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Checklist use in ICUs: a French national survey

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Dear Editor,

At the bedside, clinical guidelines are fully complied with in 24 % of critically ill patients [1]. The checklist is a document built to increase adherence to the necessary security procedural steps. First developed in aerospace, it was subsequently used in intensive care units (ICU) with encouraging results [2–4]. Although checklists may reduce omission errors for critically ill patients, their practice is poorly reported. We conducted a French national survey to describe the use of checklists in ICUs. After local

ethical approval, all French public sector ICUs (Fédération Hospitalière de France) were directly called by phone. The demographic and specific characteristics of the ICU were obtained from the matron, and the existence of a checklist for 6 following items: central venous catheter insertion, orotracheal intubation or tracheostomy related procedures, in-hospital transfer for critically ill patients, prevention of ventilator-acquired pneumonia (VAP), and weaning from mechanical ventilation. Participation was voluntary. A total of 304 ICUs were called, and 298 (98 %) agreed to participate in the study. Of these, 180 (60 %) were mixed ICUs, 75 (25 %) were surgical ICUs, and 43 (15 %) were medical ICUs. The mean bed capacity was 12 (8–15), and the number of beds per nurse ratio during the day and the night were 2.9 (2.5–3.1) and 3.2 (2.8–3.6), respectively. The prescriptions were computerized in 111 (37 %) ICUs, while 91 (31 %) ICUs offered a computerized nursing supervision. Table 1 describes the checklist use for each item, according to the type of ICU.

Checklists are used in medicine as a simple tool to increase the quality of care. Our results emphasize that checklists are scarcely used in French

ICUs, despite recent publications showing a decrease in morbidity and hospital length of stay [2, 3]. Therefore, increasing the use of checklists is an opportunity to improve ICU care in France.

Moreover, the manner in which checklists are implemented is of great consequence in the care of ICU patients [3]. Their availability is not sufficient, and a validation process seems essential. In our study, we have not found any relationship between the number of beds per nurse and checklist implementation, showing that checklist use in ICU does not seem related to the human costs. Human [3] or computer prompting [5], and simulation training for ICU teams [4] could provide a more effective approach to checklist implementation. The cost impact of checklist implementation was not evaluated in the study. This point could be a limitation for their use.

Our study did not evaluate the clinical impact of those checklists, because the incidences of ICU complications were not recorded. Large studies comparing the impact of checklist use in ICU are mandatory to definitively evaluate the clinical cost/benefit ratio.

In conclusion, checklists are scarcely used in French ICUs.

Table 1 Description of the checklist use in the ICUs

	All ICUs (n = 298)	Mixed ICUs (n = 180)	Surgical ICUs (n = 75)	Medical ICUs (n = 43)	P value ^a
Central venous catheter insertion	175 (59)	110 (61)	41 (55)	24 (56)	0.581
Orotracheal intubation	114 (38)	74 (41)	24 (32)	16 (37)	0.390
Tracheostomy	99 (33)	62 (34)	20 (27)	17 (40)	0.309
In-hospital transfer	91 (31)	56 (31)	22 (29)	13 (30)	0.960
Prevention of ventilator-acquired pneumonia	29 (10)	21 (12)	3 (4)	5 (12)	0.153
Weaning from mechanical ventilation	46 (15)	30 (17)	5 (6)	11 (26)	0.018

Values are expressed as number (percentage)

^a P value obtained by Chi-square test against mixed, surgical and medical ICUs

Communication and computer prompting could be developed to improve their implementation.

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Conflicts of interest The authors declare that they have no conflicts of interest.

Ethical standard This study was carried out in the context of a quality improvement project to improve quality of care in ICU. The institutional review board of Caen University Hospital approved the study.

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