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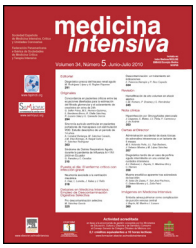

ORIGINAL

Audits in real time for safety in critical care: Definition and pilot study

G. Sirgo Rodríguez[a,*], M. Olona Cabases[b], M.C. Martin Delgado[c], F. Esteban Reboll[a], A. Pobo Peris[a], M. Bodí Saera[a], ART-SACC study experts[◊]

[a] *Intensive Care Unit, Hospital Universitari Joan XXIII, Institut d'Investigació Sanitària Pere Virgili, Universitat Rovira i Virgili, Tarragona, Spain*
[b] *Preventive Medicine Department, Hospital Universitari Joan XXIII, Institut d'Investigació Sanitària Pere Virgili, Universitat Rovira i Virgili, Tarragona, Spain*
[c] *Intensive Care Unit, Torrejón University Hospital, Torrejón de Ardoz, Madrid, Spain*

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KEYWORDS
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Abstract Adverse events significantly impact upon mortality rates and healthcare costs.
Purpose: To design a checklist of safety measures based on relevant scientific literature, apply random checklist measures to critically ill patients in real time (safety audits), and determine its utility and feasibility.
Methods: A list of safety measures based on scientific literature was drawn up by investigators. Subsequently, a group of selected experts evaluated these measures using the Delphi methodology. Audits were carried out on 14 days over a period of one month. Each day, 50% of the measures were randomly selected and measured in 50% of the randomized patients. Utility was assessed by measuring the changes in clinical performance after audits, using the variable improvement proportion related to audits. Feasibility was determined by the successful completion of auditing on each of the days on which audits were attempted.
Results: The final verified checklist comprised 37 measures distributed into 10 blocks. The improvement proportion related to audits was reported in 83.78% of the measures. This proportion was over 25% in the following measures: assessment of the alveolar pressure limit, checking of mechanical ventilation alarms, checking of monitor alarms, correct prescription of the daily treatment orders, daily evaluation of the need for catheters, enteral nutrition monitoring, assessment of semi-recumbent position, and checking that patient clinical information is properly organized in the clinical history. Feasibility: rounds were completed on the 14 proposed days.

* Corresponding author.
E-mail address: gsirgoluanco@yahoo.es (G. Sirgo Rodríguez).
◊ ART-SACC study experts are listed in Appendix A.

Conclusions: Audits in real time are a useful and feasible tool for modifying clinical actions and minimizing errors.

PALABRAS CLAVE
Seguridad;
Cuidados intensivos;
Auditorías en tiempo real

Análisis aleatorios de seguridad en medicina intensiva: definición y estudio piloto

Resumen Los eventos adversos impactan significativamente en la mortalidad y costes sanitarios.
Objetivos: Elaborar un listado de verificación de medidas de seguridad basadas en la literatura científica más relevante, aplicarlo en tiempo real y aleatoriamente (rondas de seguridad) y determinar su utilidad y factibilidad.
Diseño: Los investigadores desarrollaron un listado de medidas de seguridad basado en la literatura científica. Posteriormente, mediante el método Delphi un grupo de expertos consensuaron las medidas. Las auditorías fueron realizadas en 14 días durante un mes. Cada día se seleccionaron aleatoriamente el 50% de las variables y se midieron en el 50% de los pacientes. La utilidad se determinó midiendo las modificaciones en la actuación clínica usando la variable «proporción de mejora relacionada con las auditorías». La factibilidad fue determinada por la capacidad de realizar los análisis cada día que fueron previstos.
Resultados: El listado de verificación estuvo formado por 37 medidas distribuidas en 10 bloques. En el 83,78% de las medidas se produjeron modificaciones después de las rondas. La proporción de mejora relacionada con las rondas fue superior al 25% en las siguientes medidas: evaluación del límite de presión alveolar, revisión de las alarmas de la ventilación mecánica, revisión de las alarmas del monitor, prescripción correcta de las órdenes de tratamiento, evaluación diaria de la necesidad de catéteres, monitorización de la nutrición enteral, posición semiincorporada e información clínica del paciente. Factibilidad: las rondas fueron completadas los 14 días que se propusieron.
Conclusiones: Las rondas de seguridad aleatorizadas son una herramienta útil y factible para modificar actuaciones clínicas minimizando los errores.

Introduction

It is known that the occurrence of adverse events significantly impacts on mortality rates and health costs.[1] Therefore, clinical safety is a priority in care.[2–4]

The critically ill patient is complex and frequently demands for the implementation of a great number of decisions and procedures in short periods of time. This increases the likelihood of errors, and therefore adverse events.[5] Although errors, categorized as those of commission or those of omission,[6] can be made anywhere in the hospital, critical care patients are among those least able to withstand the consequences of a mistake.[7] Recent studies have highlighted the presence of multiple errors in intensive care. For example, Garrouste-Orgeas et al.[8] reported that adverse events in the intensive care unit (ICU) have considerable prognostic significance, with a threefold increase in mortality among patients who experience more than two such events. Furthermore, Valentin et al.[9] conducted a cross-sectional, observational study, carried out over 24 h in 205 ICUs, in which 39 adverse events were described per 100 patients per day. Organ failure, a greater intensity in level of care and time of exposure were all related to these events. The same group[10] reported that more than half of the errors were classified as errors of omission. These errors, usually less visible, may be associated to increased morbidity and mortality and are usually related to a lack of adherence to recommendations made based on scientific evidence. Often, in the critical care setting, there is a discrepancy between these recommendations and clinical practice.[11] In Spain, the SYREC[12] study also reported an increased risk of incidents in patients admitted to ICU (no-harm events and adverse events). Most incidents were considered avoidable.

Several methods have been described involving critical care patients to detect adverse events, ranging from the use of observers,[13] to self-reporting systems or retrospective chart reviews.[14] These methods tend to focus on the presence of adverse events and are not sensitive for routine monitoring of the areas of care where errors are most likely to occur.[15,16] Some authors have investigated alternative, proactive methods for analysing the safety of critical patients.[17] Such a methodology, which is less time consuming and provides rapid feedback, allows for immediate changes in practice where it might be necessary.

The main objectives of this study were to develop a checklist of safety measures (SMs) specifically designed for critically ill patients and based on sound scientific literature, and to apply them in real time (randomizing variables and patients) during routine clinical work (audits), with the aim of minimizing errors of both commission and omission, and evaluating the utility and feasibility of the procedure.