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## Volume 7 - Issue 1, 2012 HIT - Cover Story

### A New System for Continual Defensive Monitoring and Rapid Response:



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#### Savings Lives and Reducing Costs by Extending Best-Practices in Surgery and Critical Care Across the Enterprise

The Prefense® project uses a miniaturised, ergonomic, body-mounted monitor that transmits real-time patient data to computerised records via an HL7 interface. A customised algorithm reduces false alarms and mobilises life-saving care teams when changes in vital signs indicate a medical crisis.

It eliminates delays of traditional practices that record vital signs every few hours. It initiates many treatments before conditions deteriorate. Automatic notification frees clinicians from routinely reviewing retrospective data and allows them to devote more time to patient care. Its advanced algorithm reduces false alarms approximately 90 percent, eliminating "alarm fatigue" that hinders existing systems. Saved time and money can be reallocated to productive use.

Prefense® identifies serious problems (e.g., sleep apnea, respiratory distress) seldom detected when vital signs are measured every few hours. It reduces caregivers' stress by providing continuously reliable information, in contrast to inaccuracies in readings made by different personnel.

This technology uses a body-mounted, wireless data transmitter and unique algorithms to extend best preventive practices beyond the OR and ICU. Resulting patient mobility improves outcomes by reducing blood clots, bedsores, and other iatrogenic problems.

Prefense® is the only surveillance system continuously reporting vital signs of ambulatory patients, summoning rapid response when changes indicate a life-threatening event and creates the market for defensive monitoring.

The obstacles were gaining caregivers' confidence in reliability of alerts, developing facility-specific implementation plans with realistic timetables, and understanding patient acceptance. The main problem was overcoming caregivers' hesitancy to use an automated system for decision support. Network connectivity problems also required resolution.

Expectations have been exceeded with this project. Evaluations indicate 60-80 percent reductions in ICU transfers, declines in morbidity and mortality, and reductions in avoidable readmissions. The project's success will generate similar improvements in electronic health records and home care. Early adapters installed Prefense® in 1-2 clinical units; they are now moving to enterprise-wide deployment. Initial projects took 6-9 months. Impressions are highly favorable: Better quality and lower costs. In addition, nurses and physicians demand the system be retained after a trial period.

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Published on : Tue, 22 May 2012