

## ECRI: Top 10 Healthcare Innovations for 2017



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New technologies are made available with a view to improving patient care as well as reducing costs. For healthcare executives, deciding what to bring into their hospitals – and what to keep out – may not be easy.

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"Navigating new technologies is one of the biggest challenges we hear about from hospital leaders," according to Robert P. Maliff, director of Applied Solutions Group, ECRI Institute. "They simply can't afford to miss the mark on which clinical advancements to bring in to improve patient care."

ECRI has released its annual "Top 10 Hospital C-suite Watch List" that can serve as a guide for hospital leaders in making tough decisions about new and emerging technologies in 2017 and beyond. The list draws upon ECRI's nearly 50 years of experience evaluating and providing technical assistance on the safety, efficacy, and cost-effectiveness of health technologies.

The topics and tech ECRI found will affect care delivery over the next 12-18 months:

**1. Liquid biopsies.** These are a genetic testing mechanism that uses a patient's blood, plasma, serum or urine, instead of biopsied tissue. Liquid biopsies are easier to obtain and are less risky for the patient. The FDA approved the first liquid biopsy for cancer in June 2016.

**2. Genetic testing and biosensors for opioid addiction.** Genetic tests can help identify individuals at the greatest risk for opioid addiction. Current tests aren't ready for wide use, but are in the pipeline. Also, biosensors (worn like wristwatches) can detect relapse episodes for opioid addicts using skin temperature, electrodermal activity and movement.

**3. Abdominal surgery initiative.** Initiatives that include a web-based, risk-assessment algorithm and patient coaching can prevent poor outcomes and reduce costs of patients facing major abdominal surgery.

**4. Horizon scanners.** Organisations should designate a leader to conduct tests and future planning on technology developments and care processes, as a way to better make decisions on infrastructure, equipment purchases and predict inpatient cases.

**5. Ultraviolet-C LEDs for disinfection.** This latest LED option comes in strips and emits UV-C light with the greatest germicidal effect – and efficient use of power. Developers are also working on sanitising wands and UV disinfecting cabinets for mobile devices.

**6. AI.** The humanoid robot Pepper can interpret human body language and read emotion to respond accordingly to the user, evolving as it learns the person. It can also be programmed to fit an environment.

**7. Robotic surgery.** The latest surgical robot model is designed for complex surgeries. It boasts four robotic arms attached overhead that can

be repositioned without the need to undock the robot. It communicates with a new type of OR table, which allows for automatic repositioning.

**8. Fluorescent endoscopic imaging.** Indocyanine green imaging highlights malignant tissue during an endoscopy that is normally undetectable under regular light, making it easier for physicians to distinguish malignant tumours from healthy tissue.

**9. Immunotherapy and stem cell therapy for Crohn's disease.** Ovasave, a new, personalised T-cell immunotherapy, uses antigen-specific regulatory T-cells generated by in vitro exposure to ovalbumin to treat patients with refractory Crohn's.

**10. Type 1 diabetes vaccines.** There are two types of these vaccines: a therapeutic vaccine to slow or stop the autoimmune attack on insulin-producing islet cells for patients with some residual islet function, and a preventative vaccine to create immune tolerance of islet cells in children with an increased genetic risk of developing the disease.

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