

**PHILIPS**

Clinical evidence series

# Optimize patient care by automatically identifying subtle signs of deterioration



Identify subtle signs of deterioration before a potential adverse event using automated early warning scoring<sup>1</sup>

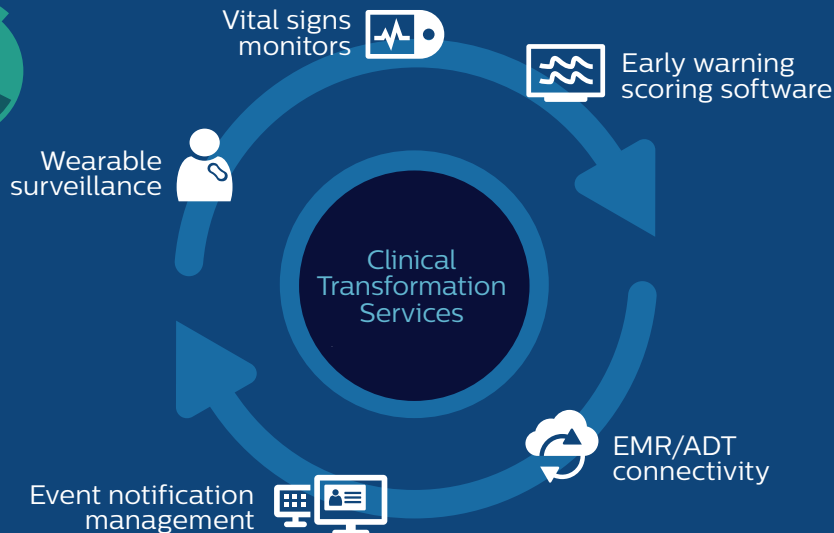


Help nursing staff, rapid response and medical emergency teams respond earlier with actionable notifications<sup>2</sup>



Reduce ICU transfers and readmissions, adverse events, as well as length of stay<sup>3</sup>

## Philips IntelliVue Guardian - a comprehensive solution to help address clinical deterioration and patient care



Case study:

### Effect of an automated notification system for deteriorating ward patients<sup>4</sup>

A prospective clinical study conducted in two general wards of a hospital in the United Kingdom using Philips IntelliVue Guardian early warning scoring, IntelliVue cableless measurements and IntelliVue MP5SC vital signs monitors showed the following results. Philips Clinical Transformation Services customized the solution deployment with escalation procedures and provided dedicated on-site training.

**+22%**  
notification of the Rapid Response Team (RRT)

**-35%**  
Severe Adverse Events

**+61%**  
notifications that trigger interventions (fluid bolus, antibiotics, bronchodilators)

**-95%**  
Sepsis

**-10%**  
Do-Not-Attempt-Resuscitation after 1st RRT notification

**-24%**  
ICU readmission rate

**-86%**  
Cardiopulmonary Arrests

**-74%**  
ICU mortality of patients transferred to the ICU

**-20%**  
hospital mortality, including readmissions

The study results are not necessarily indicative of the offering performance, and are not meant to infer any marketing claims related to safety or effectiveness.

## References

1. Brindley, P.G., et al. Predictors of survival following in-hospital adult cardiopulmonary resuscitation, *CMAJ*. AUG. 20, 2002; 167 (4).  
  
Hillman, K. et al. MERIT study investigators Introduction of the medical emergency team (MET) system: a cluster-randomised controlled trial. *Lancet*. 2005;365(9477):2091–2097.  
  
Franklin C, Mathew J. Developing strategies to prevent in hospital cardiac arrest: analyzing responses of physicians and nurses in the hours before the event. *Crit Care Med*. 1994;22(2):244-247.  
  
HealthGrades, Inc: Third Annual Patient Safety in American Hospitals Study. April 2006.
2. Fuhrmann, L. et al. Incidence, staff awareness and mortality of patients at risk on general wards. *Resuscitation*. 2008 Jun;77(3):325–30.  
  
Joel S. Weisman, Ph.D., et al, *Medical Care*, 45(5): 448–454, May. 2007.  
  
Needleman, J., Buerhaus, P., Pankratz, V. S., Leibson, C. L., Stevens, S. R., & Harris, M. (2011). Nurse staffing and inpatient hospital mortality. *New England Journal of Medicine*, 364, 1037–1045.  
  
Ansell, H. et al. Why don't nurses consistently take patient respiratory rates? *Br J Nurs*. 2014 Apr 24–May 7;23(8):414–8.
3. Barwise A, et al. Delayed Rapid Response Team Activation Is Associated With Increased Hospital Mortality, Morbidity, and Length of Stay in a Tertiary Care Institution. *Crit Care Med*. 2016 Jan;44(1):54–63.  
  
Jäderling G et al. ICU admittance by a rapid response team versus conventional admittance, characteristics, and outcome. *Crit Care Med*. 2013 Mar;41(3):725–31.  
  
van Galen LS, et al. Delayed Recognition of Deterioration of Patients in General Wards Is Mostly Caused by Human Related Monitoring Failures: A Root Cause Analysis of Unplanned IC Admissions. *PLoS ONE*. 2016; 11(8).
4. Subbe et al. Effect of an automated notification system for deteriorating ward patients on clinical outcomes. *Critical Care* (2017) 21:52.

