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Title: The use of technology to reduce errors in clinical practice with a focus on electronic observations

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Title

The use of technology to reduce errors in clinical practice with a focus on electronic observations

Introduction

This presentation is based on the personal experience of the two authors in their roles to uphold patient safety. A patient's pulse, respirations, blood pressure, and body temperature are essential in identifying the patient's baseline status and to detect any clinical deterioration. These vital sign monitoring is a fundamental component of nursing care. To be effective these parameters must be measured consistently and recorded accurately. Experience has shown that omissions or commissions in undertaking these tasks may result in adverse outcomes for patients

Discussion

The measuring and recording vital signs fall within the tasks of nurses. Blood pressure, pulse and temperature measurements are to a large extent dependent on the use of digital equipment. The measurement of the respiratory rate is dependent on the nurse practitioner counting the chest excursions and using watches for a 30 – 60 seconds count. The latter comes across as a mundane task and there is evidence from clinical incident investigations that these are not recorded accurately. These figures are recorded in the observation chart.

The use, non-use or misinterpretation of this information became apparent when it became known that deteriorating patients were not being adequately identified in hospitals, not just in our own hospital setting but globally. In addition, many different observation charts to record routine physiological measurements were in use across the NHS. There was no standardised approach to the design of observation charts. This variation was an obstacle to standardised training, and engendered a lack of familiarity with clinical data recording when staff or patients relocated to different clinical areas or different hospitals. The Royal College of Physicians came up with the national early warning scores (NEWS) for adults in 2012 to bring about some standardisation.[1] Each vital sign was allocated a figure depending on normalcy or variance from normalcy. Nurses were expected to undertake the summation of these values and record them on a pictorial chart that provided a panoramic view of consecutive readings. A score of 5 was set as a trigger for the nurses to call for medical evaluation of patients.

Investigations carried out in the authors' clinical settings into adverse incidents have shown areas of errors dependent on human factors. These include nurses' failure to reliably measure,

calculate, record, and interpret vital signs, failure to recognise the importance of vital signs (especially respiratory monitoring) and failure to escalate a deteriorating patient.

All too often physiologic abnormalities that develop up to 24 hours prior to death are either undocumented or unrecognized, as evidenced by a well-publicized case in which a patient died from haemorrhagic shock after major abdominal surgery, either because blood pressure was not monitored or changes in vital signs were not interpreted properly.

These ought to be the most reliable data in a patient's chart, but they are not. Abundant research indicates that vital signs are not consistently assessed, recorded, or interpreted. These lapses interfere with appropriate and timely interventions for deteriorating patients. All too often physiologic abnormalities that develop up to 24 hours prior to death are either undocumented or unrecognised, as evidenced by a well-publicised case in which a patient died from haemorrhagic shock after major abdominal surgery, either because blood pressure wasn't monitored or changes in vital signs weren't interpreted properly.[2]

The future

The introduction of electronic early warning system eliminates the dependency on human factors and the move from paper-based records to automatically calculated digital recordings on portable electronic tablet devices.

Conclusion

The use of electronic observation tools will eliminate the dependency on human factors. New generation monitors are linked to the critical team and trigger when the defined threshold for trigger is crossed. The authors' experience have shown a reduction in the number of missed deteriorating patients and a reduction in call out of the critical outreach team. This technological advancement has reduced errors in clinical practice and enhanced patient safety.

References

[1] Royal College of Physicians. National Early Warning Score (NEWS) 2: Standardising the assessment of acute-illness severity in the NHS. Updated report of a working party. London: RCP, 2017.

[2] Rose, L and Clarke, S P. Vital Signs. American Journal of Nursing: May 2010 - Volume 110 - Issue 5, p 11
doi: 10.1097/01.NAJ.0000372049.58200.da
http://journals.lww.com/ajnonline/Fulltext/2010/05000/Vital_Signs.2.aspx (Accessed - 4 January 2018)