SN/STR unit (22)	90	6,539,500	0.01 (0.01 - 0.02)
Vent unit (2)	4	129,257	0.03 (0.00 - 0.06)
Total (71)	**220**	**19,983,587**	**0.01 (0.01 - 0.01)**
Total Skin and Soft-Tissue Infections			
Dementia unit (114)	527	1,651,221	0.32 (0.29 - 0.35)
Mixed unit (183)	1,900	5,717,379	0.33 (0.32 - 0.35)
Nursing unit (196)	1,866	5,946,230	0.31 (0.30 - 0.33)
SN/STR unit (267)	2,198	6,539,500	0.34 (0.32 - 0.35)
Vent unit (10)	70	129,257	0.54 (0.41 - 0.67)
Total (528)	**6,561**	**19,983,587**	**0.33 (0.32 - 0.34)**

Note: SN/STR unit = skilled nursing/short-term rehabilitation unit; Vent unit = ventilator dependent unit

* Rate calculation: number of infections ÷ number of resident-days x 1,000

Table 10. Device-Related Bloodstream Infections, Pooled Mean Rates, by Subcategory and Care Unit, Reported through PA-PSRS April through December 2014

UNIT NAME (n)	NO. OF INFECTIONS	RESIDENT-DAYS	DEVICE-DAYS	DEVICE UTILIZATION RATE*	POOLED INFECTION RATE (95% CI)†
CLABSI Dialysis (resident has a vascular catheter used for dialysis access)					
Dementia unit (0)	…	1,651,221	4,765	0.00	
Mixed unit (10)	11	5,717,379	102,001	0.02	0.11 (0.04 - 0.17)
Nursing unit (4)	8	5,946,230	82,515	0.01	0.10 (0.03 - 0.16)
SN/STR unit (5)	6	6,539,500	154,618	0.02	0.04 (0.01 - 0.07)
Vent unit (0)	…	129,257	11,303	0.09	
Total (18)	**25**	**19,983,587**	**355,202**	**0.02**	**0.07 (0.04 - 0.10)**
CLABSI Temporary Line (resident has a central line [temporary])					
Dementia unit (0)	…	1,651,221	4,765	0.00	
Mixed unit (10)	12	5,717,379	102,001	0.02	0.12 (0.05 - 0.18)
Nursing unit (5)	5	5,946,230	82,515	0.01	0.06 (0.01 - 0.11)
SN/STR unit (9)	11	6,539,500	154,618	0.02	0.07 (0.03 - 0.11)
Vent unit (2)	2	129,257	11,303	0.09	0.18 (0.00 - 0.42)
Total (24)	**30**	**19,983,587**	**355,202**	**0.02**	**0.08 (0.05 - 0.11)**
CLABSI Permanent Line (resident has an implanted line [port or tunneled line, not used for dialysis])					
Dementia unit (0)	…	1,651,221	4,765	0.00	
Mixed unit (2)	4	5,717,379	102,001	0.02	0.04 (0.00 - 0.08)
Nursing unit (1)	1	5,946,230	82,515	0.01	0.01 (0.00 - 0.04)
SN/STR unit (3)	3	6,539,500	154,618	0.02	0.02 (0.00 - 0.04)
Vent unit (0)	…	129,257	11,303	0.09	
Total (6)	**8**	**19,983,587**	**355,202**	**0.02**	**0.02 (0.01 - 0.04)**
Total Device-Related Bloodstream Infections					
Dementia unit (0)	…	1,651,221	4,765	0.00	
Mixed unit (21)	27	5,717,379	102,001	0.02	0.26 (0.16 - 0.36)
Nursing unit (10)	14	5,946,230	82,515	0.01	0.17 (0.08 - 0.26)
SN/STR unit (17)	20	6,539,500	154,618	0.02	0.13 (0.07 - 0.19)
Vent unit (2)	2	129,257	11,303	0.09	0.18 (0.00 - 0.42)
Total (51)	**63**	**19,983,587**	**355,202**	**0.02**	**0.18 (0.13 - 0.22)**

Note: CLABSI = central-line-associated bloodstream infection; SN/STR unit = skilled nursing/short-term rehabilitation unit; Vent unit = ventilator dependent unit

* Device utilization rate: number of urinary-catheter-days ÷ number of resident-days

† Rate calculation: number of infections ÷ number of device-days x 1,000

Notes

1. Centers for Disease Control and Prevention (CDC). Healthcare-associated infections (HAIs) [website]. Atlanta (GA): CDC. http://www.cdc.gov/HAI/surveillance/index.html

2. Pennsylvania Department of Health. Healthcare-associated infections in Pennsylvania: 2012 Report [online]. [cited 2015 Apr 10]. http://www.portal.state.pa.us/portal/server.pt/document/1417904/pennsylvaniahaireport2012_2014-05-19_pdf

3. Pennsylvania Patient Safety Authority. Annual reports [online]. [cited 2015 Apr 10]. http://patientsafetyauthority.org/PatientSafetyAuthority/Pages/AnnualReports.aspx

4. Pennsylvania Patient Safety Authority. Long-term care best-practice assessment tool [online]. 2012 [cited 2015 Apr 10]. http://patientsafetyauthority.org/EducationalTools/PatientSafetyTools/nh_practices/Pages/assessment.aspx

5. Association for Professionals in Infection Control and Epidemiology. *Infection preventionist's guide to long-term care*. Washington (DC): Association for Professionals in Infection Control and Epidemiology; 2013.

6. Joint Commission. Applying high reliability principles to infection prevention and control in long term care [online]. 2014 [cited 2015 Apr 10]. http://www.jointcommission.org/HRipcLTC.aspx

7. Centers for Disease Control and Prevention. Nation Healthcare Safety Network: tracking infections in long-term care [online]. [cited 2015 Apr 10]. http://www.cdc.gov/nhsn/LTC/index.html

8. Stone ND, Ashraf MS, Calder J, et al. Surveillance definitions of infections in long-term care facilities: revisiting the McGeer criteria. *Infect Control Hosp Epidemol* 2012 Oct;33(10):965-77.

Addendum G:
Healthcare Providers Committed to Patient Safety Recognized

Michael C. Doering, MBA
Executive Director
Pennsylvania Patient Safety Authority

Introduction

The Pennsylvania Patient Safety Authority held its annual I Am Patient Safety poster recognition contest during the last several months to recognize individuals and groups within Pennsylvania's healthcare facilities who have demonstrated a personal commitment to patient safety. The recognition poster contest is held each year, with posters delivered to facilities in time for Patient Safety Awareness Week, March 8 to 14, 2015. The contest helps patient safety officers promote progress being made within their facilities to improve patient safety. As one of the judges for the competition, I am impressed by the number of patient safety improvements individuals and groups are making throughout Pennsylvania. This year, we had three times as many nominations as last year, so judging them was a bit more difficult, but even more enlightening.

I want to thank everyone who participated in the contest. Keep an eye out for that person or group you think should be recognized for their patient safety efforts next year, and nominate those individuals or groups for the next poster recognition contest beginning in May. I appreciate the time taken to tell us what your colleagues are doing to improve patient safety in Pennsylvania.

Several Authority board members and management staff comprised the judging panel. The panel judged submissions upon the following criteria: the person or group (1) had a discernible impact on patient safety for one or many patients, (2) demonstrated a personal commitment to patient safety, and (3) demonstrated that a strong patient safety culture is present in the facility. Bonus points were awarded for submissions that demonstrated initiative taken by an individual.

Winners received their photos and patient safety efforts highlighted on posters that can be displayed within their facilities. They also received a certificate and an I Am Patient Safety recognition pin from the Authority. Winners were invited to attend the March 2015 Patient Safety Authority Board of Directors meeting for lunch and to meet the Authority board members and staff.

I Am Patient Safety: 2015 Winners

The individuals and groups recognized for the I Am Patient Safety poster contest and their achievements are as follows (in alphabetical order by name of facility):

Lorena Romero-Prato, Admissions Office Secretary
Lisa Sarnowski, RN, CEN
Jodi Celender, Monitor Tech, Nursing Assistant II
Allegheny Health Network, West Penn Hospital

A patient was trying to call her doctor but accidentally reached a West Penn Hospital voice mailbox. She left her phone number but not her name or address, stating she was in pain and thought she was having a heart attack. Lorena Romero-Prato heard the distress in the patient's voice and tried to call her back, but there was no answer. Lorena dialed 911 to get emergency medical services to respond. The call center, however, was unable to help without a name or address. Lorena then called the West Penn Hospital Emergency Department (ED) to ask for help. She reached Lisa Sarnowski, RN, who knew there was a way to look up the phone number of a person without the name, but she wasn't sure how. Lisa called Jodi Celender, a nursing assistant and monitoring technician in the ED. Lisa and Jodi were able to find the caller through a reverse phone number search. Once they identified her, they contacted 911 and emergency medical services were dispatched. The ambulance reached the patient and brought her to the ED for further evaluation.

David Ezdon, PharmD, Clinical Pharmacist
Einstein Medical Center Montgomery

As a clinical pharmacist, David has focused on improving patient care by building a culture of patient safety. He has worked with the hospital's falls committee and natural sleep initiative team to reduce patient falls due to certain medications. He was also instrumental in improving patient safety in the neonatal intensive care unit by demonstrating how staff can use electronic ordering plans efficiently, rebuilding the unit's pump libraries to maximize safety software, and educating staff pharmacists on properly compounding medications. David has also led the effort to establish an antibiotic stewardship program to minimize the use of antibiotics and reduce Clostridium difficile (C. diff) rates. He also developed electronic order pathways to help prescribers avoid harmful drug interactions when ordering new oral anticoagulants. David's efforts to improve gaps in Einstein's communication systems have encouraged all who work with him to seek his expertise and recommendations.

Tom Miller, MLT, ASCP, Medical Laboratory Technician
Einstein Medical Center Montgomery

As a medical laboratory technician at Einstein Medical Center Montgomery, Tom discovered why blood draws resulted at the bedside of premature infants often show different results for glucose levels than specimens that were resulted in the lab. He spent many hours investigating the issue when neonatal intensive care unit (NICU) staff noticed that the blood results for infants were markedly different for glucose when resulted at the bedside, than when resulted in the laboratory. Tom found that since an infant's red blood cells are more active metabolically, they consume more glucose compared to the same red blood cells in adults. This difference means that an infant's glucose level will be higher when resulted at the bedside as compared to when resulted in a laboratory. Because of Tom's persistence, infants in the NICU are safer and are spared from unnecessary blood draws.

Nora Ramirez, Environmental Services Worker
Einstein Medical Center Montgomery

As a member of the environmental services team, Nora shows her dedication to patient safety over and over again in the way she cleans each patient's room. Always compliant with isolation precaution requirements, her cleaning process is so thorough that every surface in the patient's room is wiped and disinfected every time. Nora understands the importance of her role in killing multidrug-resistant organisms (MDROs) to prevent healthcare-associated infections (HAIs) at Einstein Medical Center Montgomery. Her surfaces pass Einstein Medical Center's infection prevention monitoring program 100 percent of the time. Nora's cleaning methods are a model for our infection prevention control team.

Emily Coon, RN, BSN, Emergency Department
Fulton County Medical Center

As a nurse in the emergency department (ED), Emily works to improve the delivery of care to her patients. Part of this effort includes using the electronic medical record system to ensure her patient's medications are updated regularly with outside pharmacy information. The medication reconciliation process can be time consuming, but Emily recognized the value in obtaining a patient's medication list and comparing it to external pharmacy records. She recently cared for a patient in the ED who had a strange set of symptoms, given the patient's age and medical

history. While performing medication reconciliation, Emily noticed the patient recently had a prescription filled for a class of drug which was not consistent with her medical history. She questioned the patient thoroughly, which took a significant amount of time. After reviewing the medications over the phone with the patient's family, it was found that the patient received a prescription that was not intended for her. Emily's persistence in this matter helped identify the cause and subsequent treatment of this patient's symptoms.

Elizabeth Martin, RT(R)(VI), RCES
Lancaster General Health

As a radiologic technologist, Beth volunteered to serve as the electrophysiology and pacing department's radiation safety officer. Her goals were to reduce patient radiation exposure and increase the safety of fellow staff members and physicians. Beth worked closely with the x-ray equipment vendor, staff and physicians to identify action steps to reduce radiation exposure for all. The team identified several key strategies, including, but not limited to: partnering with the x-ray equipment vendor to establish the lowest standard equipment settings that still provided accurate images; providing education and training opportunities for staff; developing a radiation time-out to alert the physician when 30 minutes of fluoroscopy time was reached; using Gafchromic film to measure radiation exposure; and developing a database to track patients' exposure information. A post-implementation study shows a 44 percent decrease in radiation exposure to patients from calendar year 2011 to 2012. Beth continues to educate physicians and staff about the dangers of radiation exposure and the importance of compliance with the guidelines established through this project.

Kathleen Cochrane, RN, Neonatal Intensive Care Unit
Lehigh Valley Hospital

While checking medication stock in Lehigh Valley Hospital's neonatal intensive care unit (NICU), Kathleen Cochrane noticed a difference. The vaccine was not the usual type of hepatitis B vaccine that was normally stocked. Kathleen called the pharmacist to question it. The pharmacist came to the NICU to check the vaccine and determined that it was not the correct medication to be administered to babies. Kathleen's attention to detail may have prevented a serious patient safety event.

Gloria Mazzie, RN, Behavioral Health Unit
Lehigh Valley Hospital

After the hospital purchased paper bags with handles to store patient clothing, Gloria discovered that a patient

in the hospital's behavioral health unit had tied together the bag handles to use as a belt. It was determined that this belt was strong enough for a patient to cause harm to himself or another patient. Gloria's quick response to this concern initiated a search to find a bag that would be safer for patients to use in the behavioral health unit. Her dedication to patient safety may have prevented a serious patient safety event.

Christine Reesey, RN, Float Pool Center for Critical Care
Lehigh Valley Hospital

While reviewing a chest x-ray, Christine noticed that the patient's partial denture plate had slipped out of place and was lodged in his throat. She noted this before it was seen by the radiologist. Christine notified the medical team and the plate was removed. Ten days later, while caring for another patient, she noticed the physician had placed an order for insulin that was much higher than what the patient had been receiving. Christine contacted the physician to question the order and obtained an order for a decreased dose. Her continual attention to detail may have prevented two potentially serious patient safety events.

Jolene Barbazzeni, RN, Stroke Coordinator
Penn Highlands Healthcare (DuBois)

Jolene leads the "Good Catch" committee, which recognizes Incidents or near-miss events that could have caused harm to patients but did not actually occur. She has also personally had many "good catches" that prevented patient harm. Most recently, Jolene's effort was chosen as the "Good Catch of the Month" when she prevented a potential wrong-site surgery. A patient needed surgery on the right side of his neck to prevent a stroke. Jolene noticed the wrong side was documented in his record. She immediately notified the patient's caregivers, and the patient received the proper surgery.

Tammy Angeletti, MS, RRT-NPS, RN, CPFT, AE-C
Clinical and ECMO Specialist, Department of
Respiratory Care
Penn State Hershey Children's Hospital

While providing care for a child with a tracheostomy tube, Tammy recognized a variable connection issue between the oxygen delivery device and the tracheostomy tube. She worked with a manufacturer to develop a device that would provide a standard connection, eliminating any variation to the oxygen set-up.

Marybeth Lahey, RN, BSN, Nurse Manager of the Well Mother and Baby Unit
Susan Meyers, MSN, RNC, CPNP-PC
Pennsylvania Hospital

In early 2012, Marybeth and Susan were made aware of significant safety concerns related to infant falls at the Pennsylvania Hospital. Infant falls were reviewed from March 2012 to March 2013. During this time, 10 infant falls occurred, translating to a rate of 21.5 infant falls per 10,000 births. Marybeth and Susan did an exhaustive literature search on infant falls and found little information published. As educators for Pennsylvania Hospital, Marybeth and Susan developed interventions within the facility that included: training all food service and environmental services staff about infant falls prevention and how to intervene when moms are noticed in a sleepy state; educating all nurses and physicians about the need for increased vigilance; recruiting physicians as champions to prevent infant falls; giving moms two hours of quiet time in the afternoon so they could sleep; revising a safety contract to inform parents about the risks involved in caring for an infant while fatigued; developing a Good Catch log to capture opportunities for further education; and developing a falls debriefing process. As a result of these implemented interventions, Pennsylvania Hospital experienced an 88 percent reduction in infant falls.

Karen Barbieri, RN, Progressive Care Unit/Telemetry
Cindy Valerio, RN, Progressive Care Unit/Telemetry
Phoenixville Hospital

Cindy noticed that a patient with heart failure had been discharged without his prescriptions after finding them on the discharge desk. Cindy voiced her concerns to her unit coordinator, Karen Barbieri, who agreed the patient was at risk for heart failure complications if he didn't have his prescriptions. Karen called the patient and found he was not able to determine what medications he had at home. The patient had gained two pounds in a short period of time, which is a complication of heart failure. Karen recognized this patient was in danger at home and called medical home care services to help the patient. She also called the primary care physician to get the patient his needed prescriptions. During a daily safety call, this event was discussed and all staff used it as a learning opportunity.

Lisa Connolly, RN, Medical Surgical Unit
Phoenixville Hospital

As a medical--surgical nurse, Lisa was caring for a patient following joint replacement surgery. Upon reviewing her patient's electronic medical record, she noticed the surgeon had ordered two specific blood thinner medications for him to take after surgery—one was the blood thinner he had taken at home before surgery and the second was another medication. Lisa immediately questioned why two of the same medications were ordered for her patient and held both doses until further review. The attending physician was notified, and new medication orders were obtained. It was discovered that both the surgeon and pharmacist received a clinical alert within the electronic medical record, but both ignored the alert. As a result of Lisa's questioning and subsequent follow-up to verify and validate the medications, the patient did not receive duplicate medications. The lessons learned from this near-miss event were shared at unit-based and leadership safety huddles.

Conclusion

Thank you, again, to all who participated in the I Am Patient Safety poster recognition contest, and join me in congratulating the individuals recognized for their efforts to improve patient safety in Pennsylvania's healthcare facilities. Your commitment to patient safety does not go unnoticed.

I AM PATIENT SAFETY

(From left) Lorena Romero-Prato, Admissions Secretary, School of Nursing
Lisa Sarnowski, RN, Emergency Department
Jodi Celender, Nursing Assistant and Monitor Technician, Emergency Department

WEST PENN HOSPITAL, ALLEGHENY HEALTH NETWORK

Recognized for their dedication to patient safety by the Pennsylvania Patient Safety Authority

Lorena Romero-Prato, Lisa Sarnowski and Jodi Celender are committed to patient safety at West Penn Hospital.

A patient was trying to call her doctor but accidentally reached a West Penn Hospital voice mailbox. She left her phone number but not her name or address, stating she was in pain and thought she was having a heart attack. Lorena Romero-Prato, an admissions secretary at West Penn Hospital's School of Nursing, heard the distress in the patient's voice and tried to call her back, but there was no answer. Lorena dialed 911 to get emergency medical services to respond. The call center, however, was unable to help without a name or address. Lorena then called the West Penn Hospital Emergency Department (ED) to ask for their help.

She reached Lisa Sarnowski, RN, who knew there was a way to look up the phone number of a person without their name, but she wasn't sure how. Lisa called Jodi Celender, a nursing assistant and monitoring technician in the ED. Lisa and Jodi were able to find the caller through a reverse phone number search. Once they identified her, they contacted 911 and emergency medical services were dispatched. The ambulance reached the patient and brought her to the ED for further evaluation.

Join the Pennsylvania Patient Safety Authority in congratulating Lorena Romero-Prato, Lisa Sarnowski and Jodi Celender for making patient safety a priority at West Penn Hospital.

Winners of the "I Am Patient Safety" poster contest for National Patient Safety Awareness Week 2015
©2015 Pennsylvania Patient Safety Authority

I AM PATIENT SAFETY

David Ezdon, PharmD, Clinical Pharmacist

EINSTEIN MEDICAL CENTER MONTGOMERY

Recognized for his dedication to patient safety by the Pennsylvania Patient Safety Authority

David Ezdon is committed to patient safety. As a clinical pharmacist at Einstein Medical Center Montgomery, he has focused on improving patient care by building a culture of patient safety. David has worked with the hospital's falls committee and natural sleep initiative team to reduce patient falls due to certain medications. He was also instrumental in improving patient safety in the neonatal intensive care unit by demonstrating how staff can use electronic ordering plans efficiently, rebuilding the unit's pump libraries to maximize safety software and educating staff pharmacists on properly compounding medications. David has also led the effort to establish an antibiotic stewardship program to minimize the use of antibiotics and reduce *Clostridium difficile* (C. diff) rates. He also developed electronic order pathways to help prescribers avoid harmful drug interactions when ordering new oral anticoagulants. David's efforts to improve gaps in Einstein's communication systems have encouraged all who work with him to seek his expertise and recommendations.

Join the Pennsylvania Patient Safety Authority in congratulating David Ezdon for making patient safety at Einstein Medical Center Montgomery a priority.

I AM PATIENT SAFETY

Tom Miller, MLT, ASCP, Medical Laboratory Technician

EINSTEIN MEDICAL CENTER MONTGOMERY

Recognized for his dedication to patient safety by the Pennsylvania Patient Safety Authority

Tom Miller is committed to patient safety. As a medical laboratory technician at Einstein Medical Center Montgomery, he discovered why blood draws resulted at the bedside of premature infants often show different results for glucose levels than specimens that were resulted in the lab. Tom spent many hours investigating the issue when neonatal intensive care unit (NICU) staff noticed that the blood results for infants were markedly different for glucose when resulted at the bedside, than when resulted in the laboratory. He found that since an infant's red blood cells are more active metabolically, they consume more glucose compared to the same red blood cells in adults. This difference means that an infant's glucose level will be higher when resulted at the bedside as compared to when resulted in a laboratory. Because of Tom's persistence, infants in the NICU are safer and are spared from unnecessary blood draws.

Join the Pennsylvania Patient Safety Authority in congratulating Tom Miller for making patient safety at Einstein Medical Center Montgomery a priority.

I AM PATIENT SAFETY

Nora Ramirez, Environmental Services Worker

EINSTEIN MEDICAL CENTER MONTGOMERY

Recognized for her dedication to patient safety by the Pennsylvania Patient Safety Authority

Nora Ramirez is committed to patient safety. As a member of the environmental services team at Einstein Medical Center Montgomery, she shows her dedication to patient safety over and over again in the way she cleans each patient's room. Always compliant with isolation precaution requirements, Nora's cleaning process is so thorough that every surface in the patient's room is wiped and disinfected every time. She understands the importance of her role in killing multidrug-resistant organisms (MDROs) to prevent healthcare-associated infections (HAIs) at Einstein Medical Center. Nora's surfaces pass Einstein Medical Center's infection prevention monitoring program 100 percent of the time. Her cleaning methods are a model for our environmental services team.

Join the Pennsylvania Patient Safety Authority in congratulating Nora Ramirez for making patient safety at Einstein Medical Center Montgomery a priority.

I AM PATIENT SAFETY

Emily Coon, RN, BSN, Emergency Department

FULTON COUNTY MEDICAL CENTER

Recognized for her dedication to patient safety by the Pennsylvania Patient Safety Authority

Emily Coon is committed to patient safety at Fulton County Medical Center. As a nurse in the emergency department (ED), Emily works to improve the delivery of care to her patients. Part of this effort includes using the electronic medical record system to ensure her patient's medications are updated regularly with outside pharmacy information. The medication reconciliation process can be time consuming, but Emily recognized the value in obtaining a patient's medication list and comparing it to external pharmacy records.

Emily recently cared for a patient in the ED who had a strange set of symptoms, given the patient's age and medical history. While performing medication reconciliation, she noticed the patient recently had a prescription filled for a class of drug which was not consistent with her medical history. Emily questioned the patient thoroughly, which took a significant amount of time. After reviewing the medications over the phone with the patient's family, it was found that the patient received a prescription that was not intended for her. Emily's persistence in this matter helped identify the cause and subsequent treatment of this patient's symptoms.

Join the Pennsylvania Patient Safety Authority in congratulating Emily Coon for making patient safety at Fulton County Medical Center a priority.

Winner of the "I Am Patient Safety" poster contest for National Patient Safety Awareness Week 2015
©2015 Pennsylvania Patient Safety Authority

I AM PATIENT SAFETY

Elizabeth Martin, RT (R) (VI), RCES

LANCASTER GENERAL HEALTH

Recognized for her dedication to patient safety by the Pennsylvania Patient Safety Authority

Elizabeth Martin is committed to patient safety at Lancaster General Health. As a radiologic technologist, she volunteered to serve as the electrophysiology and pacing department's radiation safety officer. Her goals were to reduce patient exposure and increase the safety of fellow staff members and physicians.

Beth worked closely with the x-ray equipment vendor, staff and physicians to identify action steps to reduce radiation exposure for all. The team identified several key strategies including, but not limited to: partnering with the x-ray equipment vendor to establish the lowest standard equipment settings that still provided accurate images; providing education and training opportunities for staff; developing a radiation time-out to alert the physician when 30 minutes of fluoroscopy time was reached; using Gafchromic film to measure radiation exposure; and developing a database to track patients' exposure information. A post-implementation study shows a 44 percent decrease in radiation exposure to patients from calendar year 2011 to 2012.

Beth continues to educate physicians and staff about the dangers of radiation exposure and the importance of compliance with the guidelines established through this project.

Join the Pennsylvania Patient Safety Authority in congratulating Elizabeth Martin for making patient safety at Lancaster General Health a priority.

Winner of the "I Am Patient Safety" poster contest for National Patient Safety Awareness Week 2015
©2015 Pennsylvania Patient Safety Authority

I AM PATIENT SAFETY

Kathleen Cochrane, RN, Neonatal Intensive Care Unit

LEHIGH VALLEY HOSPITAL

Recognized for her dedication to patient safety by the Pennsylvania Patient Safety Authority

Kathleen Cochrane is committed to patient safety at Lehigh Valley Hospital. While checking medication stock in the hospital's neonatal intensive care unit (NICU), she noticed a difference. The vaccine was not the usual type of hepatitis B vaccine that was normally stocked. Kathleen called the pharmacist to question it. The pharmacist came to the NICU to check the vaccine and determined that it was not the correct vaccine to be administered to babies. Kathleen's attention to detail may have prevented a serious patient safety event.

Join the Pennsylvania Patient Safety Authority in congratulating Kathleen Cochrane for making patient safety at Lehigh Valley Hospital a priority.

Winner of the "I Am Patient Safety" poster contest for National Patient Safety Awareness Week 2015
©2015 Pennsylvania Patient Safety Authority

I AM PATIENT SAFETY

Gloria Mazzie, RN, Behavioral Health Unit

LEHIGH VALLEY HOSPITAL

Recognized for her dedication to patient safety by the Pennsylvania Patient Safety Authority

Gloria Mazzie is committed to patient safety at Lehigh Valley Hospital's behavioral health unit. After the hospital purchased paper bags with handles to store patient clothing, Gloria discovered that a patient had tied together bag handles to use as a belt. It was determined that this belt was strong enough for a patient to cause harm to himself or another patient. Gloria's quick response to this concern initiated a search to find a bag that would be safer for patients to use in the behavioral health unit. Her dedication to patient safety may have prevented a serious patient safety event.

Join the Pennsylvania Patient Safety Authority in congratulating Gloria Mazzie for making patient safety at Lehigh Valley Hospital's behavioral health unit a priority.

Winner of the "I Am Patient Safety" poster contest for National Patient Safety Awareness Week 2015
©2015 Pennsylvania Patient Safety Authority

I AM PATIENT SAFETY

Christine Reesey, RN, Float Pool Center for Critical Care

LEHIGH VALLEY HOSPITAL

Recognized for her dedication to patient safety by the Pennsylvania Patient Safety Authority

Christine Reesey is committed to patient safety at Lehigh Valley Hospital. While reviewing a chest x-ray, Christine noticed that the patient's partial plate had slipped out of place and was lodged in his throat. She noted this before it was seen by the radiologist. Christine notified the medical team and the plate was removed. Ten days later, while caring for another patient, she noticed the physician had placed an order for insulin that was much higher than what the patient had been receiving. Christine contacted the physician to question the order and obtained an order for a decreased dose. Her continual attention to detail may have prevented two potentially serious patient safety events.

Join the Pennsylvania Patient Safety Authority in congratulating Christine Reesey for making patient safety at Lehigh Valley Hospital a priority.

Winner of the "I Am Patient Safety" poster contest for National Patient Safety Awareness Week 2015
©2015 Pennsylvania Patient Safety Authority

I AM PATIENT SAFETY

Jolene Barbazzeni, RN, Stroke Coordinator

PENN HIGHLANDS HEALTHCARE

Recognized for her dedication to patient safety by the Pennsylvania Patient Safety Authority

Jolene Barbazzeni is committed to patient safety at Penn Highlands DuBois. Jolene leads the "Good Catch" committee, which recognizes Incidents or near-miss events that could have caused harm to patients but did not actually occur. She has had many "good catches" that have prevented harm to a patient.

Most recently, Jolene's effort was chosen as the "Good Catch of the Month" when she prevented a potential wrong-site surgery. A patient needed surgery on the right side of his neck to prevent a stroke. Jolene noticed the wrong side was documented in his record. She immediately notified the patient's caregivers, and the patient received the proper surgery.

Join the Pennsylvania Patient Safety Authority in congratulating Jolene Barbazzeni for making patient safety at Penn Highlands DuBois a priority.

Winner of the "I Am Patient Safety" poster contest for National Patient Safety Awareness Week 2015
©2015 Pennsylvania Patient Safety Authority

I AM PATIENT SAFETY

PENN STATE HERSHEY CHILDREN'S HOSPITAL

Recognized for her dedication to patient safety by the Pennsylvania Patient Safety Authority

Tammy Angeletti is committed to patient safety in her role as a Respiratory Therapy Clinical Specialist at Penn State Hershey Children's Hospital. While providing care for a child with a tracheostomy tube, Tammy recognized a variable connection issue between the oxygen delivery device and the tracheostomy tube. She worked with a manufacturer to develop a device that would provide a standard connection, eliminating any variation to the oxygen set-up.

Join the Pennsylvania Patient Safety Authority in congratulating Tammy Angeletti for making patient safety a priority in her job at Penn State Hershey Children's Hospital.

Winner of the "I Am Patient Safety" poster contest for National Patient Safety Awareness Week 2015
©2015 Pennsylvania Patient Safety Authority

I AM PATIENT SAFETY

(From left) Marybeth Lahey, MSN, RN NE-BC, Nurse Manager of the Well Mother and Baby Unit
Susan Meyers, MSN, RNC, CPNP-PC

PENNSYLVANIA HOSPITAL

Recognized for their dedication to patient safety by the Pennsylvania Patient Safety Authority

Marybeth Lahey and Susan Meyers are committed to patient safety at the Pennsylvania Hospital. In early 2012, Marybeth and Susan were made aware of significant safety concerns related to infant falls at the hospital. Infant falls were reviewed from March 2012 to March 2013. During this time, 10 infant falls occurred, translating to a rate of 21.5 infant falls per 10,000 births. Marybeth and Susan did an exhaustive literature search on infant falls and found little information published.

As educators for Pennsylvania Hospital, Marybeth and Susan developed interventions within the facility that included: training all food service and environmental services staff about infant falls prevention and how to intervene when moms are noticed in a sleepy state; educating all nurses and physicians about the need for increased vigilance; recruiting physicians as champions against infant falls; giving moms two hours of quiet time in the afternoon so they could sleep; revising a safety contract to engage parents about the risks involved in caring for an infant while fatigued; developing a Good Catch log to capture opportunities for further education; and developing a fall debriefing process.

As a result of these implemented interventions, Pennsylvania Hospital experienced an 88 percent reduction in infant falls.

Join the Pennsylvania Patient Safety Authority in congratulating Marybeth Lahey and Susan Meyers for making patient safety at Pennsylvania Hospital a priority.

Winners of the "I Am Patient Safety" poster contest for National Patient Safety Awareness Week 2015
©2015 Pennsylvania Patient Safety Authority

I AM PATIENT SAFETY

(From left) Karen Barbieri, RN, Progressive Care Unit/Telemetry
Cindy Valerio, RN, Progressive Care Unit/Telemetry

PHOENIXVILLE HOSPITAL

Recognized for their dedication to patient safety by the Pennsylvania Patient Safety Authority

Cindy Valerio and Karen Barbieri are committed to patient safety at Phoenixville Hospital.

Cindy noticed that a patient with heart failure had been discharged without his prescriptions after finding them on the discharge desk. Cindy voiced her concerns to her unit coordinator, Karen Barbieri, who agreed the patient was at risk for heart failure complications if he didn't have his prescriptions.

Karen called the patient and found he was not able to determine what medications he had at home. The patient had gained two pounds in a short period of time, which is a complication of heart failure. Karen recognized this patient was in danger at home and called medical home care services to help the patient. She also called the primary care physician to get the patient his needed prescriptions.

During a daily safety call this event was discussed and all staff used it as a learning opportunity.

Join the Pennsylvania Patient Safety Authority in congratulating Cindy Valerio and Karen Barbieri for making patient safety at Phoenixville Hospital a priority.

Winners of the "I Am Patient Safety" poster contest for National Patient Safety Awareness Week 2015
©2015 Pennsylvania Patient Safety Authority

I AM PATIENT SAFETY

Lisa Connolly, RN, Medical-Surgical Unit

PHOENIXVILLE HOSPITAL

Recognized for her dedication to patient safety by the Pennsylvania Patient Safety Authority

Lisa Connolly is committed to patient safety at Phoenixville Hospital. As a medical-surgical nurse, Lisa was caring for a patient following joint replacement surgery. Upon reviewing her patient's electronic medical record, she noticed the surgeon had ordered two specific blood thinner medications for him to take after surgery — one was the blood thinner he had taken at home before surgery and the second was another medication.

Lisa immediately questioned why two of the same medications were ordered for her patient and held both doses upon further review. The attending physician was notified, and new medication orders were obtained. It was discovered that the surgeon and pharmacist received a clinical alert within the electronic medical record, but both ignored the alert. As a result of Lisa's questioning and subsequent follow-up to verify and validate the medications, the patient did not receive two of the same blood thinner drug. The lessons learned from this near-miss event were shared at unit-based and leadership safety huddles.

Join the Pennsylvania Patient Safety Authority in congratulating Lisa Connolly for making patient safety at Phoenixville Hospital a priority.

Winner of the "I Am Patient Safety" poster contest for National Patient Safety Awareness Week 2015
©2015 Pennsylvania Patient Safety Authority

PATIENT
SAFETY
AUTHORITY

An independent agency of the Commonwealth of Pennsylvania

Phone | (717) 346-0469
Fax | (717) 346-1090
E-mail | patientsafetyauthority@pa.gov
Website | www.patientsafetyauthority.org

Address
333 Market Street
Lobby Level
Harrisburg, PA 17120