

From 2,5 million data points to an 80% reduction in the number of resuscitations in a 542 bed acute care hospital.

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Keywords: big data & digital health – innovation & technology

1. INTRODUCTION

AZ Maria Middelaes is a Belgian private non-profit 542 bed acute care hospital.

Despite the financial burden for the hospital in the current Belgian fee-for-service healthcare model, we have implemented a hospital-wide assessment and monitoring process for vital parameters for all patients resulting in an 80% reduction in the number of resuscitations in our hospital. This clinical outcome is the result of the introduction of new health technology, data analysis and reporting into actionable clinical dashboards with automated alerting, an open no-fault culture on the floor, empowerment and supportive leadership. The methodology is based on the Institute of Health Improvement “Protect 5 million lives” program and aligns perfectly with our general continuous improvement and innovation strategy with better survival, avoiding complications, restoring functional status, being treated with dignity and respect and patient experience as key drivers.

2. MATERIALS AND METHODS

Based on the measurement and registration of five physiological parameters – blood pressure, heart frequency, respiration rate, body temperature and saturation – and the level of consciousness an Early Warning Score (EWS) is established three times a day for all admitted patients. When the EWS score goes up, so does the frequency of measurements. The frequency can be as high as every 30 minutes. On a yearly basis the hospital collects more than 2,5 million data points.

This close monitoring allows us to identify patients whose condition is evolving into

critical illness up to 8 hours earlier and gives us the time to investigate and discuss treatment options amongst the caregivers and with relatives. In those cases a specifically trained ICU rapid response nurse is alerted and joins the patients care team, as well as an ICU physician in case of escalation.

3. RESULTS AND DISCUSSION

The successful hospital wide implementation of an assessment and monitoring process for vital parameters for all patients resulted in an 80% reduction in the number of resuscitations and therefore reduces unexpected death in the hospital. Trend analysis in the EWS score allows an earlier discovery of worsening patient conditions with the possibility of an appropriate intervention.

Additionally, by not just transferring patients immediately to ICU, but having an ICU rapid response nurse joining the staff on our general wards and coaching the staff in caring for and treating the patient we continuously raise awareness and knowledge on critical care conditions. This also implies important cost-savings for the patient and social security system by avoiding a number of transfers of patients to more expensive ICU beds.

AZ Maria Middelaes is uniquely positioned in Belgium by applying general EWS monitoring for all patients. By implementing this as ‘standard of care’ we lead the way in raising the bar for qualitative and safe healthcare. We aim to provide data to the government to support the healthcare reform and the introduction of a pay-for-performance financing model based on clinical outcome measures.