



*Topic Expert Group: Patient safety and hygiene practice*

**Patient screening for resistant bacteria**

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*Target group*

Infants, parents, and families

*User group*

Healthcare professionals, neonatal units, hospitals, and health services

*Statement of standard*

Patient screening for multidrug-resistant bacteria in neonatal intensive care units (NICUs) is part of infection prevention and control programmes.

*Rationale*

The goal is to reduce the incidence of infections caused by multidrug-resistant bacteria in NICUs. Active surveillance consists of performing screening cultures to identify asymptomatic infants colonised with multidrug-resistant organisms (MDRO), including methicillin-resistant *Staphylococcus aureus*, vancomycin-resistant *Enterococci*, and Gram-negative pathogens expressing extended spectrum  $\beta$ -lactamases and carbapenemases. Identification of patients colonised by MDRO allows the adoption of contact precautions and cohorting of patients and decontamination, in order to minimise the likelihood of progression from colonisation to invasive infection and the spread to other patients. The benefit of active surveillance and associated interventions is well documented in the adult ICUs (1), and during outbreaks. (2) However, the benefit of screening all NICU patients for MDRO is more controversial. While some studies have shown a reduction in colonisation by MDRO (3,4), there was significant variation in timing of screening, anatomic sites sampled, isolation protocols, and decolonisation strategies. (5,6) Furthermore, cost effectiveness of active surveillance is questionable (7), treatments used for decontamination may not be totally harmless in newborns (8), and other infection prevention strategies focusing on hand hygiene and promotion of feeding with breast milk may be more efficient. (9,10) The impact of screening all infants admitted to the NICU for MDRO is likely to depend on the local epidemiology of nosocomial infections and resistance patterns, on NICU organisation and implementation of basic infection prevention practices. Therefore, a uniform approach for screening MDRO may not be applicable to all European NICUs, and policies regarding screening should be part of infection prevention and control programmes developed by each institution.

*Benefits*

*Short-term benefits*

- Reduced risk and containment of outbreaks due to multi-resistant bacteria (2,9,10)

*Long-term benefits*

- Reduced mortality and improved neurodevelopmental outcome (2,11)



### *Components of the standard*

<b>Component</b>	<b>Grading of evidence</b>	<b>Indicator of meeting the standard</b>
<b>For parents and family</b>		
1. Parents and family are informed by healthcare professionals about practices to reduce the incidence of nosocomial infections. (9,10)	A (Moderate quality) B (High quality)	Patient information sheet
<b>For healthcare professionals</b>		
2. A unit guideline on screening for multi-resistant bacteria and regarding measures that need to be taken in the event of a positive screening is adhered to by all healthcare professionals.	B (High quality)	Guideline
3. Training on infection prevention practices are attended by all responsible healthcare professionals. (2,9,10)	A (High quality) B (High quality)	Training documentation
4. Frequent contact with dedicated infection control teams to discuss specific cases is ensured.	B (High quality)	Guideline
<b>For neonatal unit</b>		
5. A unit guideline on screening for multi-resistant bacteria and regarding measures that need to be taken in the event of a positive screening is available and regularly updated. (2,9,10)	A (Moderate quality) B (High quality)	Guideline
<b>For hospital</b>		
6. Training on infection prevention practices and frequent contact with dedicated infection control teams to discuss specific cases is ensured.	B (High quality)	Guideline, training documentation
7. Resources for infection prevention and control are available, including microbiology laboratories with ability to perform identification, susceptibility testing and rapid notification of results to clinicians, ability to monitor local epidemiology of nosocomial infections, and strategies for management of outbreak. (2,9,10)	A (High quality)	Guideline, audit report
<b>For health service</b>		
8. A national guideline on screening for multi-resistant bacteria, and regarding	B (High quality)	Guideline



measures that need to be taken in the event of a positive screening is available and regularly updated.

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| 9. Initiatives to contain antibiotic-resistant pathogens are supported. (9,10) | A (Moderate quality) | Audit report |
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### *Where to go – further development of care*

Further development	Grading of evidence
For parents and family N/A	
For healthcare professionals N/A	
For neonatal unit and hospital	
<ul style="list-style-type: none"> <li>Update policies based on changes in the local epidemiology of nosocomial infections and new evidence from the literature.</li> </ul>	B (Moderate quality)
For health service N/A	

### *Getting started*

Initial steps
For parents and family
<ul style="list-style-type: none"> <li>Parents and family are verbally informed by healthcare professionals about infection prevention practices.</li> </ul>
For healthcare professionals N/A
For neonatal unit
<ul style="list-style-type: none"> <li>Develop and implement a guideline on screening for multi-resistant bacteria, and regarding measures that need to be taken in the event of a positive screening.</li> <li>Develop information material on infection prevention and control for parents.</li> </ul>
For hospital N/A
For health service
<ul style="list-style-type: none"> <li>Develop and implement a national guideline on screening for multi-resistant bacteria, and regarding measures that need to be taken in the event of a positive screening.</li> </ul>

### *Source*

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### *Lifecycle*

5 years/next revision: 2023

### *Recommended citation*

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