

TITLE

ENVIRONMENTAL NOISE CONTROLSCOPE

Provincial: Neonatal Intensive Care Units

DOCUMENT

HCS-203-03

APPROVAL AUTHORITY

Vice President, Research, Innovation & Analytics

INITIAL EFFECTIVE DATE

April 24, 2017

SPONSOR

Newborn Standing Committee, Maternal Newborn Child & Youth Strategic Clinical Network (MNCY SCN)

REVISION EFFECTIVE DATE

Not applicable

PARENT DOCUMENT TITLE, TYPE AND NUMBER

Not applicable

SCHEDULED REVIEW DATE

April 24, 2020

NOTE: The first appearance of terms in bold in the body of this document (except titles) are defined terms – please refer to the Definitions section.

If you have any questions or comments regarding the information in this document, please contact the Policy & Forms Department at policy@ahs.ca. The Policy & Forms website is the official source of current approved policies, procedures, directives, standards, protocols and guidelines.

OBJECTIVES

- To facilitate appropriate environmental noise levels for infants in Alberta Health Services (AHS) Neonatal Intensive Care Units (NICU) as per Appendix A: *Levels of Environmental Noise and Associated Activities*.
- To promote commitment to a reduction in environmental noise levels among **health care providers, parent(s), families** and visitors in NICU.

APPLICABILITY

Compliance with this document is required by all Alberta Health Services employees, members of the medical and midwifery staffs, Students, Volunteers, and other persons acting on behalf of Alberta Health Services (including contracted service providers as necessary), working in Neonatal Intensive Care Units (NICU).

ELEMENTS**1. Acceptable Noise Levels**

- 1.1 Each NICU shall develop a process to monitor noise level.
- 1.2 In an infant's room, noise levels from continuous background and operational sounds shall not exceed the following:
 - a) 45 decibels (dB) of an average hourly sound level (**Leq**), **A-weighted** slow response;
 - b) 50 dB of an hourly **L10**, A-weighted slow response; and

- c) 65 dB of transient sound (**L_{max}**), A-weighted slow response.
- 1.3 In other areas of the NICU, noise levels from continuous background and operational sounds shall not exceed:
- a) 50 dB of an average hourly sound level (Leq), A-weighted slow response;
 - b) 55 dB of an hourly L₁₀, A-weighted slow response; and
 - c) 70 dB of transient sounds (L_{max}), A-weighted slow response.
- 2. Bedside Environment**
- 2.1 Talking shall be minimized at the bedside. If needed, a quiet voice or whisper should be used. There shall be no loud voices or laughter at the bedside.
 - 2.2 Incubator doors shall not be allowed to snap or click shut.
 - 2.3 The top of the incubator shall not be used to tap, write or place equipment on.
 - 2.4 Incubator tops and cribs shall be covered while allowing an infant to be visible to parent(s) and health care providers at all times.
 - 2.5 Bag valve masks and suction equipment shall be turned off when not in use.
 - 2.6 Infant care rounds should not occur at the bedside.
 - 2.7 The voice of the parent(s) should be audible during daily activities.
- 3. Equipment Alarms**
- 3.1 Equipment alarms shall face away from the infant.
 - 3.2 The alarm volume shall be decreased as much as safely possible.
 - 3.3 All health care providers shall be responsible for promptly addressing equipment alarms.
 - 3.4 Equipment alarms shall be silenced prior to causing potential alarm conditions (e.g., arterial line clamping to obtain blood).
- 4. Nursery Environment**
- 4.1 Communication devices shall be placed on vibrate.
 - 4.2 Health care providers shall minimize the noise of running water.
 - 4.3 A 'quiet hour' should be implemented on each shift during which noise, procedures and tests are restricted.
 - 4.4 All health care providers should wear quiet, soled shoes.

- 4.5 Storage drawers and doors should be modified so as to not slam or bang shut.
- 4.6 Plastic garbage cans without lids should be used.
- 4.7 Sound control and noise should be considered as important factors when purchasing new equipment or renovating.
- 4.8 Whenever possible, loud or noisy caregiving activities should be done away from the bedside.

DEFINITIONS

A-weighted means, for the purpose of this document only, a frequency-weighting filter that approximates the frequency response of the human ear and is used to measure what a human ear can detect at relatively quiet levels of sound (Environmental Projection Department, 2013).

Family(-ies) means one or more individuals identified by the patient as an important support, and who the patient wishes to be included in any encounters with the health care system, including, but not limited to, family members, legal guardians, friends and informal caregivers.

Health care provider means any person who provides goods or services to a patient, inclusive of health care professionals, staff, students, volunteers and other persons acting on behalf or in conjunction with Alberta Health Services.

L10 means, for the purpose of this document only, a measure of the decibel level that is exceeded for 10 percent of the time during a specific measurement period (Environmental Projection Department, 2013).

Leq means, for the purpose of this document only, the total noise level over a specific period of time (Environmental Projection Department, 2013).

Lmax means, for the purpose of this document only, the highest decibel level measured for at least 1/20th of a second during a specific time period (Environmental Projection Department, 2013).

Parent means the adult guardian of a child, with the legal authority to make decisions on behalf of the minor, in accordance with the *Family Law Act* (Alberta).

REFERENCES

- Appendix A: *Levels of Environmental Noise and Associated Activities*

VERSION HISTORY

Date	Action Taken
Click here to enter a date	Optional: Choose an item
Click here to enter a date	Optional: Choose an item

APPENDIX A

Levels of Environmental Noise and Associated Activities

Activities	Noise Level (dB)
Bedside report	50
Bradycardia alarm	55 – 58
General conversation	58 – 64
Using incubator top as writing surface	59 – 64
Intravenous pump alarm	61 – 78
Turning water on and off	66 – 76
Opening plastic sleeve of incubator	67 – 86
Closing an incubator cabinet	70 – 95
Closing a solid plastic incubator porthole	80 – 111
Dropping head of mattress	88 – 117
Placing bottom of formula on top of incubator	96 – 117