

Protecting Patients with Latex Allergies

Strategies to reduce risk and improve patient safety.

The Pennsylvania Patient Safety Reporting System is a confidential, statewide Internet reporting system to which all Pennsylvania hospitals, outpatient-surgery facilities, birthing centers, and abortion facilities must file information on incidents and serious events.

Safety Monitor is a column from Pennsylvania's Patient Safety Authority, the authority that informs nurses on issues that can affect patient safety and presents strategies they can easily integrate into practice. For more information on the authority, visit www.patientsafety.pa.gov. For the original article discussed in this column or for other articles on patient safety, click on "Advisories and Events" and then "Pennsylvania Patient Safety Advisory" in the top navigation menu.

Latex allergies surged in the 1980s amid concerns about the transmission of communicable diseases, including HIV, and the introduction of universal precautions.¹⁻⁴ This public health crisis prompted awareness campaigns and risk reduction strategies. In the decades that followed, multidisciplinary collaboration fostered improvements in synthetic products, such as gloves⁵; standardized labeling recommendations for latex medical products⁵; and a ban on sales of powdered latex gloves in the United States.⁶

Despite decreases in the incidence and prevalence of latex allergy and a widespread belief that the epidemic has been resolved,³ an estimated 4.3% of the world's population is still affected by latex allergies.⁷ The possibility of latex lurking in the health care environment, with an abundance of products, people, and processes that could involve latex, poses a threat to patients' safety. Maintaining a latex-safe environment is essential, and learning from reports of errors and near misses can strengthen safety strategies for all.

DEFINING LATEX ALLERGIES

Sensitization to latex is a precursor to a clinical reaction and involves priming the immune system to recognize latex proteins as allergens, develop latex-specific antibodies, and launch a symptomatic response when exposed again.⁸ The powder used to facilitate the donning of gloves has been associated with increased sensitization risk; the powder binds to latex proteins and lurks in the care environment, which leads to airborne exposure.^{3,8} In addition, frequent exposure to latex allergens increases the risk of sensitization and the likelihood of a clinical reaction.⁹

Types of clinical reactions to latex include irritant contact dermatitis, allergic contact dermatitis, and immediate hypersensitivity (also known as type I hypersensitivity).⁹ The most common reaction, irritant contact dermatitis, presents as dry, itchy skin—typically on the hands—and is not technically a true allergy.⁹ Allergic contact dermatitis resembles poison ivy rash and appears 24 to 48 hours after exposure to the chemicals used in latex manufacturing.⁹ Immediate hypersensitivity reactions to latex proteins can range in severity and onset, from instantaneous anaphylaxis to flushing or hives hours later.⁹ The severity of past reactions to latex does not predict future reactions, making appropriate screening, referral, and precautions important.⁹

PATIENT SAFETY REPORTS

Pennsylvania hospitals, ambulatory surgery centers, birthing centers, and abortion facilities submit reports of patient safety incidents and serious events through the Pennsylvania Patient Safety Reporting System (PA-PSRS). The Medical Care Availability and Reduction of Error (MCARE) Act of 2002 established PA-PSRS and the mandates for reporting.¹⁰ The MCARE Act defines an incident as 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."¹⁰ The act defines a serious event as 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



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the patient.”¹⁰ As of December 31, 2016, there were 238 hospitals and 308 ambulatory surgery facilities submitting reports through PA-PSRS.¹¹

The patient safety events involving latex allergies reported through PA-PSRS from January 2014 through December 2016 are summarized as follows:

- Five-hundred forty-four breaches in latex precautions reached patients (exposures). (See Figure 1.)
- Reports of latex exposures described 36 unique latex products, the most common of which involved indwelling urinary catheters, gloves, red rubber catheters, and Penrose drains.
- Indwelling urinary catheters accounted for 75% of exposures.
- Seven exposures resulted in temporary patient harm that required treatment or intervention. The sources of latex described in these reports were indwelling urinary catheters (four cases), intermittent urinary catheter (one), gloves (one), and Swan–Ganz catheter (one). Reactions included rash, itching, hives, burning sensation, throat tightness, and hypotension. Interventions included medication administration, surgical-site irrigation, and a return visit to the ED.
- Perioperative care areas accounted for more than half of all exposures, followed by medical–surgical units, the ED, and obstetric units.
- Because of detection and active recovery by staff, 72 breaches of latex precautions did not reach the patient (these were considered near misses).

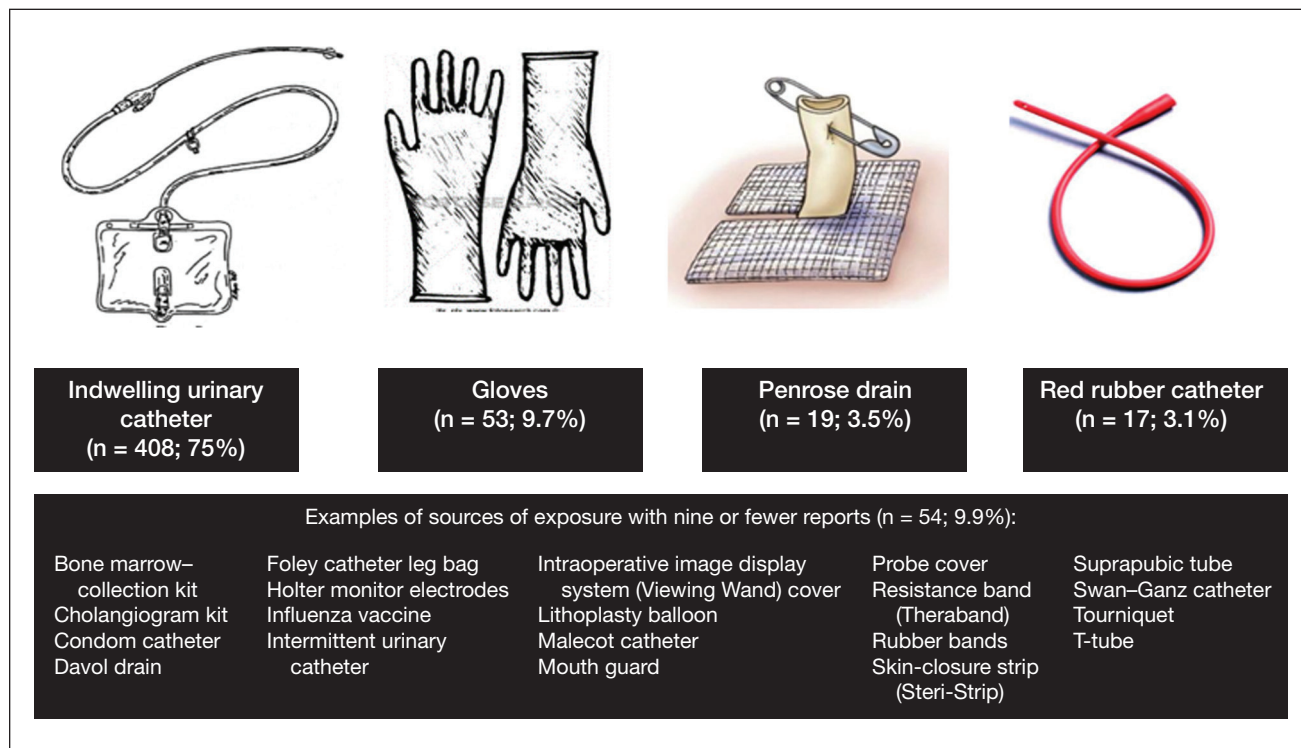
- Examples of actions taken by staff in the near-miss situations that prevented exposure to latex included recognizing that a patient was without an allergy wristband, recognizing that an allergy had not been documented, identifying a latex allergy during preoperative interview, performing an operating room teardown after an allergy was identified, and discovering and removing a latex product in the care area.

The severity of past reactions to latex does not predict future reactions, making screening, referral, and precautions important.

EXAMPLES OF PATIENT SAFETY EVENTS REPORTED THROUGH PA-PSRS

The following are examples of reported events involving latex exposures (details of the narratives in this article have been modified to preserve patient confidentiality):

- *Patient arrived in operating room for procedure. Foley catheter assessed and noted not to be latex free. Patient has a latex allergy.*

Figure 1. Sources of Latex Exposure (N = 544), as Reported to PA-PSRS from January 2014 Through December 2016^a

^aThese sources of latex exposure total more than the 544 exposure events because some reports described more than one source of latex exposure.

- Latex gloves used during surgical procedure. Patient has a documented latex allergy. Allergy should have been caught during the time-out.
- Patient with a known latex allergy. When surgeon asked for a Penrose drain, nurse inadvertently opened a latex Penrose drain on the table, and it was inserted into the patient's abdomen.
- Patient with a documented latex allergy needed a straight catheter. Tech selected a red rubber catheter from the supply room rather than a latex-free catheter.

The following are examples of events involving latex near misses reported to PA-PSRS:

- Circulator checked patient into the operating room and noted a latex allergy sticker on chart. Nurse confirmed latex allergy with patient. The latex allergy was documented by a sticker on the chart, and there was a band on the patient's arm. Allergy was not communicated to the operating room. The entire setup in the operating room was torn down and the case was set up without latex products.
- When patient was asked what allergies she had, she indicated only an allergy to peanuts. When a potential latex allergy was noticed in her chart,

nurse went back and asked patient if she had a latex allergy, and she said that she did.

- Patient's father informed the nurse that patient had a latex allergy and that physician had brought in latex gloves to perform the procedure. Patient's father confronted physician before procedure began.
- Patient [with latex allergy] arrived in the operating room with no allergy band, and there was no allergy sticker on chart.

STRATEGIES TO REDUCE LATEX ALLERGY RISK

Review of the PA-PSRS patient safety event reports indicates that breaches of latex precautions with the potential for life-threatening effects continue to occur. The following is a list of strategies intended to reduce risk and improve patient safety.

Ask focused screening questions. Ascertaining a patient's allergy status is among the first steps in establishing a plan of care.

- Ask patients specifically, "Are you allergic to latex?"
- Ask patients about latex allergies before performing procedures that may involve latex products, such as urinary catheter insertion or venipuncture.

Be aware of latex products in the care environment. Operating under the assumption that all products in health care are latex-free can lead to inadvertent latex exposures. More than 40,000 everyday items contain latex,¹² which makes reliance on latex-product lists or human recall challenging.

- Familiarize yourself with your facility's approach to creating a latex-safe environment, including policies, procedures, and any focused efforts to reduce latex use.
- Assess recognition by the staff of the products in their care environment that may contain latex.
- Read product labels to confirm that items are not made with natural rubber latex.^{5,13}
- Ask questions if product labeling is unclear or contamination is suspected.
- Recognize that latex-free products could be replaced with products containing latex without warning.

Document and communicate the patient's latex allergy. Given the surplus of data and documentation in health care, input into the medical record does not guarantee that important information is effectively communicated to those who need to know.

- Notify receiving departments, such as the operating room or radiology, of the patient's latex allergy in advance so they can prepare the environment and obtain latex-safe products.^{13,14}
- Communicate the patient's latex allergy in the time-out before procedures at the bedside and in procedural areas.¹⁵
- Ensure that the patient's latex allergy is documented in the medical record and included in verbal handoffs.
- Ensure that visual reminders of the patient's latex allergy are in place (using wristbands and signage, for example).^{13,16}
- Enlist patients and families as partners in prevention by instructing them in monitoring the environment and giving them permission to remind all members of the care team about the patient's latex allergy.¹⁶

TYING IT ALL TOGETHER

Latex products continue to pose a threat to patient safety. The safety reports from Pennsylvania health care facilities demonstrate how slips in information gathering, transmission, and application can lead to breaches of latex precautions. Through focused screening, communication, and product assessment, the safety of patients with latex allergies can be improved. ▼

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