

Infection prevention and control practices in neonatal units participating in the NeoIPC project

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BACKGROUND

Effective IPC (infection prevention and control) programmes are essential to reduce healthcare associated infections (HAIs). To guide their implementation, the WHO IPC Assessment Framework (IPCAF) provides a standardized tool for evaluation.

We aimed to assess current IPC practices among neonatal intensive care units (NICUs) in the NeoIPC project.

METHODS

A standardized questionnaire on IPC practices was answered by each NICU participating in the NeoIPC colonization assessment study, either as part of site-based activities in preparation for a cluster randomized controlled trial. The IPC questions were then mapped to the WHO IPC core components (1) IPC programs, (2) guidelines, (3) training, (4) surveillance and (6) audits. Questions from core components 5,7 and 8 were not included in the site questionnaire. However, the IPC questionnaire included neonatology-specific infection prevention aspects, such as feeding practices, which are not part of the IPCAF.

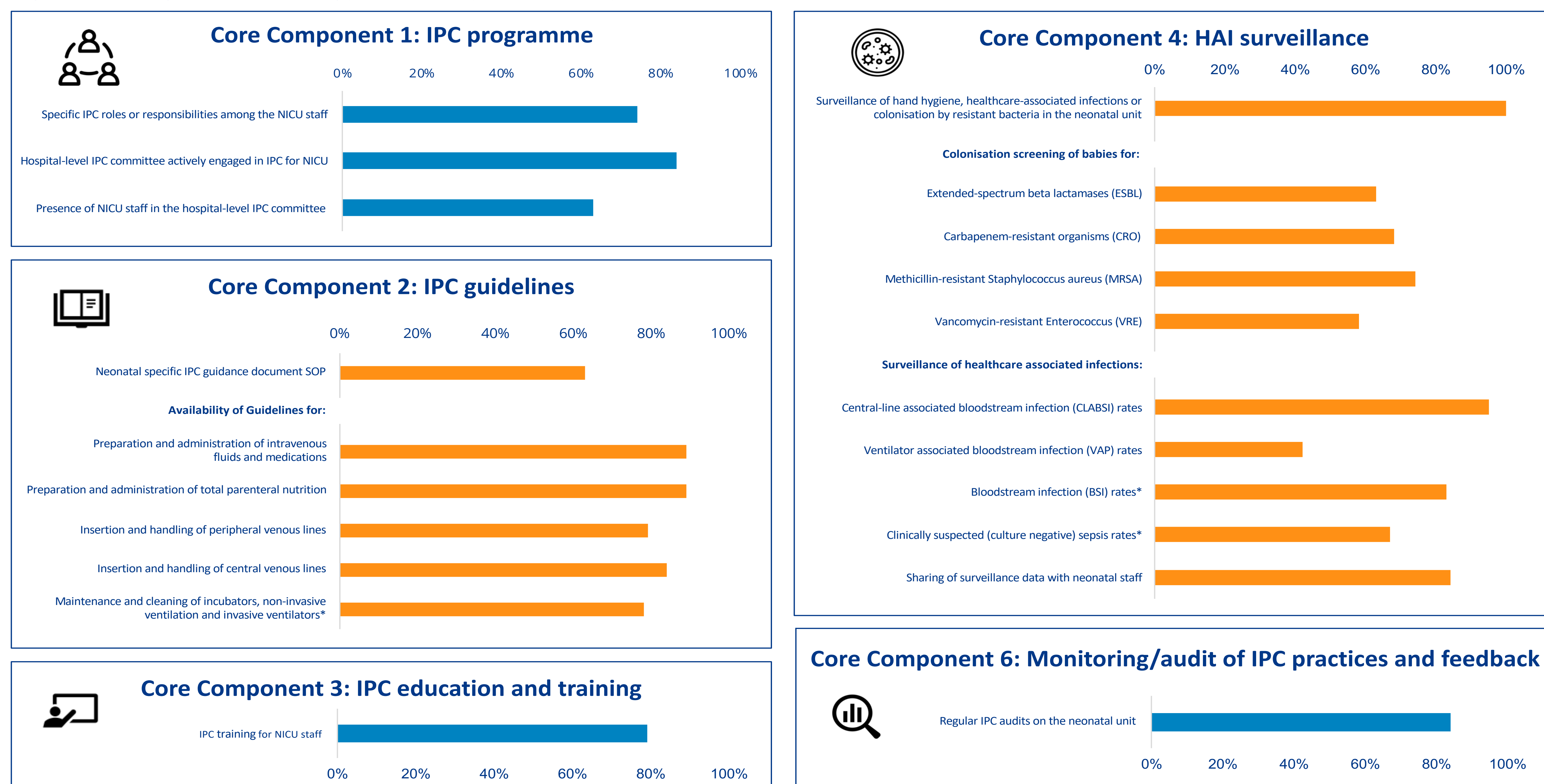
RESULTS

By March 2023, **19 sites (18 European, 1 South African)** had completed the standardized questionnaire on IPC practices. The majority of these 19 NICUs were **teaching/tertiary hospitals (n=17)** and 2 were standalone pediatric hospitals. The responding NICUs indicated **cot numbers of 9 to 132 (median 30)** and all units **routinely offered intensive care to extremely premature infants (<28 weeks gestational age)**. Median overall admission rates were 529 admissions/year with 72 admissions/year for those under 32 weeks.

From the IPC questionnaire 21 questions corresponded to the WHO core components (CC) and are presented in **Figure 1**. Most questions were related to IPC guidelines (CC 2) and HAI surveillance (CC 4). Units which had **NICU specific guidelines (12/19 units, 63%)** all made them available to their department staff, mainly to nurses and clinicians (12/12) but also cleaning staff (9/12), radiologists and auxiliary nurses (7/12), physiotherapists and consult services (6/12).

Surveillance of hand hygiene, HAIs and colonization with resistant bacteria was done in all units. Frequency of surveillance varied across units (**Table 1**)

Figure 1. Percentage of NICUs indicating presence of respective core components (n=19 units)



* Answers from 18 units

Table 1. Surveillance frequency for colonisation of neonates, healthcare associated infections and hand hygiene

Surveillance	Total units with surveillance	Monthly	Several times per year	Annually	Irregularly	Continuously	Other frequency	
Colonisation of babies	ESBL	11	0	1	0	1	6	3
	CRO	13	0	1	0	2	6	4
	MRSA	14	0	1	0	4	6	3
	VRE	11	0	1	0	2	5	3
Healthcare associated infections	CLABSI	18	3	2	4	0	9	0
	VAP	8	0	0	4	1	2	1
	BSI	15	2	1	4	0	8	0
Sepsis	12	1	1	3	0	7	0	
Hand hygiene	15	1	7	1	3	1	2	

CONCLUSIONS

IPC practice implementation varied across participating NICUs. Neonatal specific IPC guidelines were present in only 63% of the units, reflecting the lack of evidence and guidance to inform IPC practices in neonates.

While surveillance activities were performed in all units they were lower for neonatology-specific aspects such as surveillance of culture negative sepsis.

Culture negative sepsis is difficult to diagnose and define due to nonspecific clinical signs and the absence of pathogen detection. However considering the impact on antibiotic prescription in neonatal settings, surveillance of culture negative sepsis should be strengthened.

Learn more about the NeoIPC Project here!

