**NEWS RELEASE**

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**Challenges with home-use medical devices for patients and caregivers tops ECRI’s 2024 health tech hazards**

**Report warns of safety risks with 10 health technologies, including weak AI governance, damaged infusion pumps, ransomware attacks, and defective orthopedic implants**

PLYMOUTH MEETING, PA— One of the nation’s largest nonprofit patient safety organizations has named challenges for patients and caregivers using medical devices at home as the most pressing health technology safety hazard for 2024. Reflecting industry trends, the list also includes multiple concerns related to artificial intelligence (AI) and data security.

The report is compiled by ECRI, a nonprofit patient safety organization and the only such organization in the world to conduct independent medical device evaluations. ECRI follows a rigorous review process to select topics, drawing insight from incident investigations, reporting databases, and independent medical device testing.

Evidence shows that more people are receiving medical care at home as the U.S. population ages and the number of adults living with chronic conditions increases. As a result, medical devices such as infusion pumps and ventilators are now being used in the home, sometimes by caregivers and patients who have not been sufficiently trained.

Most medical devices are designed for use by healthcare professionals in a controlled clinical environment and thus may be too complex for laypeople to use safely and effectively, ECRI researchers say.

“Severe harm can result from the misuse or malfunction of medical devices in the home,” said Marcus Schabacker, MD, PhD, president and CEO of ECRI. “Patients and caregivers who misinterpret device readings may feel a false sense of security. Errors may go undetected or unreported, making it difficult to identify problematic trends.”

ECRI researchers have encountered numerous examples of patient harm from home-use devices. Medication errors can occur when changing infusion pumps. Skin injuries can occur when the electrodes from a cardiac monitor are applied incorrectly. Fatalities can occur if a home ventilator alarm fails to activate or goes unheard, or if the venous needle becomes dislodged during use of a hemodialysis machine.

“When a medical device is designed, it’s critical that human factors and the end user be considered,” said Schabacker. “As more patients receive medical care outside hospitals and nursing homes, the reality of modern care settings should influence the design of devices and other supplies we need to keep patients healthy.”

**In ranked order, ECRI's Top 10 Health Technology Hazards for 2024 are:**

1. Usability challenges with medical devices in the home
2. Insufficient cleaning instructions for medical devices
3. Drug compounding without technology safeguards
4. Environmental harm from patient care
5. Insufficient governance of AI in medical technologies
6. Ransomware as a critical threat to the healthcare sector
7. Burns from single-foil electrosurgical electrodes
8. Damaged infusion pumps risk medication errors
9. Defects in implantable orthopedic products
10. Web analytics software and the misuse of patient data

Now in its 17th year, ECRI’s Top 10 Health Technology Hazards report identifies critical healthcare technology issues. Since its creation in 2008, the list has supported hospitals, health systems, ambulatory surgery centers, and manufacturers in mitigating risks.

An executive brief of the latest Top 10 Health Technology Hazards report is available for download at [www.ECRI.org/2024hazards](http://www.ECRI.org/2024hazards). The full report is accessible to ECRI members and includes detailed steps that organizations and industry can take to reduce risk and improve patient safety. To learn more, visit [www.ECRI.org](http://www.ECRI.org).

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**About ECRI**

ECRI is an independent, nonprofit organization improving the safety, quality, and cost-effectiveness of care across all healthcare settings. With a focus on technology evaluation and safety, ECRI is respected and trusted by healthcare leaders and agencies worldwide. Over the past 55 years, ECRI has built its reputation on integrity and disciplined rigor, with an unwavering commitment to independence and strict conflict-of-interest rules. ECRI is the only organization worldwide to conduct independent medical device evaluations, with labs located in North America and Asia Pacific. ECRI is designated an Evidence-based Practice Center by the U.S. Agency for Healthcare Research and Quality. ECRI and the Institute for Safe Medication Practices PSO is a federally certified Patient Safety Organization as designated by the U.S. Department of Health and Human Services. The Institute for Safe Medication Practices (ISMP) formally became an ECRI affiliate in 2020. Visit [www.ecri.org](http://www.ecri.org).