# Quality assessment of adult intensive care services: application of a tool adjusted to the reality of low-income countries

Avaliação da qualidade de serviços de medicina intensiva adulto: aplicação de ferramenta ajustada à realidade de países de baixa renda

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SECTION A: H	OSPITAL AND ICU DATA
1 - Hospital:	
2 - Town/State:	
3 - Hospital funding mechanism:	( ) Public ( ) Private ( ) Mixed ( ) Philanthropic ( ) Military
4 - Number of inpatient beds (exclude beds for observation and "day-hospital"):	
5 - Availability of a training program at the ICU or hospital (e.g., graduate or residency program):	() 0 No () 1 Yes
6 - University hospital:	( ) 0 No ( ) 1 Yes
7 - Number of ICUs in the hospital:	
8 - Identity of the participating ICU:	
9 - Main source of payment for ICU admissions (mark the option that represents the source accounting for most payments for ICU admissions):	( ) 1 Public health system ( ) 2 Health insurance companies ( ) 3 Private ( ) 4 Other
10 - Type of ICU (mark the option that represents the ICU's main focus or the most prevalent type of patients):	( ) 1 General ( ) 2 Cardiological ( ) 3 Surgical ( ) 4 Neurological ( ) 5 Trauma ( ) 6 Oncological ( ) 7 Other
11 - Total number of beds in the ICU:	
12 - Total number of beds currently functioning at the ICU:	
SECTION B: S	TRUCTURE INDICATORS
B.1 - P	hysical structure
13 - Availability of isolation beds:	( ) 0 No
	( ) 1 Yes, ratio < 1:10 beds
	( ) 2 Yes, ratio ≥ 1:10 beds
14 - Availability of a room for interviews with relatives or other attendants:	( ) 0 No
	( ) 1 Yes, multifunctional, not exclusively for this purpose
	( ) 2 Yes, exclusively for this purpose
15 - Availability of the waiting room for attendants and visitors:	( ) 0 No
	( ) 1 Yes, shared with other services
	( ) 2 Yes, exclusively for the ICU
16 - Beds allow for patient privacy when needed (e.g., during baths); obstetrics: exclude screens:	( ) 0 No
	( ) 1 Yes, in some beds
	( ) 2 Yes, in all beds
TOTAL SCORE FOR B.1 (MAXIMUM: 8):	
B.2 - H	luman resources

( ) 0 No

( ) 1 Yes, outsourced

( ) 2 Yes, in-house

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17 - Availability of a clinical engineering service at the hospital:

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18 - Availability of a medical technical manager in the ICU:	( ) 0 No
	( ) 1 Yes, shared with other hospital units
	( ) 2 Yes, exclusive to the ICU
19 - Medical technical manager is an accredited specialist in adult intensive care medicine:	( ) 0 No ( ) 2 Yes
20 - Availability of a nursing coordinator in the ICU:	( ) 0 No
	( ) 1 Yes, shared with other hospital units
	( ) 2 Yes, exclusive to the ICU
21 - Nursing coordinator participated in a specialization course or is accredited in	( ) 0 No
intensive care nursing:	( ) 1 No, but currently attending
	( ) 2 Yes, already completed
22 - Availability of a physical therapy coordinator in the ICU:	( ) 0 No
	( ) 1 Yes, shared with other hospital units
	( ) 2 Yes, exclusive to the ICU
23 - Physical therapy coordinator participated in a specialization course or is	( ) 0 No
accredited in intensive physical therapy:	( ) 1 No, but currently attending
	( ) 2 Yes, already completed
24 - Daily availability of regular attending physicians in the ICU:	( ) 0 No
	( ) 1 Yes, in at least one shift (day or night)
	( ) 2 Yes, in the day and night shifts
25 - Regular attending physicians are accredited specialists in intensive care	( ) 0 No
medicine:	( ) 1 Yes, some
	( ) 2 Yes, all of them
26 - Ratio of regular attending physicians per bed per shift (relative to the shift	( ) 0 Unavailable
with the poorest ratio):	( ) 1 < 1:10 beds
	( ) $2 \ge 1:10$ beds
27 - Ratio of physicians on duty per bed per shift (relative to the shift with the	( ) $0 < 1:10 \text{ beds}$
poorest ratio):	( ) $2 \ge 1:10$ beds
28 - Ratio of nurses on duty per bed per shift (relative to the shift with the poorest	( ) 0 Unavailable
ratio):	( ) $1 < 1:10 \text{ beds}$
	( ) $2 \ge 1:10$ beds
29 - Ratio of physical therapists per bed per shift (relative to the shift with the poorest ratio):	( ) 0 Unavailable
	( ) $1 < 1:10 \text{ beds}$
	( ) $2 \ge 1:10$ beds
30 - Ratio of nursing technicians per bed per shift (relative to the shift with the	( ) $0 < 1:2$ beds
poorest ratio):	() $2 \ge 1.2$ beds
TOTAL SCORE FOR B.2 (MAXIMUM: 28):	
B.3 - Continued	education and training
31 - Availability of a systematized and regular ICU-centered training program for professionals at the institution before assignment to the unit (e.g., integration programs):	( ) 0 No
	( ) 1 Yes, but restricted to some professional categories
	( ) 2 Yes, for doctors, nurses and physical therapists
32 - Availability of and regular participation in a continued education program for the multi-professional staff (doctors, nurses, and physical therapists) after assignment to the unit:	( ) 0 No or < 4 times per year
	( ) 1 Yes, at least 4 times per year
	( ) 2 Yes, every month
	continue

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TOTAL SCORE FOR B.3 (MAXIMUM: 4):		
B.4 - Protocols and routines		
33 - Availability of a written protocol or routine with the criteria for admission to	( ) 0 No	
and discharge from the unit:	( ) 1 Yes, but common to all the hospital ICUs or the hospital as a whole	
	( ) 2 Yes, specific to the unit	
34 - Availability of a written protocol or routine for glycemic control:	( ) 0 No	
35 - Availability of a written protocol or routine for pain management:	( ) 0 No ( ) 2 Yes	
36 - Availability of a written protocol or routine for sedation:	( ) 0 No ( ) 2 Yes	
37 - Availability of a written protocol or routine for the use of blood components:	( ) 0 No	
38 - Availability of a written protocol or routine for a lung-protective ventilatory strategy:	( ) 0 No ( ) 2 Yes	
39- Availability of a written protocol or routine for the prevention of ventilator-associated pneumonia (mark "yes" when unit uses "bundles"):	( ) 0 No ( ) 2 Yes	
40 - Availability of a written protocol or routine for the prevention of catheter- related bloodstream infection (mark "yes" when the unit uses "bundles"):	( ) 0 No ( ) 2 Yes	
41 - Availability of a written protocol or routine for the use of antibiotics:	( ) 0 No ( ) 2 Yes	
42 - Availability of written protocol or routine for gastrointestinal bleeding caused by stress:	( ) 0 No ( ) 2 Yes	
43 - Availability of a written protocol or routine for the prevention of venous thromboembolism:	( ) 0 No ( ) 2 Yes	
44 - Availability of a written protocol or routine for standard preventive and	( ) 0 No	
transmission-based (contact, droplets, aerosols) preventive measures:	( ) 1 Yes, but formulated by the ICU or the HICC alone	
	( ) 2 Yes, formulated jointly by the ICU and the HICC	
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TOTAL SCORE FOR B.4 (MAXIMUM: 24):	aterial resources	
45 - Availability of a electrocardiography device:	( ) 0 No or shared with other units	
40 - Availability of a electrocardiography device.	( ) 1 Yes, < 1 per 10 beds	
	( ) 2 Yes, ≥ 1 per 10 beds	
46. Availability of a crash cart:	( ) 0 No or shared with other units	
46 - Availability of a crash cart:	( ) 1 Yes, < 1 per 5 beds	
	( ) 2 Yes, ≥ 1 per 5 beds	
47 - Availability of a defibrillator/cardioverter:	( ) 0 No or shared with other units	
	( ) 1 Yes, < 1 per 5 beds	
	( ) 2 Yes, ≥ 1 per 5 beds	
48 - Availability of a temporary transvenous cardiac pacing generator:		
	( ) 0 No or shared with other units ( ) 1 Yes, < 1 per 10 beds	
40. Availability of a transport ventilator:	( ) 2 Yes, ≥ 1 per 10 beds ( ) 0 No or shared with other units	
49 - Availability of a transport ventilator:		
	( ) 1 Yes, < 1 per 10 beds	
50 - Availability of clocks and calendars visible from all of the beds:	( ) 2 Yes, ≥ 1 per 10 beds	
	( ) 1 Ves from some hode	
	( ) 1 Yes, from some beds	
	( ) 2 Yes, from all beds	

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TOTAL SCORE FOR B.5 (MAXIMUM: 12):  TOTAL SCORE FOR SECTION B (B.1 + B.2 + B.3 + B.4 + B.5):		
SECTION C: PROCESS INDICATORS		
C.1 - Sa	afety processes	
51 - Visitors and attendants are given orientation to actions that will facilitate	( ) 0 No	
the prevention and control of infections based on the Hospital Infection Control	( ) 1 Yes, at least verbally	
Committee's (HICC's) recommendations:	( ) 2 Yes, verbally and in printed format	
52 - ICU and HICC provide joint training to improve the adherence of the multi-	( ) 0 No	
professional staff to routine hand washing:	( ) 1 Yes, but not at established intervals	
	( ) 2 Yes, at established intervals	
53 - HICC provides the ICU multi-professional staff reports on the consolidated	( ) 0 No or at intervals longer than three months	
results of infection surveillance and the sensitivity profile of microorganisms:	( ) 1 Yes, at least four times per year	
	( ) 2 Yes, every month	
54 - ICU monitors adverse and sentinel events:	( ) 0 No ( ) 2 Yes	
55 - ICU performs a systematized analysis of adverse and sentinel events using	( ) 0 No	
standardized tools aimed at the identification of their causes and the elaboration	( ) 1 Yes, but at intervals > 1 month	
of preventive strategies:	( ) 2 Yes, every month	
56 - ICU monitors and evaluates its technical-operational performance:	( ) 0 No	
	( ) 1 Yes, but at intervals > 1 month	
	( ) 2 Yes, every month	
57 - ICU communicates to the multi-professional staff the results of the	( ) 0 No	
monitoring and evaluation of its technical-operational performance:	( ) 1 Yes, but at intervals > 1 month	
	( ) 2 Yes, every month	
TOTAL SCORE FOR C.1 (MAXIMUM: 14):		
C.2 - V	/ork processes	
58 - Periodicity of revisions made to protocols and routines:	( ) 0 Are not revised or are unavailable	
	( ) 1 > 12 months	
	( ) 2 Once per year	
59 - Multidisciplinary (bedside or rounds-style) discussions of current cases are performed in the ICU:	( ) 0 No	
	( ) 1 Yes, including doctors and nurses	
	( ) 2 Yes, including doctors, nurses and physical therapists at least	
60 - Periodicity of multidisciplinary (bedside or rounds-style) discussions of current cases:	( ) $0 < 3$ times per week	
	( ) $1 \ge 3$ and $\le 6$ times per week	
	( ) 2 Every day	
61 - HICC participates in (bedside or rounds-style) multidisciplinary discussions of current cases at ICU:	( ) 0 No	
	( ) 1 Yes, but only upon request	
	( ) 2 Yes, at least once per week	
62 - ICU conducts prescheduled meetings with relatives or attendants of patients to provide information on their state of health and the care they need (do not consider information provided during regular visiting times):	( ) 0 No	
	( ) 1 Yes, at least once during stay	
	( ) 2 Yes, more than once during stay	
63 - ICU performs evaluations using a system of classification of nursing care needs (e.g., TISS, NAS, Fugulin):	( ) 0 No ( ) 2 Yes	

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Continuation	
64 - Multi-professional notes of the care provided in the ICU are made in the patients' clinical records:	( ) 0 No
	( ) 1 Yes, but only doctors and nurses are allowed
	( ) 2 Yes, by doctors, nurses and physical therapists at minimum
65 - Relatives or attendants of patients can stay in the ICU:	( ) 0 No or only at visiting times
	( ) 1 Only at visiting times, which might be modified on an individual basis
	( ) 2 Free access 24/7
66 - ICU requires a signature on an informed consent form for the procedures most frequently performed in the ICU:	( ) 0 No ( ) 2 Yes
67 - ICU assesses the satisfaction of patients and relatives:	( ) 0 No
	( ) 1 Yes, but not routinely or in a systematized manner
	( ) 2 Yes, routinely and in a systematized manner
TOTAL SCORE FOR C.2 (MAXIMUM: 20):	
TOTAL SCORE FOR SECTION C (C.1 + C.2):	
MAXIMUM: 34	
SECTION D: C	DUTCOME INDICATORS
68 - Standardized mortality rate in the past 12 months (or other available period	( ) 0 Not measured
of time):	( ) 1 > 1.0
	( ) 2 ≤ 1.0
	( ) 9 Not reported
69 - Unplanned extubation rate in the past 12 months (or other available period	( ) 0 Not measured
of time):	( ) 1 > 15%
	( ) 2 ≤ 15%
	( ) 9 Not reported
70 - Average length of stay in the ICU, in days, in the past 12 months (or other	( ) 0 Not measured
available period of time):	( ) 1 > 7 days
	( ) $2 \le 7$ days
	( ) 9 Not reported
71 - ICU readmission rate in the past 12 months (or other available period of	( ) 0 Not measured
time):	( ) 1 > 10%
	( ) 2 ≤ 10%
	( ) 9 Not reported
72 - Rate of ventilator-associated pneumonia (VAP) in the past 12 months (or	( ) 0 Not measured
other available period of time):	( ) 1 $>$ 16 cases per 1,000 days of mechanical ventilation
	( ) $2 \le 16$ cases per 1,000 days of mechanical ventilation
	( ) 9 Not reported
73 - Rate of catheter-related bloodstream infection (CRBI) in the past 12 months (or other available period of time):	( ) 0 Not measured
	( ) 1 > 12 per 1,000 central line-days
	( ) $2 \le 12$ per 1,000 central line-days
	( ) 9 Not reported
74 - Rate of catheter-associated urinary tract infections (CA-UTI) in the past 12 months (or other available period of time):	( ) 0 Not measured
	( ) 1 > 6 per 1,000 catheter-days
	( ) $2 \le 6$ per 1.000 catheter-days
	( ) 9 Not reported
TOTAL SCORE FOR SECTION D (MAXIMUM: 14):	
OVERALL TOTAL SCORE FOR SECTIONS B + C + D (MAXIMUM: 124):	