



*Topic Expert Group: Patient safety and hygiene practice*

**Patient safety and quality awareness in neonatal intensive care**

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*Target group*

Infants, parents, and families

*User group*

Healthcare professionals, neonatal units, hospitals, and health services

*Statement of standard*

Patient safety and quality improvement activities are fully integrated in clinical practice.

*Rationale*

Infants admitted to a neonatal intensive care unit (NICU) are at a high risk of being harmed by lapses in quality or safety. Improving patient safety is an important component of high quality care and requires the support of an appropriate system for the identification, investigation and development of learning from quality issues. Although there are several schemes for quality improvement, local leadership and implementation are critical to improving outcomes for ill infants. (1–6)

There are six potential domains in quality of healthcare: patient centeredness, patient safety, efficacy, efficiency, timeliness, and equitability (5), which should form the basis of any quality programme in neonatal care. These may be addressed using three major components: structure, data monitoring and culture. (7)

A Quality system needs to be championed at hospital board level but is led from within the neonatal team, supported by the quality improvement staff. Structural components also include a system capturing data to monitor key indicators as prioritised by the neonatal team. The system should develop a safety culture in which transparency, blame free reporting and the development of learning from clinical events reported within the system. Units should establish an advisory board to coordinate and direct quality improvement initiatives.

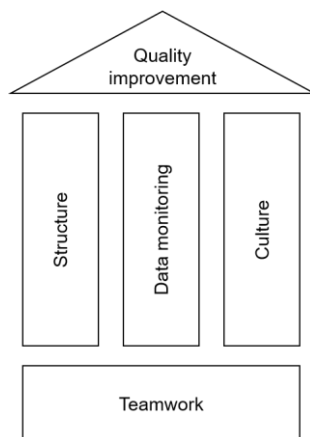


Figure 1 adapted from Haraden & Staines, 2015



### *Benefits*

- Reduced clinical errors and patient harm (1–6)
- Improved safety climate (1,3,4)
- Improved incident reporting (2,3,5)
- Uncovered processes of care prone to errors/prone to cause patient harm (3,5)
- Reduced length of hospital stay (3,4)
- Improved patient outcome (1–6)
- Prioritisation of improvement projects (2–5)
- Improved teamwork (1–3)
- Improved well-being of frontline staff (2,3,5)
- Improved patient/family satisfaction (2,3)
- Provided insight in relevant data for quality management (3,4,6)

### *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 patient safety and quality awareness in neonatal intensive care.	B (Moderate quality)	Patient information sheet
2. Parents are invited to provide feedback during and after the NICU stay.	B (Moderate quality)	Parent feedback
3. Parent representatives are invited to provide input and feedback in training and educating staff.	B (Moderate quality)	Training documentation
4. Parents are encouraged to report incidents and receive confidential timely feedback.	B (Moderate quality)	Parent feedback
5. Parents are members of the NICU quality improvement board.	B (Moderate quality)	Guideline
<b>For healthcare professionals</b>		
6. A unit guideline on patient safety and quality awareness is adhered to by all healthcare professionals.	B (Moderate quality)	Guideline
7. Training on patient safety and quality improvement including participation in simulation where appropriate is attended by all staff.	B (Moderate quality)	Training documentation



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|--|----------------------|---|
| 8. All healthcare professionals are actively engaged in quality improvement projects and training. | B (Moderate quality) | Audit report, guideline, training documentation |
| 9. Healthcare professionals report all incidents.  | B (Moderate quality) | Audit report, clinical records                  |
| 10. A blame-free culture is established.   | B (Moderate quality) | Staff feedback                                  |

#### For neonatal unit

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|---|----------------------|--------------------------------------|
| 11. A unit guideline on patient safety and quality awareness is available and regularly updated.  | B (Moderate quality) | Guideline                            |
| 12. Clear roles and responsibilities in patient safety and quality improvement are allocated, including a clinical lead for patient safety. | B (Moderate quality) | Audit report, guideline              |
| 13. A clinical incident reporting system is provided.   | B (Moderate quality) | Audit report, guideline              |
| 14. Regular patient safety and quality improvement meetings are held and actions are taken.   | B (Moderate quality) | Audit report, guideline              |
| 15. Individual participation with quality improvement/patient safety initiatives is included in yearly performance reviews.                 | B (Moderate quality) | Audit report, training documentation |

#### For hospital

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|--|----------------------|-------------------------|
| 16. Training on patient safety and quality improvement including participation in simulation where appropriate is ensured. | B (Moderate quality) | Training documentation  |
| 17. A clear policy and structure for the no-blame reporting of incidents is available.                                     | B (Moderate quality) | Guideline, audit report |
| 18. Quality monitoring is given priority by the whole hospital management team and regularly monitored.                    | B (Moderate quality) | Guideline, audit report |
| 19. Neonatal quality improvement activity is supported by the hospital quality management team.                            | B (Moderate quality) | Audit report            |



20. Benchmarking against other neonatal services is facilitated. For health service	B (Moderate quality)	Audit report
21. A national guideline on patient safety and quality awareness is available and regularly updated.	B (Moderate quality)	Guideline
22. Quality indicators and learning points from patient safety initiatives are shared across the health system.	B (Moderate quality)	Audit reports

*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 N/A	
For hospital N/A	
For health service	
<ul style="list-style-type: none"> <li>Establish regular international benchmarking.</li> </ul>	B (Moderate quality)

*Getting started*

Initial steps
For parents and family <ul style="list-style-type: none"> <li>Parents are verbally informed by healthcare professionals about patient safety and quality awareness in neonatal intensive care.</li> <li>Parents are encouraged to report incidents.</li> </ul>
For healthcare professionals <ul style="list-style-type: none"> <li>Attend training on patient safety and quality improvement including participation in simulation where appropriate.</li> <li>Report incidents using available hospital structures.</li> <li>Collate incidents and develop practice improvements.</li> </ul>
For neonatal unit <ul style="list-style-type: none"> <li>Develop and implement a unit guideline on patient safety and quality awareness.</li> <li>Develop information material on patient safety and quality awareness in neonatal intensive care for parents.</li> <li>Foster a patient safety culture by starting with team training.</li> </ul>
For hospital



- Support healthcare professionals to participate in training on patient safety/quality improvement including participation in simulation where appropriate.
- Facilitate learning from mistakes and from other departments.
- Designate a quality improvement manager.

#### For health service

- Develop and implement a national guideline on patient safety and quality awareness.
- Establish a national peer review programme.

### *Description*

It may seem quite logical and even to be expected that a lot of attention has been given to improvement of quality of care in neonatal care. The extremely vulnerable and seriously ill patients in a neonatal intensive care unit (NICU) are at a high risk of being harmed by lapses in quality or safety. Nevertheless, improving healthcare quality has proven to be a challenging undertaking, that foremost requires long term dedication. It has become clear that the science of improvement, human factors and implementation are indispensable in increasing quality and patient safety. This standard of care attempts to highlight the most relevant topics and tools that NICUs can apply in their quality management.

The Institute of Medicine has defined six domains in quality of healthcare: patient centeredness, patient safety, efficacy, efficiency, timeliness, and equitability. Quality and safety management should encompass all these topics. Obviously that poses a very daunting task for NICUs, which nonetheless needs to be addressed. The first thing that needs to be clarified, is that no single quality management system will fit all NICUs; customisation is in order, as each NICU may need to have to address different priorities in quality and patient safety. Also, the instrument that works well in one NICU will likely be less or not successful in another NICU; for instance, the applicability of a programme to increase flow of patients and reduce length of stay would be very variable among different settings.

Patient centeredness has been viewed as an evident requirement for neonatal care and the “family unit” as the “patient” is a widespread point of view. The implementation of rooming in facilities for mothers, mother and child suites, and shared care programmes are some of the most apparent developments. The increasing use of individualised neonatal care programmes is another example of application of patient-centred care that directly benefits both patients and parents. The challenges for the future in infant- and family-centred care lie in creating shared decision-making. Together with parents, we will need to examine what is needed for all stakeholders, such as parents, healthcare workers, hospitals etc., to implement and maintain shared decision-making. By involving parents in the care for their children, not only can we improve that care, but also advance knowledge and experience of quality and safety in a broader way.

Since the publication of the landmark report “To err is human” (5), the quality and patient safety movement, which had taken off with a slow start, has gained more and more momentum. Numerous initiatives and organisations dedicated to quality improvement have been created, such as the Institute for Healthcare Improvement in the USA and the Health Foundation in the UK. Research in the fields of quality, patient safety, implementation, innovation and human factors, has exploded. As the



research and knowledge of safety and quality has increasingly been shared, it became evident that a number of basic requirements for improvement are necessary for all healthcare settings.

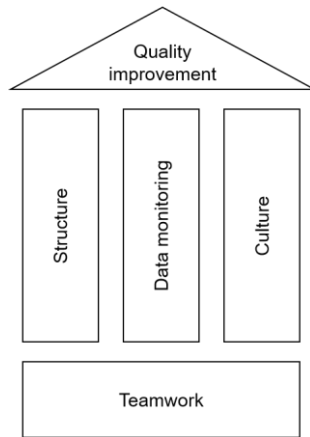


Figure 1 adapted from Haraden & Staines, 2015

First of all, a system or structure for Quality and Patient Safety Management (QPSM) needs to be in place. Roles, tasks and responsibilities have to be defined. It needs to be clear who is doing what, and who is accountable for which components of the management system. This needs to be facilitated and supported actively by boards, directors, and (middle) management; quality management will undoubtedly fail when it is simply added to the everyday tasks and activities of the engaged frontline staff. Another necessity relates to improvement skills. Frontline staff and middle management involved in quality improvement need to collaborate with co-workers schooled in change management, as healthcare professionals usually are not trained in the skills for developing and implementing new processes, procedures etc. Next to this, each NICU needs to determine what data to monitor and in what way. In order to be able to prioritise, implement, monitor, adapt and create a success of any improvement initiative, data need to be collected relevant to the problem that needs to be tackled (see TEG data collection & documentation).

The last pillar of the QPSM is culture. How is the safety climate in a NICU, a hospital, a country? Is there a “just culture” where openly discussing errors and mistakes is not only possible without fear for repercussions, but in fact welcomed as an opportunity to learn? In this respect, leading by example is one of the most powerful modes of improving the safety culture in any setting. Directors and heads of departments that welcome feedback on their (lack of) adhering to hand hygiene rules, will likely see an increase in commitment from frontline staff and patients/parents. Next to leadership in setting the standard for the desired work-related behaviours, they also need to facilitate teamwork and teamwork training. Teamwork is more and more recognised as the foundation of healthcare and thus it needs to be addressed. As has been proven numerous times, expert teamwork is not created by simply putting a number of experts together, but requires training, both in acute care settings such as the NICU, as well as other settings such as for instance an outpatient department. Healthcare frontline staff are well trained professionals in their field of expertise, however, the non-technical skills that are required for teamwork quite often have not received the attention they require. Communication, stress management, leadership, decision-making, risk management, developing a



shared understanding of the situation are topics of training, education, and discussion that can and should be addressed. Especially interdisciplinary training is an upcoming phenomenon in healthcare, that addresses these non-technical skills. Teamwork and culture also relate to the notion that patients and family should be welcomed as members of the team. Obviously, healthcare in itself means partnering up with patients, as without them, there would be no need for healthcare providers. However, integrating parents in the NICU team can be quite challenging and there may be a number of barriers. For instance, the events surrounding the birth of a preterm child can be extremely stressing for parents, thus decreasing their ability in shared decision-making. Or the frontline staff feel they cannot properly discuss the decisions during the rounds if the parents are present. These potential issues obviously need to be explored and dealt with before teaming up with the parents can reach its full potential. A large number of initiatives have been launched worldwide, so what remains is learning from each other, and from the parents/families, in how to best achieve safe, patient centred and reliable care for the most vulnerable, the NICU patients.

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### *Lifecycle*

5 years/next revision 2023

### *Recommended citation*

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