Promoting Patient Safety Through Data Collection, Analysis and Guidance

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Patient Safety Authority Background

IOM Reports, Public Influences

- Escalating Medical Malpractice Insurance Premiums
- Alleged Physician Exodus/Threatened Closure of Clinical Services
- Institute of Medicine Reports

  - "To Err is Human-Building a Safer Health System"(1999)

  - "Crossing the Quality Chasm" (2001)
- $44,000 - $98,000 preventable deaths
- $29 billion per year in additional costs

Act 13 (March 2002)

- 11-member Board appointed by the Governor and General Assembly
- Independent Agency
- Non-regulatory
- Dedicated Funding Stream
- Contract with outside entity to collect, analyze and evaluate reports of Serious Events and Incidents and identify trends
- Advise and issue recommendations for changes and improvements in healthcare practices (Advisories)
- Issue Annual Report

PA - Reporting Components

Who Reports	Types of Events	Other Considerations
Hospitals	**Near-Misses** ("Incidents")	**Mandatory**
Ambulatory Surgical Facilities	**Adverse Events** ("Serious Events")	**No Individual Identifying Data**
Birthing Centers	**Infrastructure Failures**	**Confidentiality Provisions**
Certain Abortion Facilities		**Non-discoverable**
		Whistleblower Protections
		Facility assessment
		Written Patient Notification
		Anonymous Reports

Serious Event

An event, occurrence, or current situation involving the clinical care of a patient at 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

Incident

An event, occurrence, or current 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

Infrastructure Failure

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

Healthcare Facilities

Incidents

Serious Events

Infrastructure Failures

COMMONWEALTH OF PENNSYLVANIA

PATIENT SAFETY AUTHORITY

DEPARTMENT OF HEALTH

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Patient Safety Authority Contract Partners

ECRI
A NONPROFIT AGENCY

ISMP
Institute for Safe Medication Practices

EDS

PA-PSRS: Clinical Analysis

Incoming Reports

Triage

Patient Safety Review Meeting

Analytics

Program Outputs

PSA Annual Report

Public Advisories and Recommendations

Contact with Individual Facilities

PA-PSRS

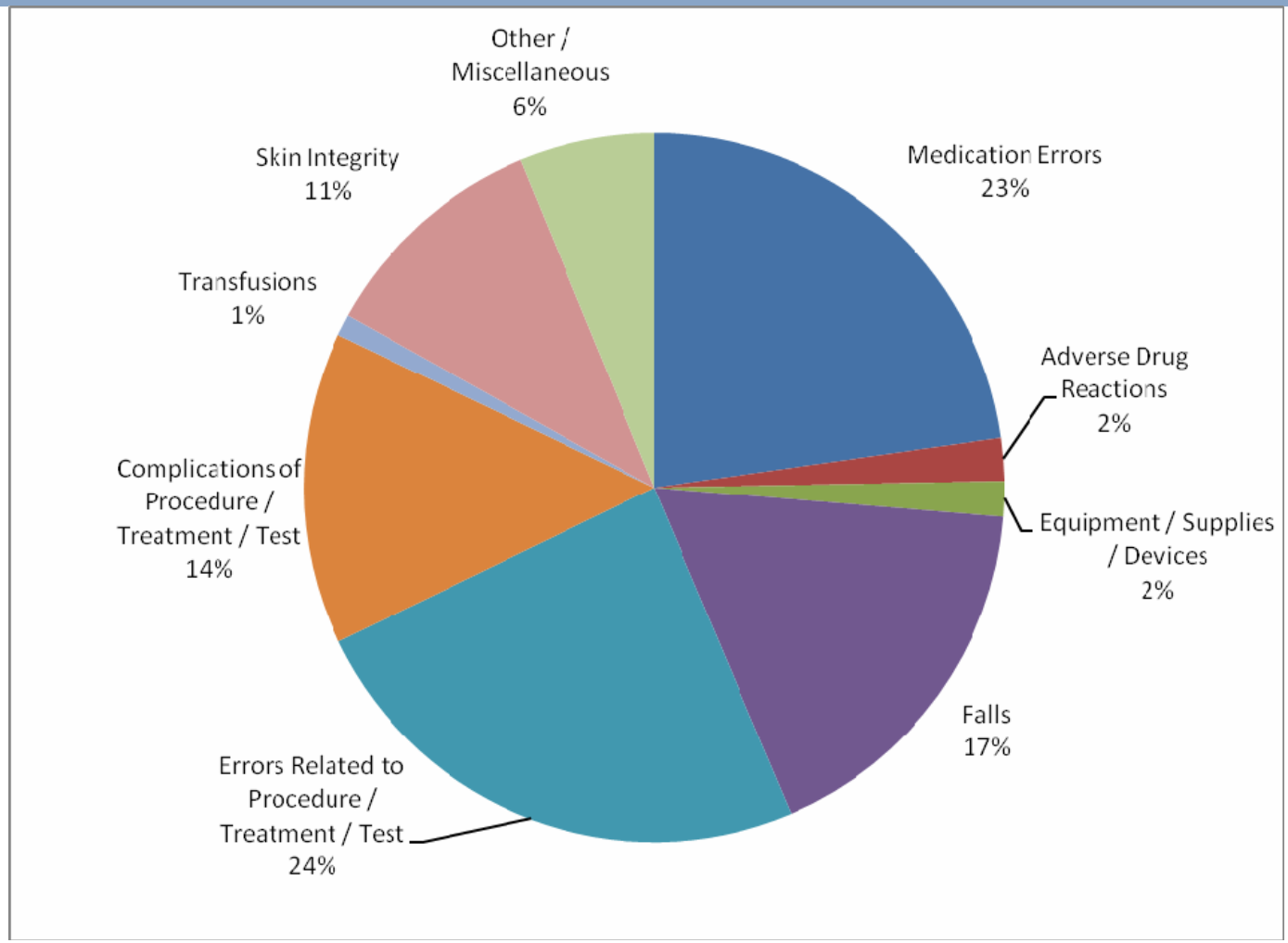
Data Output:

- Real time feedback to facilities
- Patient Safety Advisories
- Annual Report
- Integrated Facility – specific Analysis

Other Patient Safety Activities:

- Education and Training Programs
- Research
- Promotion of Culture of Safety
- Encourage Full and Open Disclosure

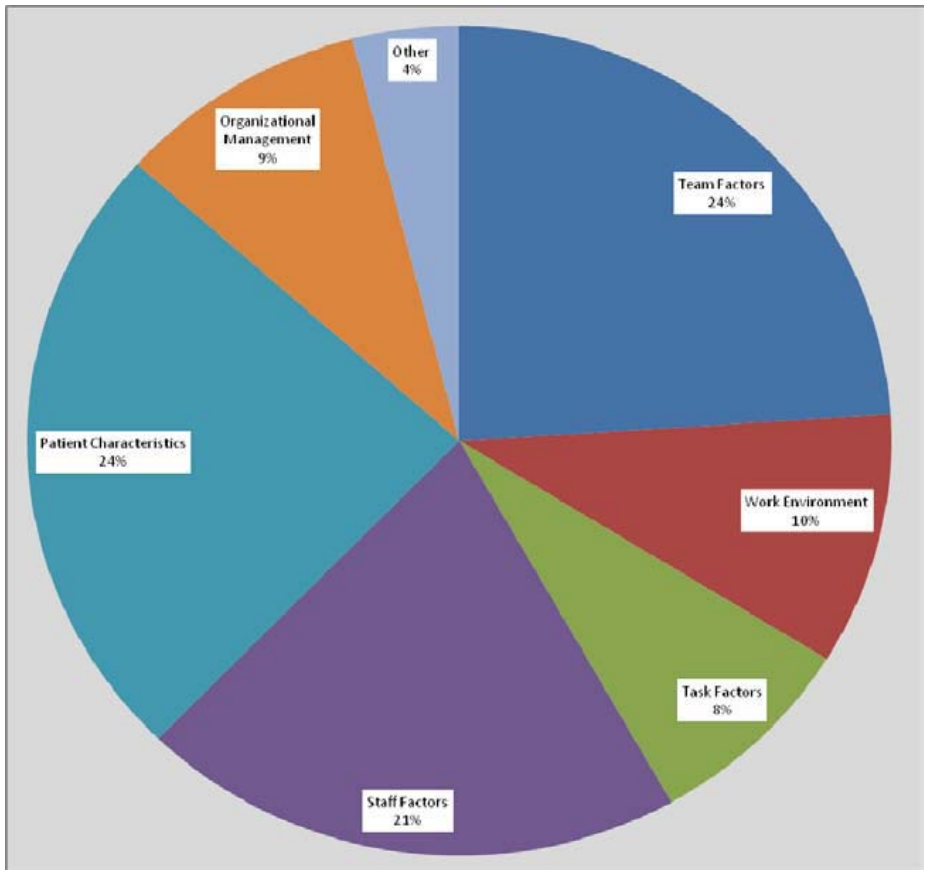
2006 Patterns in PA-PSRS Reports



2006 PA-PSRS Reports by Event Type and Serious Events

Event Type	% PA-PSRS Reports	% Serious Events	% Deaths
Medication Errors	23%	4%	2%
Adverse Drug Reactions	2%	3%	2%
Falls	17%	18%	6%
Errors of P/T/T	24%	9%	6%
Complications of P/T/T	14%	42%	57%
Transfusion	1%	1%	0%
Skin Integrity	11%	15%	0%
Other/Miscellaneous	6%	8%	27%

Leading Contributing Factors by Category (2006)



Leading Contributing Factors by Category (2006)

Patient Characteristics 24%

Team Factors 24%

Staff Factors 21%

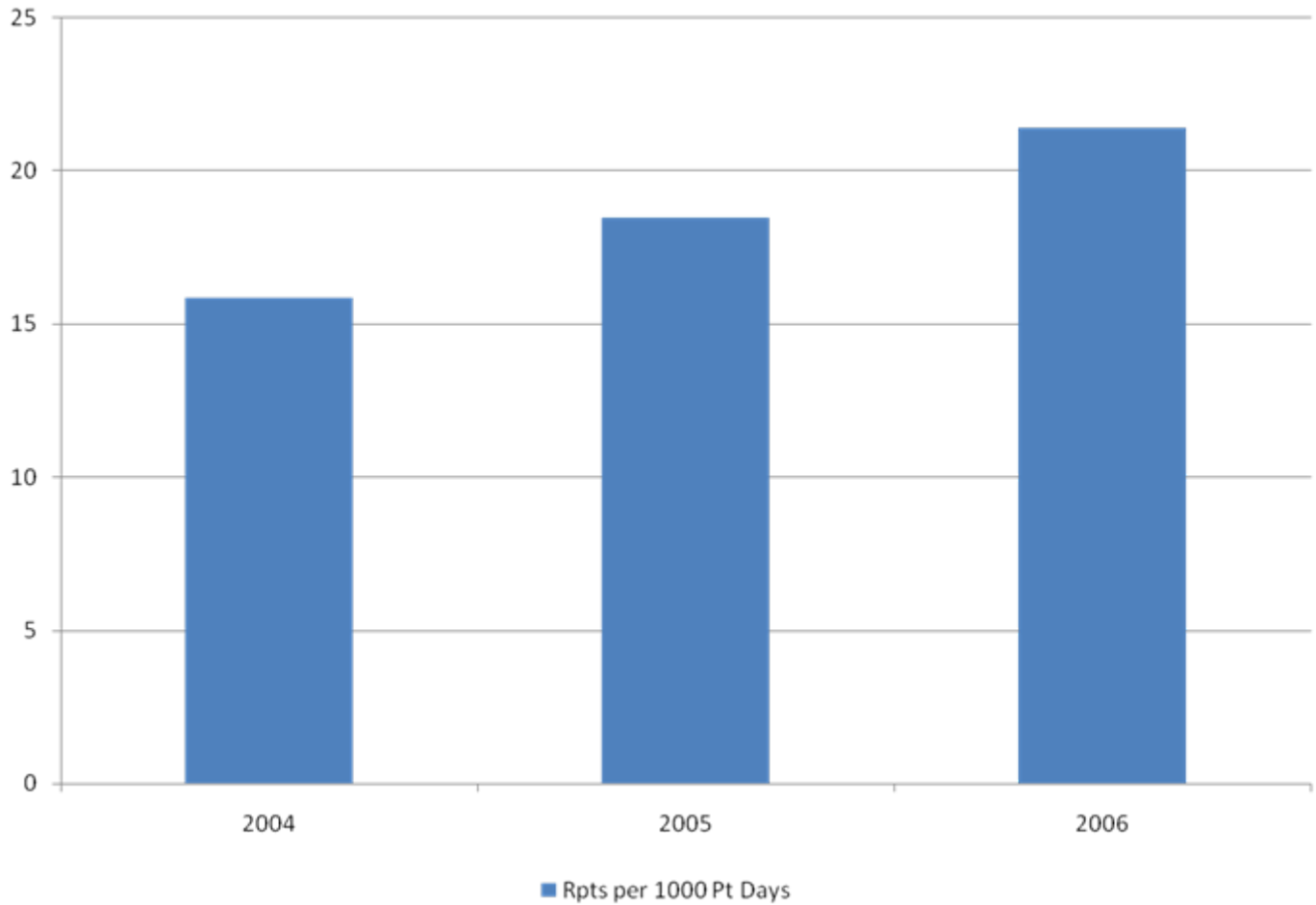
Work Environment 10%

Organizational Mgt. 9%

Task Factors 8%

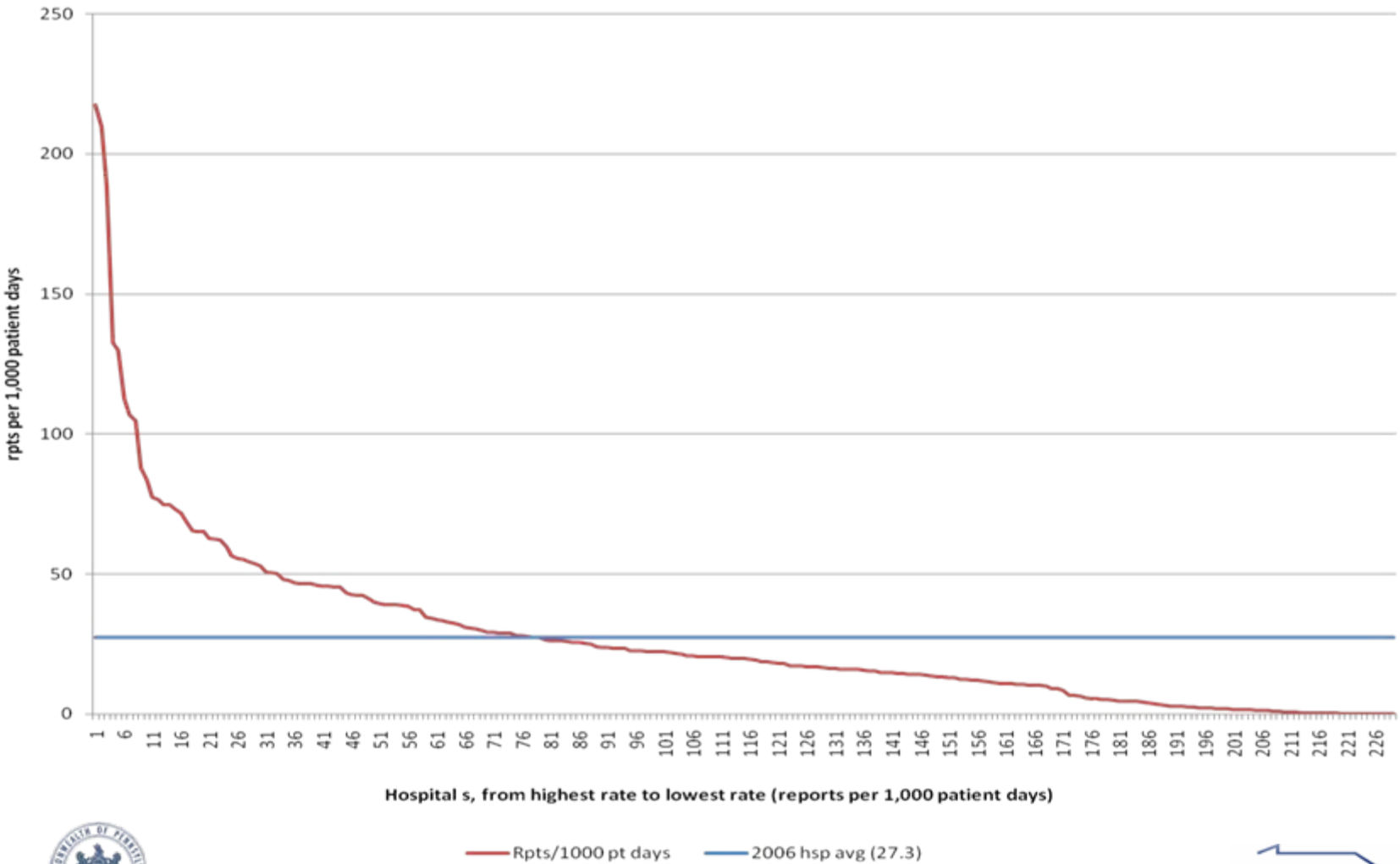
Other 4%

Reports Submitted by Hospitals Per 1,000 Patient Days (2004* - 2006)



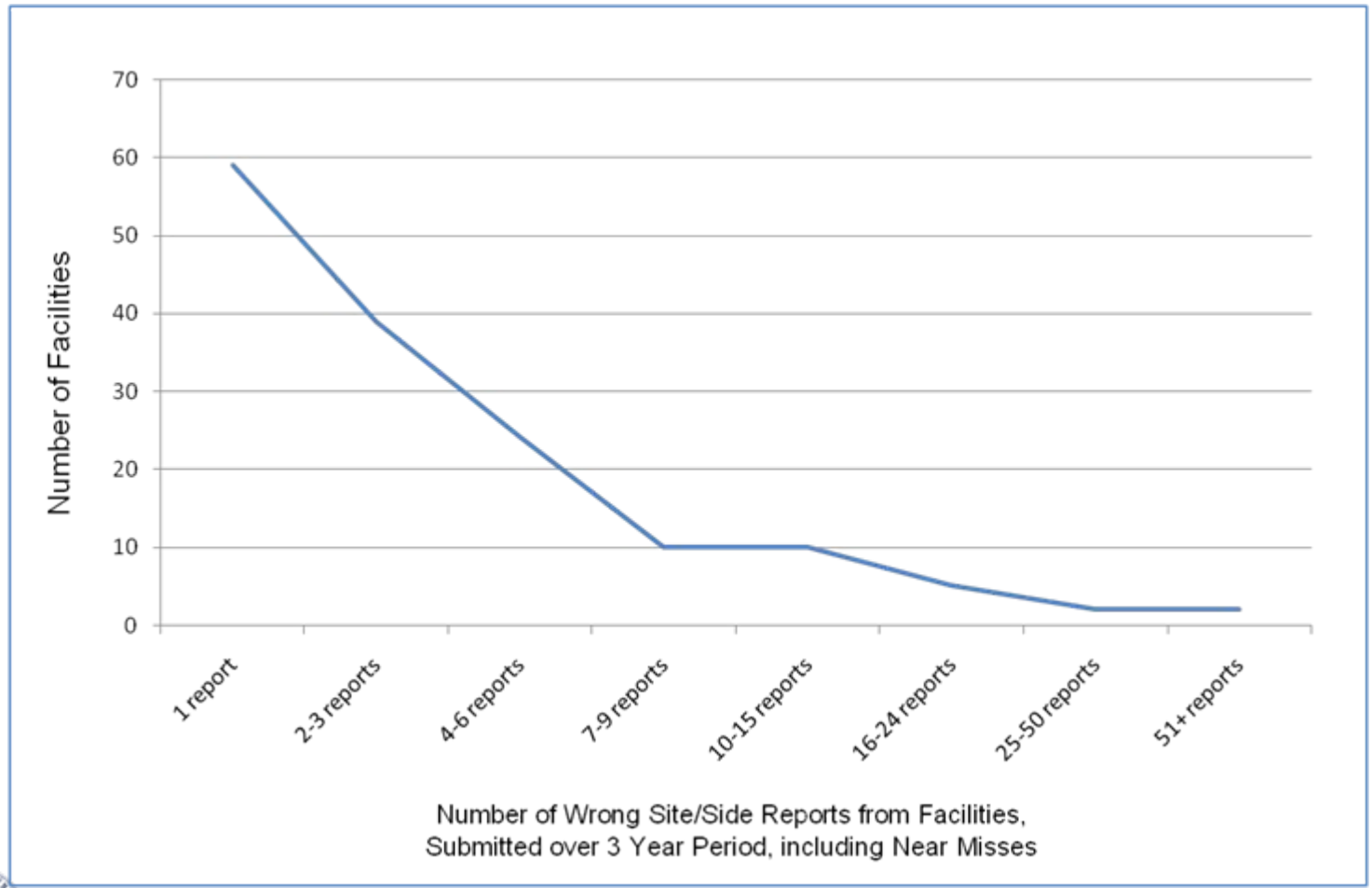
***PA-PSRS Began Collecting Reports June 28, 2004; these figures reflect the second half of 2004.**

Reports Submitted by Individual Hospitals Per 1,000 Patient Days (Highest to Lowest)

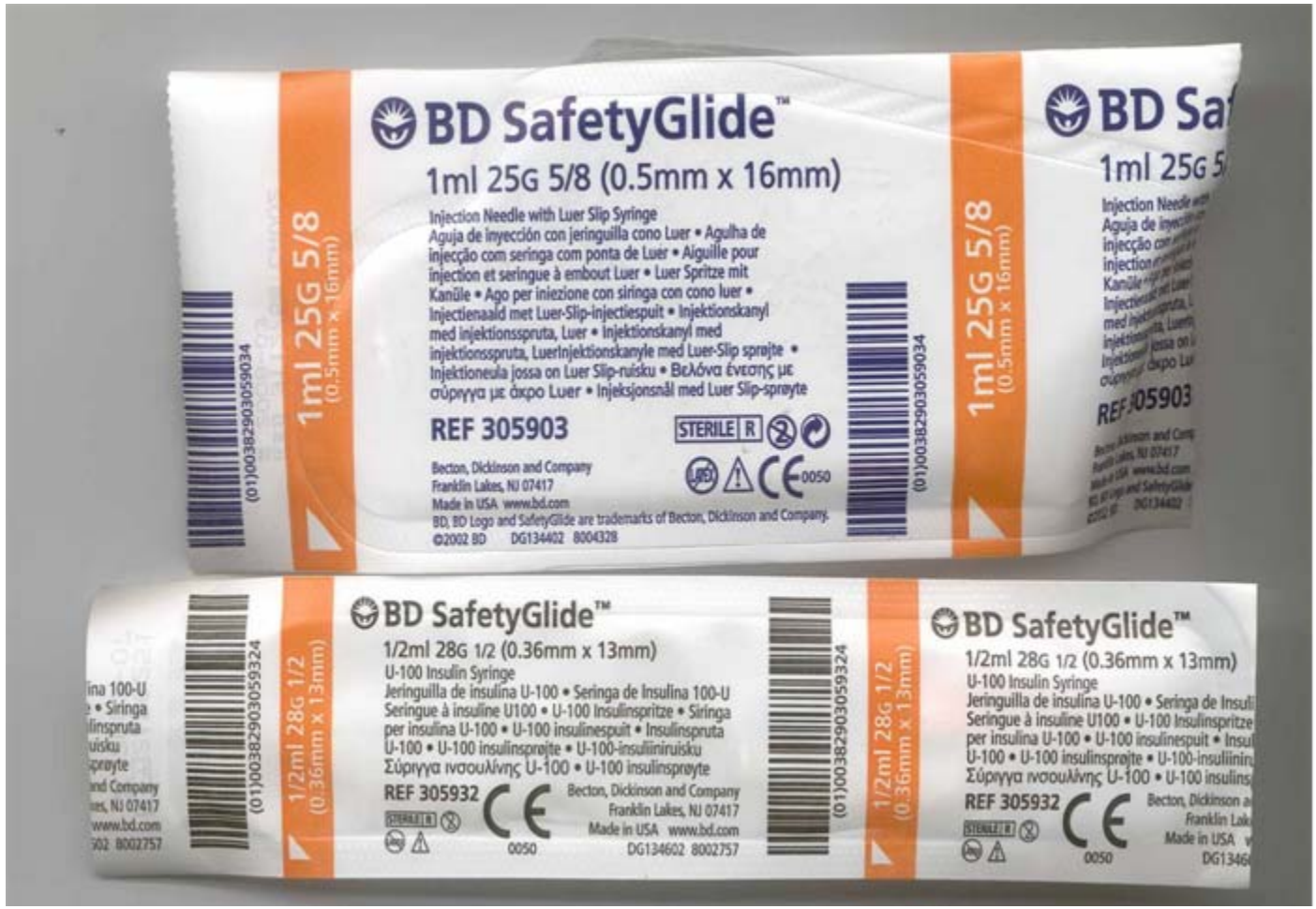


Distribution of WSS Events Reported by Facility (July 2004 – June 2007)

757 Cases of Wrong-Site Surgery Reports from 151 Facilities Over 3 Years

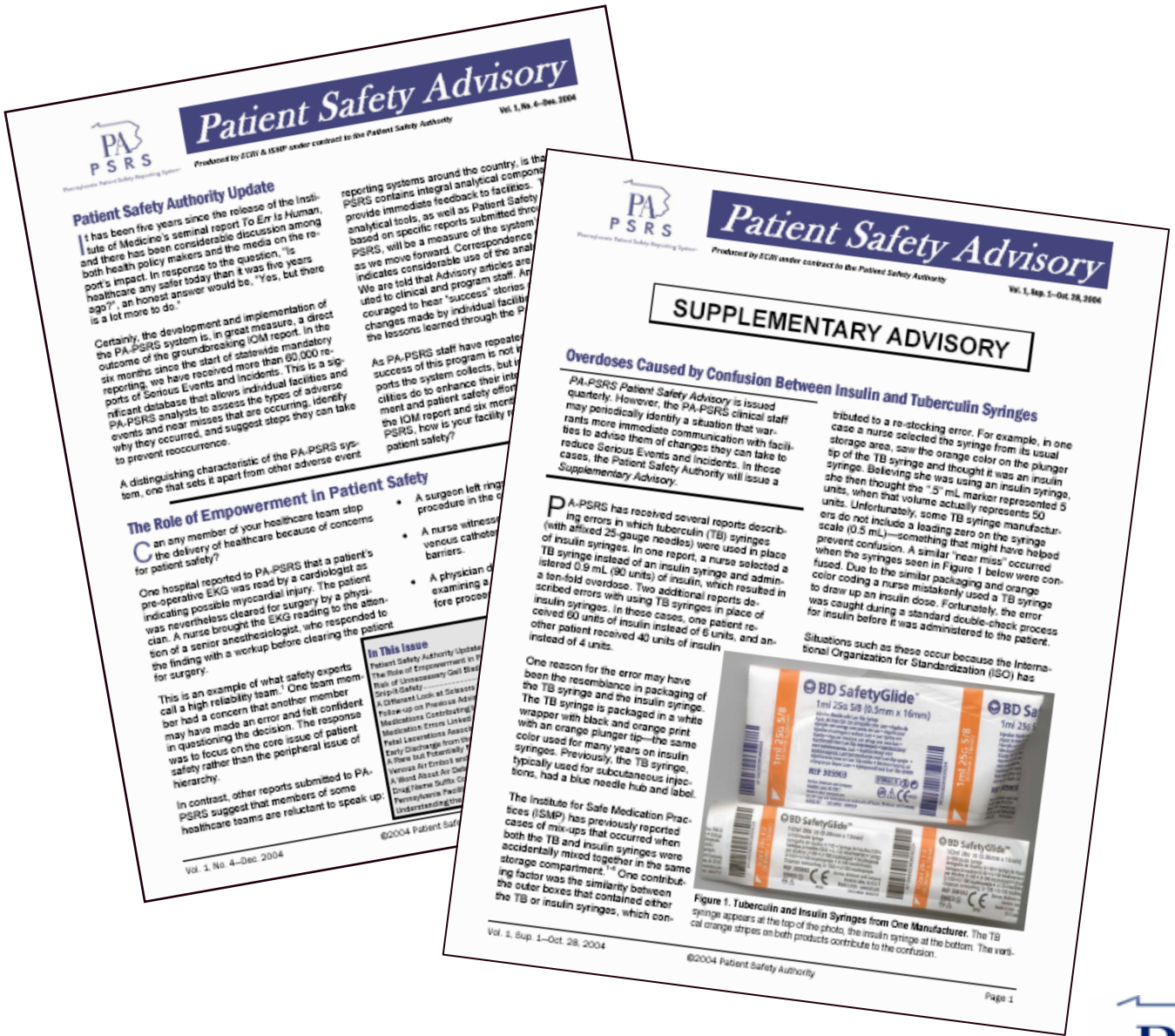


Look-Alike Packaging



Colors Used in Wristbands (Dec 2005 Survey)

Colors / Message	Purple	Blue	Teal	Green	Red	Pink	Orange	Yellow	White
DNR	■	■			■	■		■	
Limited DNR			■						
Fall Risk	■	■		■	■	■	■	■	
Restricted Extremity	■	■		■	■	■	■	■	
Allergy (other than latex)	■	■		■	■	■	■	■	
Allergy to Latex	■	■		■					
Tape Allergy		■							
Procedure Site	■							■	
Blood Type/Blood Bank ID				■	■	■			
No Blood Products						■			
Outpatient or ER Patient		■		■		■	■	■	
Pediatrics/Mother-Child Match								■	
Parent/guardian		■							
Similar Name		■							
Observation							■		
Isolation				■				■	
Elopement		■							
Pacemaker		■							
Anticoagulants		■							
Nothing by Mouth (NPO)								■	
Dietary Restrictions	■								
Diabetics		■							



PA PSRS

Patient Safety Advisory

Produced by ECRI & ISMP under contract to the Patient Safety Authority

Vol. 1, No. 4—Dec. 2004

Patient Safety Authority Update

It has been five years since the release of the Institute of Medicine's seminal report *To Err Is Human*, and there has been considerable discussion among both health policy makers and the media on the report's impact. In response to the question, "Is healthcare any safer today than it was five years ago?", an honest answer would be, "Yes, but there is a lot more to do."

Certainly, the development and implementation of the PA-PSRS system is, in great measure, a direct outcome of the groundbreaking IOM report. In the six months since the start of statewide mandatory reporting, we have received more than 60,000 reports of Serious Events and Incidents. This is a significant database that allows individual facilities and PA-PSRS analysts to assess the types of adverse events and near misses that are occurring, identify why they occurred, and suggest steps they can take to prevent reoccurrence.

A distinguishing characteristic of the PA-PSRS system, one that sets it apart from other adverse event reporting systems around the country, is that PA-PSRS contains integral analytical components to provide immediate feedback to facilities. These analytical tools, as well as Patient Safety Advisories based on specific reports submitted through PSRS, will be a measure of the system's success as we move forward. Correspondence received indicates considerable use of the analytical tools. We are told that Advisory articles are being distributed to clinical and program staff. And we are encouraged to hear "success" stories about changes made by individual facilities and the lessons learned through the PA-PSRS system.

As PA-PSRS staff have repeatedly stated, the success of this program is not measured by the reports the system collects, but by the actions facilities do to enhance their internal safety assessment and patient safety efforts. Have you read the IOM report and six months of Advisories from PA-PSRS, how is your facility responding to patient safety?

The Role of Empowerment in Patient Safety

Can any member of your healthcare team stop the delivery of healthcare because of concerns for patient safety?

One hospital reported to PA-PSRS that a patient's pre-operative EKG was read by a cardiologist as indicating possible myocardial injury. The patient was nevertheless cleared for surgery by a physician. A nurse brought the EKG reading to the attention of a senior anesthesiologist, who responded to the finding with a workup before clearing the patient for surgery.

This is an example of what safety experts call a high reliability team.[1] One team member had a concern that another member may have made an error and felt confident in questioning the decision. The response was to focus on the core issue of patient safety rather than the peripheral issue of hierarchy.

In contrast, other reports submitted to PA-PSRS suggest that members of some healthcare teams are reluctant to speak up:

- A surgeon left ring
- A nurse witness
- A physician

In This Issue

Vol. 1, No. 4—Dec. 2004

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PA PSRS

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Produced by ECRI under contract to the Patient Safety Authority

Vol. 1, Sup. 1—Oct. 28, 2004

SUPPLEMENTARY ADVISORY

Overdoses Caused by Confusion Between Insulin and Tuberculin Syringes

PA-PSRS Patient Safety Advisory is issued quarterly. However, the PA-PSRS clinical staff may periodically identify a situation that warrants more immediate communication with facilities to advise them of changes they can take to reduce Serious Events and Incidents. In those cases, the Patient Safety Authority will issue a *Supplementary Advisory*.

PA-PSRS has received several reports describing errors in which tuberculin (TB) syringes (with affixed 25-gauge needles) were used in place of insulin syringes. In one report, a nurse selected a TB syringe instead of an insulin syringe and administered 0.9 mL (90 units) of insulin, which resulted in a ten-fold overdose. Two additional reports described errors with using TB syringes in place of insulin syringes. In these cases, one patient received 60 units of insulin instead of 6 units, and another patient received 40 units of insulin instead of 4 units.

One reason for the error may have been the resemblance in packaging of the TB syringe and the insulin syringe. The TB syringe is packaged in a white wrapper with black and orange print with an orange plunger tip—the same color used for many years on insulin syringes. Previously, the TB syringe, typically used for subcutaneous injections, had a blue needle hub and label.

The Institute for Safe Medication Practices (ISMP) has previously reported cases of mix-ups that occurred when both the TB and insulin syringes were accidentally mixed together in the same storage compartment.[1-4] One contributing factor was the similarity between the outer boxes that contained either the TB or insulin syringes, which contributed to a re-stocking error. For example, in one case a nurse selected the syringe from its usual storage area, saw the orange color on the plunger tip of the TB syringe and thought it was an insulin syringe. Believing she was using an insulin syringe, she then thought the ".5" mL marker represented 5 units, when that volume actually represents 50 units. Unfortunately, some TB syringe manufacturers do not include a leading zero on the syringe scale (0.5 mL)—something that might have helped prevent confusion. A similar "near miss" occurred when the syringes seen in Figure 1 below were confused. Due to the similar packaging and orange color coding a nurse mistakenly used a TB syringe to draw up an insulin dose. Fortunately, the error was caught during a standard double-check process for insulin before it was administered to the patient.

Situations such as these occur because the International Organization for Standardization (ISO) has

Figure 1. Tuberculin and Insulin Syringes from One Manufacturer. The TB syringe appears at the top of the photo, the insulin syringe at the bottom. The vertical orange stripes on both products contribute to the confusion.

Vol. 1, Sup. 1—Oct. 28, 2004

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Page 1

PATIENT SAFETY AUTHORITY

PA PSRS

Selected Advisory Topics

- Doing the “Right” Things to Correct Wrong-Site Surgery
- Mismanagement of Expressed Breast Milk
- Bone Cement Implantation Syndrome
- Use of Color-Coded Wristbands Creates Unnecessary Risk
- Improving the Safety of Telephone and Verbal Orders
- Unanticipated Care after Discharge from ASF’s
- The Beers Criteria: Medication Screening in the Elderly
- Hidden sources of Latex in Healthcare Products
- Use of X-Rays for Incorrect Needle Counts
- Patient Identification Issues
- Falls Associated with Wheelchairs
- Medication Errors Linked to Name Confusion
- Anesthesia Awareness
- Lost Surgical Specimens
- Perforations of the Colon During Colonoscopy
- Who Administers Propofol in your Organization?
- Dangerous Abbreviations in Surgery
- Problems Related to Informed Consent
- Focus on High Alert Medications
- Bed Exit Alarms to Reduce Falls
- Confusion between Insulin and Tuberculin Syringes
- The Role of Empowerment in Patient Safety
- Changing Catheters Over a Wire
- Abbreviations: A Shortcut to Medication Errors
- When Patients Speak-Collaboration in Patient Safety

Verbal Orders Tool Kit

- Article Reprint: “Improving the Safety of Telephone or Verbal Orders” (vol.3, No.2- June 2006)
- Sample policy on use of verbal orders based on guidance included in the article
- Poster to remind clinicians about the read-back procedure
- Audio PowerPoint slideshow for training on safe practices associated with verbal orders
- Survey questionnaire to assess use of verbal orders in your facility

System Enhancements and Educational Outreach

- Root Cause Analysis Training
- FMEA Training
- Focus Groups
- Interface Development
- User Surveys
- Statewide Citizen Surveys

Reports to PA-PSRS of Interest to Nurse Anesthetists (since June, 2004)

o15% of overall coded anesthesia events in PA-PSRS report harm

- Harm is reported overall in 4% of PA-PSRS reports
- Includes 19 deaths,18 near-death events and 4 permanent injuries

Facilities reporting errors of interest to Nurse Anesthetists

o 3 out of 4 reports that specifically mention Nurse Anesthetists come from hospitals

- 1 of every 3 facilities that mention them is an Ambulatory Surgery Facility (ASF)
- 50% of the Serious Events from these reports come from ASFs

Event Types mentioning Nurse Anesthetists

Complication of Procedure / Treatment / Test	35.9%
Error related to Procedure / Treatment / Test	24.5%
Medication error	14.6%
Other/Miscellaneous	13.7%

Reports to PA-PSRS Involving Nurse Anesthetists (since June, 2004)

Types of reports involving Nurse Anesthetists

- o Wrong medications given to patients
- o Wrong doses of medications given to patients
- o Patients misidentified or not checked for proper identification
- o Consent problems (missing or inadequate)
- o Eye irritation due to taping eyelids shut
- o Intubation and extubation problems
- o Infiltrations of IVs

Reports to PA-PSRS Involving Nurse Anesthetists (since June, 2004)

- ✓ "Good catches" by Nurse Anesthetists
  - Questioned site of operation, preventing wrong site surgery
  - Cancelled procedures due to evaluation of patient's preoperative condition
    - (cardiac arrythmia, elevated blood pressure/heart rate, etc.)
  - Promptly detected and restarted infiltrated IVs
  - Responded to allergic reactions and skin rashes
  - Cleared and stabilized patient airways following aspirations
  - Performed emergent intubation of patients in respiratory distress
  - Responded to disconnected epidural catheter

Reports to PA-PSRS involving Propofol and Diprivan

Facilities reporting errors involving Propofol and Diprivan

o 150 facilities have reported errors involving Propofol/Diprivan (since June, 2004)

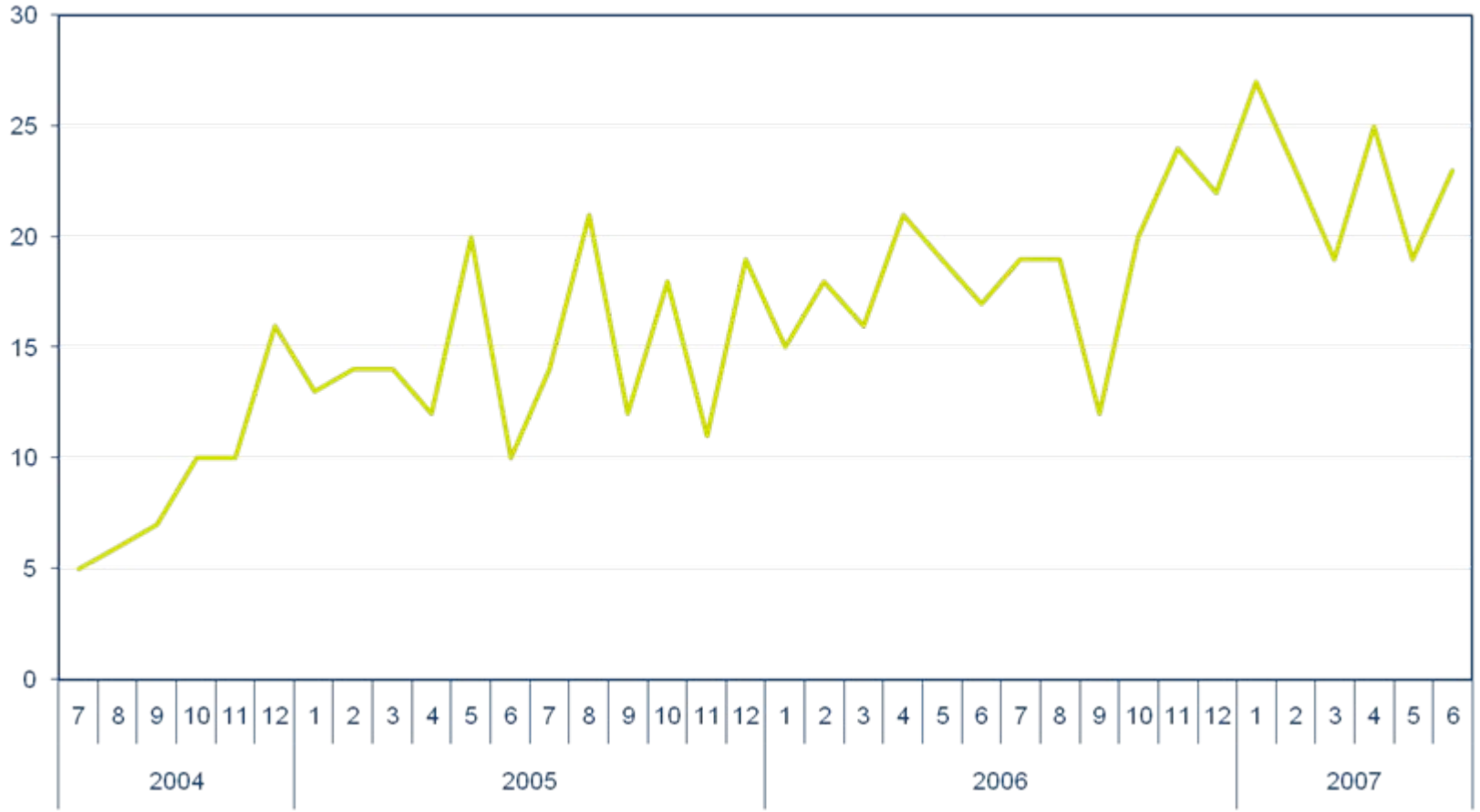
- Of these, 10 facilities have accounted for 45% of reports
- 38 facilities were Ambulatory Surgical Facilities(ASFs)
  - About half of these ASFs specialize in endoscopic procedures

Harm level of reports involving Propofol and Diprivan

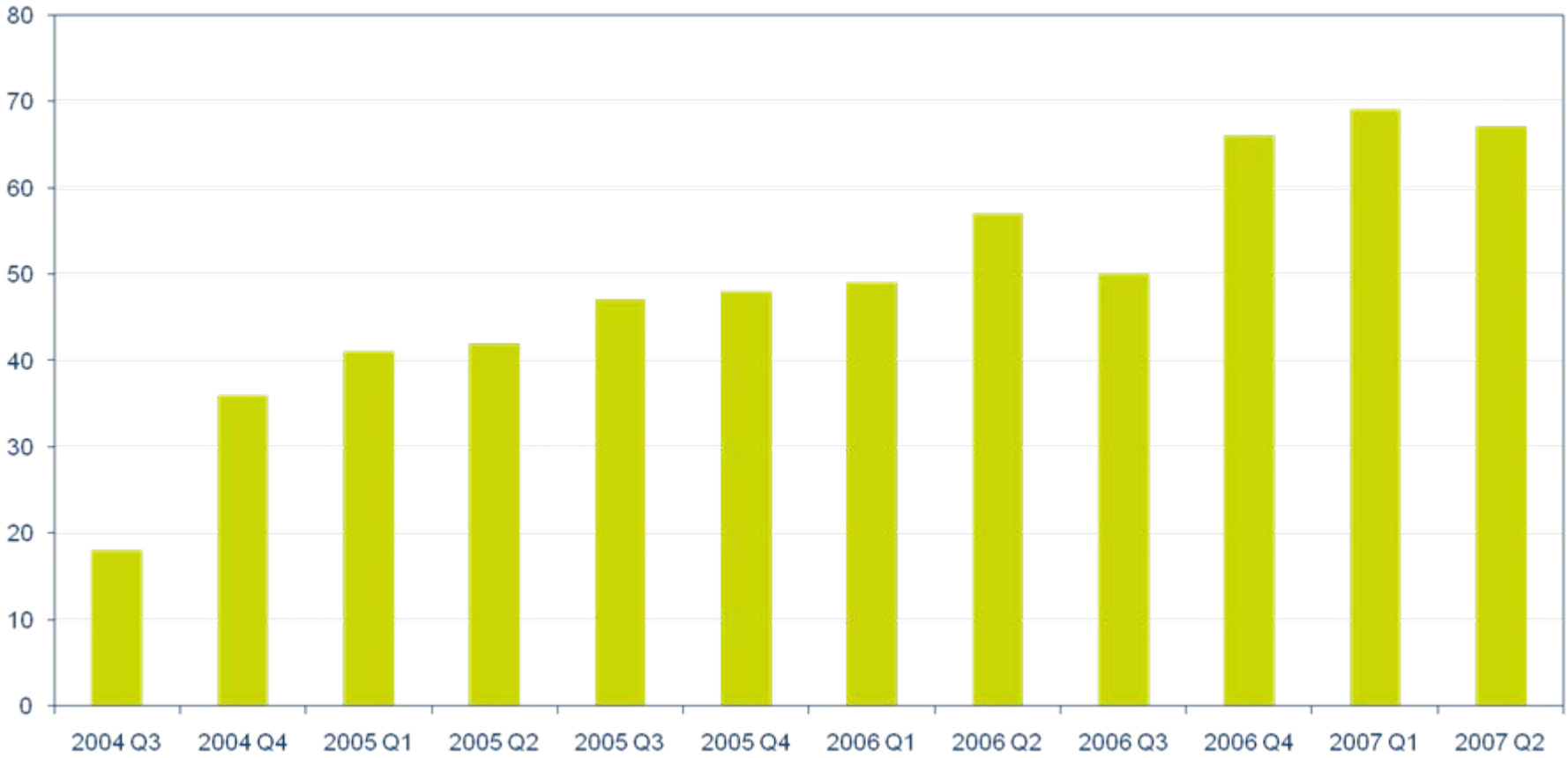
o Of the Propofol/Diprivan reports to PA-PSRS, 11% reported harm to the patient

- Harm is reported overall in 4% of PA-PSRS reports
- ASFs reported harm in 28% of their submitted reports involving Propofol/Diprivan
- Death occurred in 6 reports involving Propofol/Diprivan

Reports to PA-PSRS involving Propofol/Diprivan, by Month



Reports to PA-PSRS involving Propofol/Diprivan, by Quarter



Patient Safety Advisory

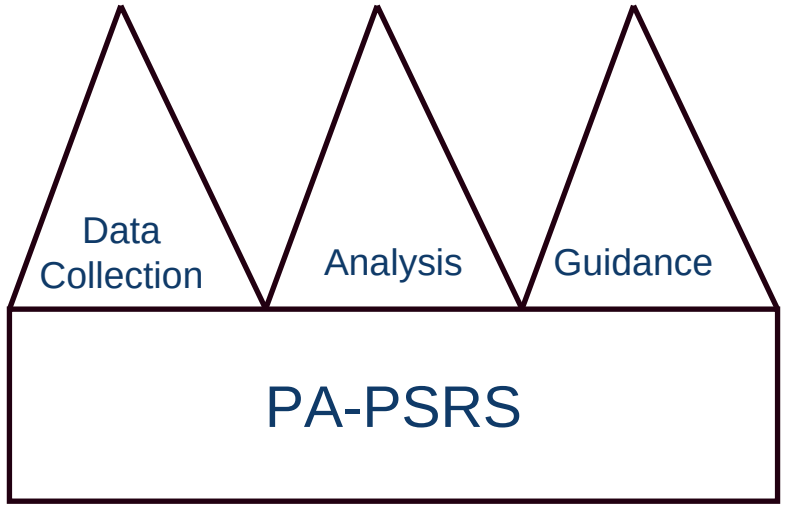
The Patient Safety Authority has reported extensively on various anesthesia topics in the *Patient Safety Advisory*:

- Obstructive Sleep Apnea May Block the Path to a Positive Postoperative Outcome (September, 2007)
- Propofol Infusion Syndrome: A Rare but Potentially Fatal Reaction (June, 2007)
- Complications of Retrobulbar Blocks (March, 2007)
- Demerol: Is It the Best Analgesic? (June, 2006)
- Who Administers Propofol in Your Organization? (March, 2006)
- New Guidance on Preventing Anesthesia Awareness (March, 2006)
- Anesthesia Awareness (September, 2005)
- PCA by Proxy—An Overdose of Care (June, 2005)

Available at www.psa.state.pa.us.

Where We Are

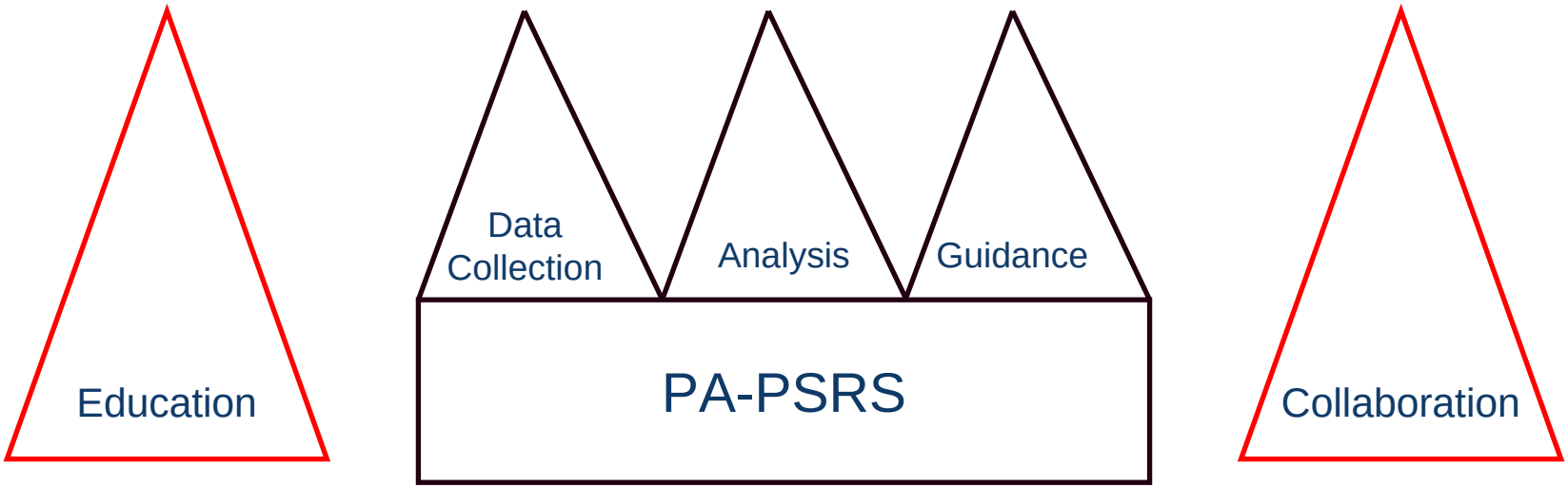
Safe Patient Experiences



- Over one half million reports reviewed
- Patient Safety Advisories
- RCA and new user training
- Special Projects

Where We Are Going

Safe Patient Experiences



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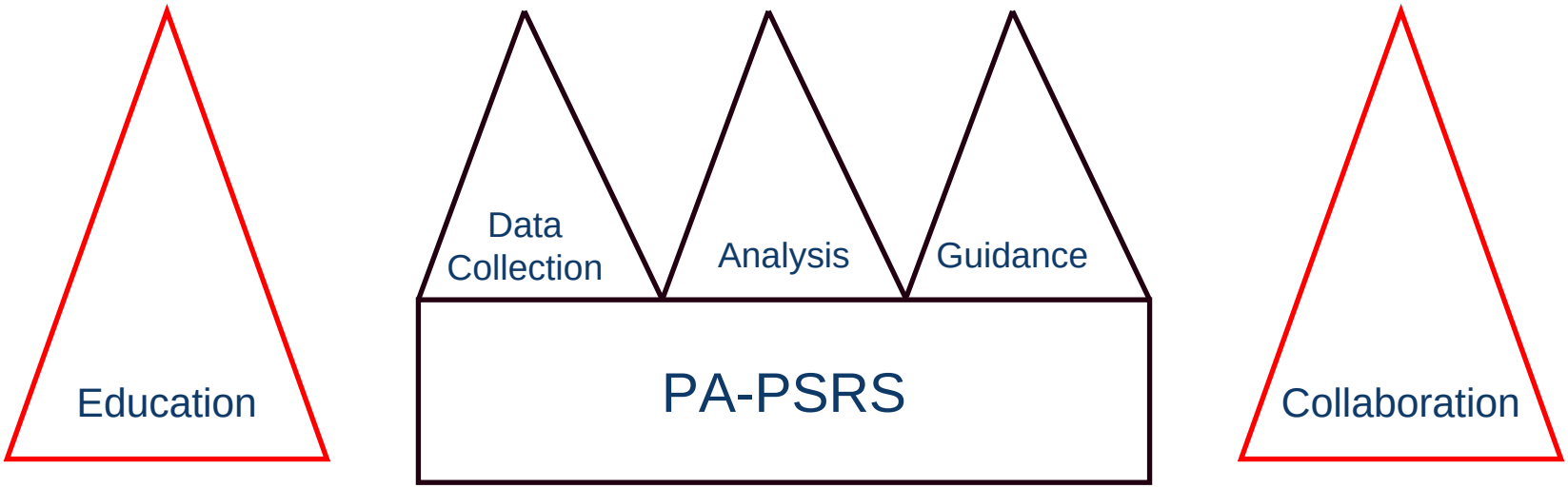

- FMEA
- Healthcare acquired infection
- Board of Trustees
- Root cause analysis
- Health care training grounds
- Nursing homes

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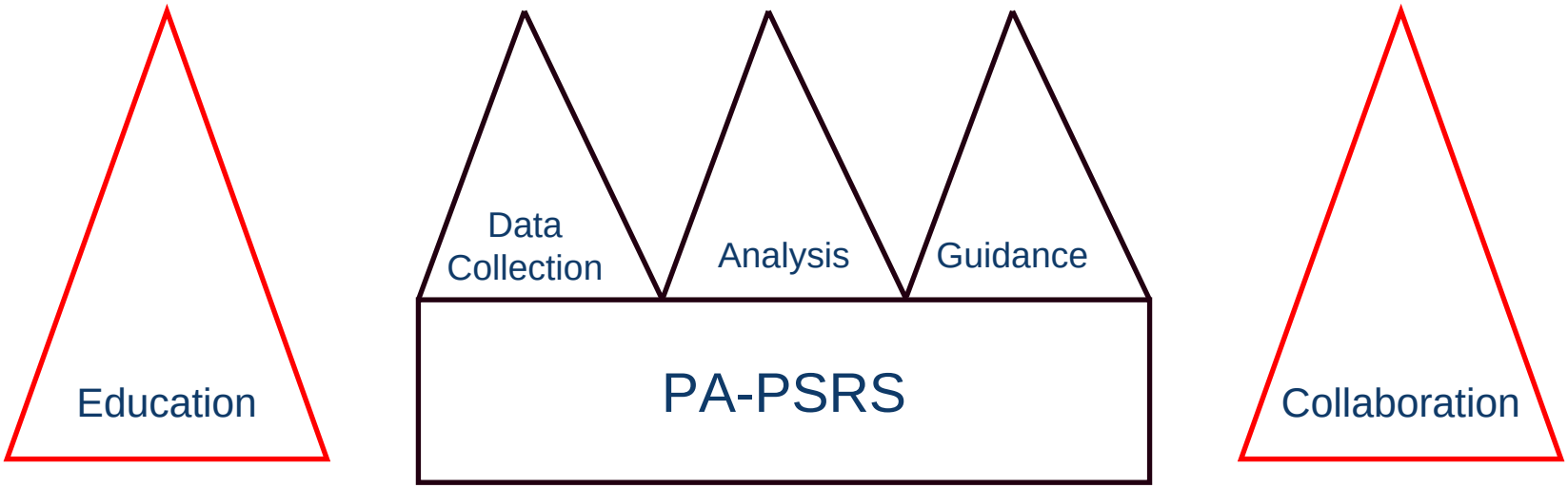

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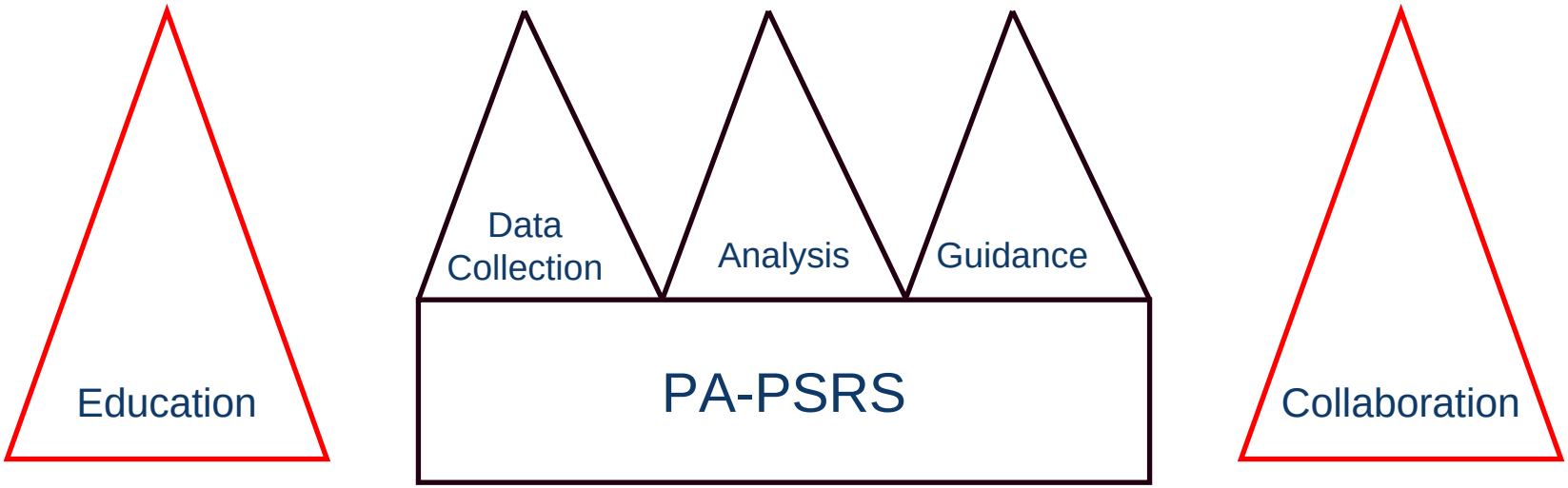
- PaSsKEy
- Board of Trustees
- Extended local presence
- State Agencies
- HAP, IHI, HCIF, others

Where We Are Going

Safe Patient Experiences



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- Recommendations
- Reporting consistency

- PaSsKEy
- Board of Trustees
- Extended local presence
- State Agencies
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Strategic Plan Initiatives

- A: Educate Executive Management and Boards of Trustees
- B: Infection Awareness and Reduction
- C: Patient Safety Knowledge Exchange (PaSsKEy)
- D: Improve Reporting Consistency and Recommendations
- E: Increase Effectiveness through Extended Presence
- F: Governor's Office of Healthcare Reform (GOHCR) Collaboration
- G: Data Collaboration
- H: Patient Safety Methods Training
- I: Nursing Home Data Analysis
- J: PA-PSRS System Enhancements
- K: Maintain Success of Patient Safety Advisory

2006 John M. Eisenberg Award for Advancing Patient Safety and Quality

The award recognizes the Authority's efforts to make PA-PSRS into a nationally recognized resource for education and learning about patient safety.

- Joint Commission on Accreditation of Healthcare Organizations
- National Quality Forum (NQF)

Culture of Safety

The ultimate success of the PA-PSRS system is not in the number of reports we receive, but in how facilities and individual providers use the information within those reports to improve patient care.

PA Patient Safety Authority

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