



## Service Priorities and Programmes Electronic Presentations

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### **The Use of Neonatal Early Warning System (NEWS) in a General Paediatric Ward**

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#### **Introduction**

Neonates admitted to hospital are particularly at risk of deterioration. Early warning system (EWS) is a simple bedside tool which can provide an objective measurement to highlight unwell patients or recognize patients with potential for deterioration. EWS works well with adults for many years. In paediatric population, the use of EWS increases in last 10 years. However, system designed for children cannot be extrapolated for use in neonates, yet the research on the use of EWS in neonates is sparse. The appropriate use of EWS is important and it needs to be validated in the setting which it is going to apply. We aim at studying the use of Neonatal Early Warning System (NEWS) in our setting, a general paediatric ward with admission of infants less than 2 months old.

#### **Objectives**

To design and study the use of an objective clinical early warning system to identify unwell neonates, by using routinely collected bedside observations.

#### **Methodology**

The literature search and review identified the original NEWS tool by Dr D Roland of Leicester University as template. The original chart was modified and incorporated into our observation chart. Staff education and training were followed by a pilot run in May 2015. All young infants (<2 months old) admitted to our general paediatric ward from June to August 2015 were included for analysis.

#### **Result**

Within the study period, there were 164 neonates admitted. 151 were “well neonates” with the discharge diagnosis of “neonatal jaundice” or “newborn observation” (irritability, jitteriness, feeding problem etc.). 13 neonates (7.9%) were classified as “unwell neonates” by the potential sinister discharge diagnosis including infection (bronchiolitis, upper respiratory tract infection) or structural abnormalities (Hirschsprung's disease, diaphragmatic hernia, laryngomalacia). Using “any color” in the NEWS chart as triggering, the sensitivity of identifying unwell neonates was 92%

while the specificity was 45%. The positive predictive value was 12.6% and the negative predictive value was 92%. The nurse satisfaction survey showed favorable result. The mean score on the usefulness and ease of use was > 3 on a 4-point Likert scale. CONCLUSIONS: The Neonatal Early Warning System is a practical and user friendly tool in general paediatric ward. It can reflect adverse changes in physiological parameters early and help targeting at risk neonates more effectively.