



European Survey on Neonatal Respiratory Care in NICUs

Presentation

The aim of this survey is to provide a comprehensive picture of the devices and strategies for the care of neonatal respiratory disease in European NICUs. The questionnaire is divided into five sections.

The 5 sections are as follows:

- A) General information
- B) The modes, devices and strategies employed in your Delivery Room (DR)
- C) The modes, devices and strategies employed in your Neonatal Intensive Care Unit (NICU)
- D) The drugs used in your NICU for neonatal respiratory diseases
 - Surfactant
 - Other drugs
- E) The mechanical ventilators in your NICU

Survey advisory board:

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Data Protection Policy:

The data collected by this survey will be used solely by UENPS and only for the purposes of this survey. It will be used to draw up results, and then it will be anonymised before publication.

No data will be shared with third parties.

GDPR policy will apply in full to the survey (<https://eur-lex.europa.eu/eli/reg/2016/679/oj>).

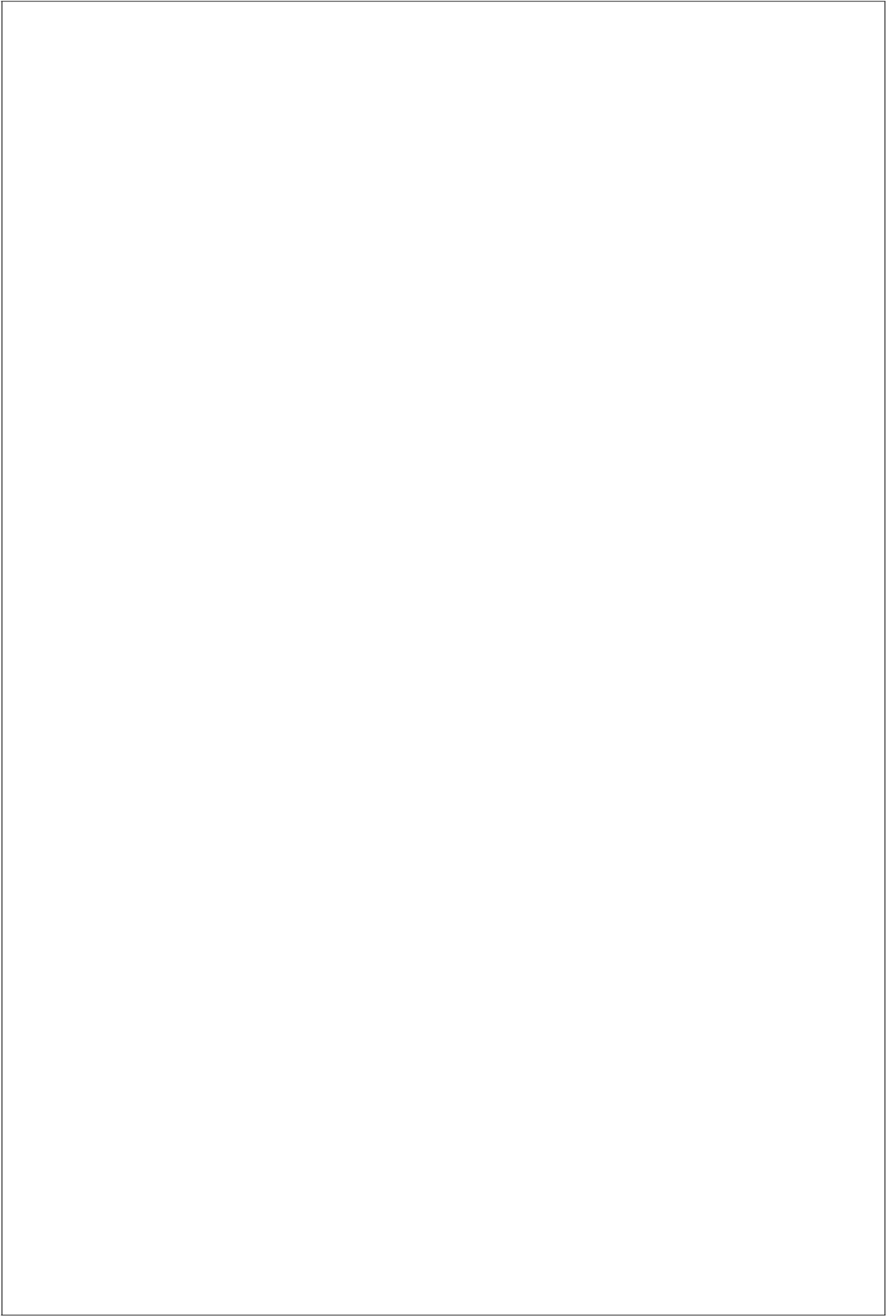
Estimated time for completion: 30 minutes

Requested data to take the survey:

- Number of admitted infants with BW <1500 grams in 2021
- Total number of admitted neonates in the NICU (best estimate) in 2021
- Number of births in your center in 2021

Useful technical tips:

- 1) you can change your answers on any survey page until you click the DONE button to complete the survey.
- 2) you don't need to complete survey in one session: you can answer some questions and return later to finish the rest.
- 3) if you need help or have any questions, please write to: uenps.survey@gmail.com





European Survey on Neonatal Respiratory Care in NICUs

A. General Information

* 1. Contact Information

Departement/Unit	<input type="text"/>
Hospital	<input type="text"/>
Contact Person Name	<input type="text"/>
City/Town	<input type="text"/>
State/Province	<input type="text"/>
Country	<input type="text"/>
Email Address	<input type="text"/>
Phone	<input type="text"/>

* 2. Academic Hospital

- ☐ Yes
- ☐ No

* 3. Is your unit a Neonatal Intensive Care Unit (NICU)?

- ☐ Yes
- ☐ No

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* 4. Number of intensive care beds in your Unit

* 5. Patient/nurse ratio in your NICU

- ☐ 1:1
- ☐ 2:1
- ☐ 3:1
- ☐ 4:1
- ☐ 5:1
- ☐ Other (please specify)

European Survey on Neonatal Respiratory Care in NICUs *Activity in 2021*

* 6. Total number of admitted neonates in the NICU (best estimate) in 2021

* 7. Number of admitted infants with BW <1500 grams in 2021

- ☐ Less than 30
- ☐ Between 30 and 50
- ☐ Between 50 and 100
- ☐ Greater than 100



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* 8. Does your NICU team have a policy for upgrading training on respiratory care and techniques?

☐ Yes

☐ No

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* 9. If yes, what kind of course your team attend?

- ☐ National web course
- ☐ National face-to-face course
- ☐ International web course
- ☐ International face-to-face course



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* 10. UENPS wants to organize courses on respiratory care in specific countries. Would a course like this be useful for your NICU?

- ☐ Yes
- ☐ No, there are already a lot of courses in my country

* 11. Is your hospital a birth centre?

- ☐ Yes
- ☐ No

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* 12. Number of births in your centre in 2021

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B. The modes, strategies and devices employed in your Delivery Room (DR)

* 13. What is the lowest GA at which you initiate resuscitation? (choose only one answer)

- ☐ 22 weeks ☐ 25 weeks
☐ 23 weeks ☐ 26 weeks
☐ 24 weeks
☐ Other (please specify)

* 14. What devices are available for respiratory stabilization in non-invasive mode?

- ☐ Self-inflating bag
☐ Flow-inflating bag
☐ Standard T-piece system
☐ Standard jet system (Infant Flow or similar)
☐ New jet resuscitation system (R-PAP)
☐ Mechanical ventilator

* 15. Which device is routinely used for respiratory stabilization in non-invasive mode? (choose only one answer)

- ☐ Self-inflating bag
- ☐ Flow-inflating bag
- ☐ Standard T-piece system
- ☐ Standard jet system (Infant Flow or similar)
- ☐ New jet resuscitation system (R-PAP)
- ☐ Mechanical ventilator

* 16. What other devices are available for invasive and non-invasive respiratory support? (give as many answers as necessary)

- | | |
|--|--|
| <input type="checkbox"/> Ventilator on transport incubator | <input type="checkbox"/> Ventilator for non-invasive ventilation |
| <input type="checkbox"/> Conventional mechanical ventilator | <input type="checkbox"/> High-Flow Therapy device (nHFT) |
| <input type="checkbox"/> Hybrid ventilator (conventional + HFOV) | <input type="checkbox"/> None of these |

* 17. Which interface is routinely used for respiratory stabilization in non-invasive mode? (choose only one answer)

- | | |
|--|---|
| <input type="radio"/> Facial mask | <input type="radio"/> Long nasopharyngeal cannulas |
| <input type="radio"/> Nasal mask | <input type="radio"/> Double inspiratory loop cannulas (nasal High Flow Therapy models) |
| <input type="radio"/> Short binasal prongs | <input type="radio"/> Single nasopharyngeal tube (cut ETT) |

* 18. Which (if any) international guidelines do you follow when setting initial FiO_2 ?

- ☐ AAP (American Academy of Pediatrics) - AHA (American Heart Association)
- ☐ ERC (European Resuscitation Council)
- ☐ Other (please specify)

* 19. Which is your target SpO₂ at 5 minutes in infants with GA <28 weeks? (choose only one answer)

- ☐ 80%-85%
- ☐ 86%-90%
- ☐ >90%
- ☐ I don't have any target

* 20. Do you heat and humidify the gases used for PPV/respiratory support?

- ☐ Yes
- ☐ No

* 21. What is the respiratory stabilization strategy at birth for a spontaneously breathing 23⁺⁰- 24⁺⁶ weeker? (choose only one answer)

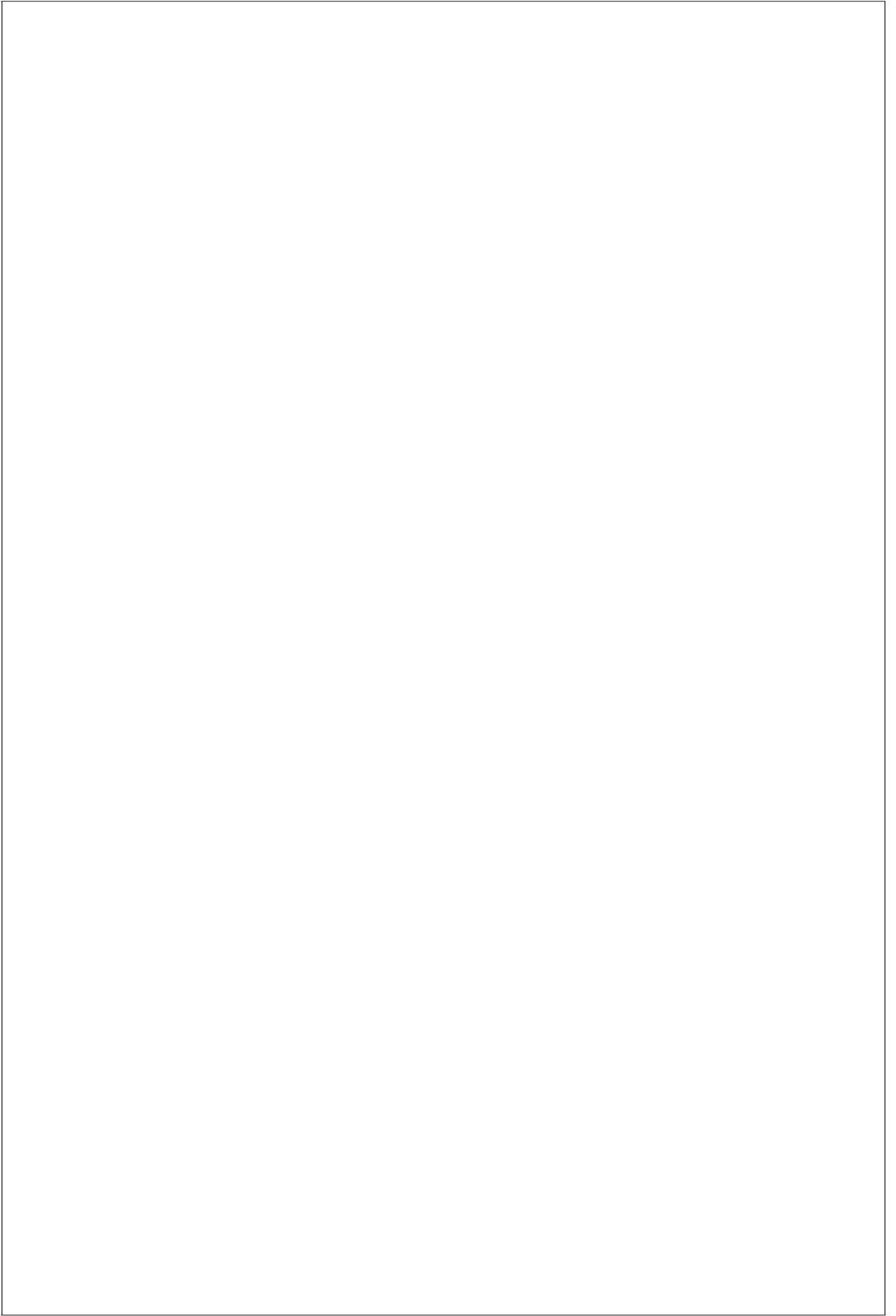
- ☐ NCPAP
- ☐ NIPPV
- ☐ Synchronized NIPPV
- ☐ NBiPAP
- ☐ Nasal High Flow Therapy (nHFT)
- ☐ Invasive ventilation
- ☐ Resuscitation maneuvers are not initiated at these gestational ages

* 22. What is the respiratory stabilization strategy at birth for a spontaneously breathing 25⁺⁰- 27⁺⁶ weeker? (choose only one answer)

- ☐ NCPAP
- ☐ NIPPV
- ☐ Synchronized NIPPV
- ☐ NBiPAP
- ☐ Nasal High Flow Therapy (nHFT)
- ☐ Invasive ventilation

* 23. Which pulmonary recruitment manoeuvre (if any) do you use during stabilization of preterm infants? (choose only one answer)

- ☐ None
- ☐ Sustained Lung Inflation (SLI)
- ☐ Incremental CPAP/PEEP trial
- ☐ Incremental/decremental CPAP/PEEP trial
- ☐ Decremental CPAP/PEEP trial



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B. The modes, strategies and devices employed in your Delivery Room (DR)

* 24. In that case what is the **initial** and **min** CPAP/PEEP level (cmH₂O)?

Initial CPAP/PEEP

Min CPAP/PEEP

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B. The modes, strategies and devices employed in your Delivery Room (DR)

* 25. In that case what is the **initial** and **max** CPAP/PEEP level (cmH₂O)?

Initial CPAP/PEEP

Max CPAP/PEEP

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B. The modes, strategies and devices employed in your Delivery Room (DR)

* 26. How do you set pressure and time parameters for SLI during stabilization?

Pressure (cmH₂O)

Time (sec)

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B. The modes, strategies and devices employed in your Delivery Room (DR)

* 27. What CPAP/PEEP level do you set during non-invasive ventilation (NIV) for stabilization (cmH₂O)?

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B. The modes, strategies and devices employed in your Delivery Room (DR)

* 28. What monitoring technologies are available ?
(give as many answers as necessary)

- | | |
|--|--|
| <input type="checkbox"/> Pulse oximeter | <input type="checkbox"/> End-Tidal CO ₂ |
| <input type="checkbox"/> ECG monitor | <input type="checkbox"/> Respiratory Function Monitor (pressure, flow and volume signals, etc..) |
| <input type="checkbox"/> Colorimetric capnometry | <input type="checkbox"/> Mechanical ventilator for monitoring pressure, flow and volume signals |

* 29. Do you use surfactant replacement therapy?

- ☐ Yes
- ☐ No

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B. The modes, strategies and devices employed in your Delivery Room (DR)

* 30. If yes, which administration technique do you use? (give as many answers as necessary)

- ☐ Conventional mode (= intubation + MV)
- ☐ INSURE (INTubation-SURfactant-Extubation)
- ☐ INRECSURE (INTubation-RECruitment with HFOV-SURfactant-Extubation)
- ☐ LISA (Less Invasive Surfactant Administration)/MIST (Minimally Invasive Surfactant Therapy)
- ☐ Laryngeal mask
- ☐ Pharyngeal instillation

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B. The modes, strategies and devices employed in your Delivery Room (DR)

* 31. Do you use caffeine?

- ☐ Yes
- ☐ No
- ☐ Sometimes

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C. The modes, devices and strategies employed in your Neonatal Intensive Care Unit (NICU)

* 32. What invasive ventilation modes are available? (give as many answers as necessary)

- | | |
|--|---|
| <input type="checkbox"/> IMV (Intermittent Mandatory Ventilation) | <input type="checkbox"/> NAVA (Neurally Adjust Ventilatory Assist) |
| <input type="checkbox"/> IPPV (Intermittent Positive Pressure Ventilation)/CMV (Conventional Mechanical Ventilation) | <input type="checkbox"/> HFOV (High Frequency Oscillatory Ventilation) |
| <input type="checkbox"/> SIMV (Synchronized Intermittent Mandatory Ventilation) | <input type="checkbox"/> Volume Targeted Ventilation for conventional modes |
| <input type="checkbox"/> SIPPV (Synchronized Intermittent Positive Pressure Ventilation) / AC (Assist Control) | <input type="checkbox"/> Volume Targeted Ventilation for HFOV |
| <input type="checkbox"/> PSV (Pressure Support Ventilation) | <input type="checkbox"/> Jet ventilation |
| <input type="checkbox"/> PAV (Proportional Assist Ventilation) | |

* 33. What invasive ventilation strategy is the first choice for treating acute RDS in preterm infants? (choose only one answer)

- | | |
|---|--|
| <input type="radio"/> Non-Synchronized conventional ventilation | <input type="radio"/> HFOV + Volume Target |
| <input type="radio"/> Synchronized conventional ventilation | <input type="radio"/> PAV |
| <input type="radio"/> Synchronized conventional ventilation + Volume Target | <input type="radio"/> NAVA |
| <input type="radio"/> HFOV | |

* 34. Do you change this first choice strategy when treating high-risk infants (i.e. ELGA, PPRM with lung hypoplasia, chorionamnionitis, premature birth without antenatal steroid prophylaxis)?

- ☐ no
- ☐ Yes (please specify)

* 35. How do you set Inspiratory time (Ti) during conventional ventilation? (choose only one answer)

- ☐ We set Ti according to GA
- ☐ Looking at the infant's flow signal
- ☐ I don't know

* 36. In respiratory diseases of preterm infants, during volume targeted ventilation, is it correct to set Vt at 5-6 ml/kg?

- ☐ Yes
- ☐ It depends on the phase of the disease and on postnatal age

* 37. How do you set PEEP during conventional ventilation?

- ☐ by increasing or decreasing PEEP according to patient conditions
- ☐ by using stepwise PEEP increments followed by decrements (dynamic PEEP)

* 38. How do you set MAP during HFOV?

- ☐ by increasing or decreasing MAP according to patient conditions
- ☐ using stepwise MAP increments followed by decrements (lung recruitment procedure)

* 39. Do you use 'closed loop' oxygen control?

- ☐ Yes
- ☐ No

* 40. Is a Nitric Oxide dispenser available?

☐ Yes

☐ No

European Survey on Neonatal Respiratory Care in NICUs

C. The modes, devices and strategies employed in your Neonatal Intensive Care Unit (NICU)

* 41. What invasive ventilation strategy is the first choice for weaning infants from mechanical ventilation? (choose only one answer)

- | | |
|--|---|
| <input type="radio"/> IMV | <input type="radio"/> PSV |
| <input type="radio"/> IPPV/CMV | <input type="radio"/> PSV + Volume Target |
| <input type="radio"/> SIMV | <input type="radio"/> PAV |
| <input type="radio"/> SIPPV/AC | <input type="radio"/> NAVA |
| <input type="radio"/> SIPPV/AC + Volume target | <input type="radio"/> HFOV |
| <input type="radio"/> SIMV + PSV | <input type="radio"/> HFOV + VG |
| <input type="radio"/> SIMV + PSV + Volume target | |

* 42. What non-invasive ventilation modes are used? (give as many answers as necessary)

- | | |
|--|---|
| <input type="checkbox"/> Conventional ventilator NCPAP | <input type="checkbox"/> Synchronized NIPPV/NIMV by flow-trigger |
| <input type="checkbox"/> Bubble NCPAP | <input type="checkbox"/> Synchronized NIPPV/NIMV by abdominal capsule |
| <input type="checkbox"/> Variable-flow (Jet Systems) NCPAP | <input type="checkbox"/> Synchronized NIPPV/NIMV by NAVA |
| <input type="checkbox"/> NBiPAP | <input type="checkbox"/> nHFT |
| <input type="checkbox"/> NIPPV/NIMV | <input type="checkbox"/> NHFOV |
| <input type="checkbox"/> Synchronized NIPPV/NIMV by pressure-trigger | |

* 43. What is the main non-invasive mode used? (choose only one answer)

- | | |
|--|---|
| <input type="radio"/> Conventional ventilator NCPAP | <input type="radio"/> Synchronized NIPPV/SNIMV by flow-trigger |
| <input type="radio"/> Bubble NCPAP | <input type="radio"/> Synchronized NIPPV/SNIMV by abdominal capsule |
| <input type="radio"/> Variable-flow (Jet Systems) NCPAP | <input type="radio"/> Synchronized NIPPV/SNIMV by NAVA |
| <input type="radio"/> NBiPAP | <input type="radio"/> nHFT |
| <input type="radio"/> NIPPV/NIMV | <input type="radio"/> NHFOV |
| <input type="radio"/> Synchronized NIPPV/SNIMV by pressure-trigger | |

* 44. What NIV interfaces are available? (give as many answers as necessary)

- | | |
|---|--|
| <input type="checkbox"/> Facial mask | <input type="checkbox"/> Long nasopharyngeal cannulas |
| <input type="checkbox"/> Nasal Mask | <input type="checkbox"/> Double inspiratory loop cannulas (nasal High Flow Therapy models) |
| <input type="checkbox"/> Short binasal prongs | <input type="checkbox"/> Single nasopharyngeal tube (cut ETT) |

* 45. Does your NICU have a protocol for moving from non-invasive to invasive ventilation?

- ☐ Yes
- ☐ No, the neonatologist in charge decides individual cases depending on the condition of the patient

* 46. Does your NICU have a protocol for moving from invasive to non-invasive ventilation?

- ☐ Yes
- ☐ No, the neonatologist in charge decides individual cases depending on the condition of the patient

* 47. What is the incidence (%) of severe BPD at 36 weeks post-conceptual age in infants with GA <29 weeks? (BPD = need for oxygen and NIV or MV)

* 48. How is ECMO provided? (choose only one answer)

- ☐ It is available in your NICU
- ☐ It is available at your hospital, but not in your NICU
- ☐ It is not available at your hospital, but you follow a standardized protocol for modes and site of transfer
- ☐ It is not available at your hospital, and the neonatal team decides how and where to transfer individual cases depending on need

* 49. Does your NICU have a standardized protocol for performing a tracheostomy in a chronically ventilated preterm infant?

- ☐ No
- ☐ Yes (at what post-conceptual GA)

European Survey on Neonatal Respiratory Care in NICUs

D. The drugs used in your NICU for neonatal respiratory diseases

D.1 Surfactant

* 50. Which parameters do you consider first as an indicator to administer surfactant for newborns with RDS on non-invasive ventilation?

Rank the following parameters (1 = most important; 5 = least important):



Level of FiO₂



Chest X-Ray



Lung ultrasound score



Level of SpO₂/FiO₂



Silverman score

European Survey on Neonatal Respiratory Care in NICUs

D. The drugs used in your NICU for neonatal respiratory diseases

* 51. What FiO_2 threshold do you use to administer surfactant in preterm infants?

- | | |
|---|---|
| <input type="radio"/> $\text{FiO}_2 < 0.25$ | <input type="radio"/> $\text{FiO}_2 = 0.4$ |
| <input type="radio"/> $\text{FiO}_2 = 0.25-0.3$ | <input type="radio"/> $\text{FiO}_2 = 0.4-0.45$ |
| <input type="radio"/> $\text{FiO}_2 = 0.3$ | <input type="radio"/> $\text{FiO}_2 = 0.45-0.5$ |
| <input type="radio"/> $\text{FiO}_2 = 0.3-0.35$ | <input type="radio"/> $\text{FiO}_2 = 0.5$ |
| <input type="radio"/> $\text{FiO}_2 = 0.35-0.4$ | <input type="radio"/> $\text{FiO}_2 > 0.5$ |

* 52. Does your FiO_2 threshold change with higher GA?

- ☐ No
- ☐ Yes

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D. The drugs used in your NICU for neonatal respiratory diseases

* 53. Please specify

At which GA

Which FiO₂
threshold

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D. The drugs used in your NICU for neonatal respiratory diseases

* 54. Which surfactant do you use?

Porcine: please
specify initial dose
(mg/kg)

Bovine: please
specify initial
dose (mg/kg)

Calf: please specify
initial dose (mg/kg)

Synthetic: please
specify initial
dose (mg/kg)

Other, please
specify initial
dose (mg/kg)

* 55. When administering surfactant, how do you manage the relation between vials and dosage? (choose only one answer)

- ☐ You give the correct dose/kg regardless of how many vials you must open.
- ☐ You adjust the dosage in order either to use up the surfactant in the vial (increasing the dose) or to avoid opening a new vial (decreasing the dose).

* 56. What device do you routinely use to administer surfactant during non-invasive ventilation? (choose only one answer)

- ☐ Endotracheal tube [for INSURE or INRECSURE]
- ☐ Thin catheter [LISA/MIST]
- ☐ Laryngeal mask
- ☐ Pharyngeal instillation

European Survey on Neonatal Respiratory Care in NICUs

D. The drugs used in your NICU for neonatal respiratory diseases

* 57. What device do you use to perform LISA/MIST?

- ☐ umbilical catheter
- ☐ feeding catheter
- ☐ tracheal aspiration catheter
- ☐ vascular catheter
- ☐ purpose-built surfactant instillation catheter

* 58. At what weeks of GA are infants considered suitable for the LISA/MIST technique? (give as many answers as necessary)

- | | |
|--------------------------------|---|
| <input type="checkbox"/> <24 | <input type="checkbox"/> 28-31 |
| <input type="checkbox"/> 24-25 | <input type="checkbox"/> ≥32 |
| <input type="checkbox"/> 26-27 | <input type="checkbox"/> LISA is never used |

* 59. Do you perform a lung recruitment manoeuvre before administering surfactant? (give as many answers as necessary)

- ☐ No, never
- ☐ Yes, increasing the level of CPAP or PEEP during NIV, before INSURE or LISA/MIST technique
- ☐ Yes, optimizing MAP during HFOV, in course of INRECSURE technique
- ☐ Yes, increasing the level of PEEP (CMV) or MAP (HFOV) during invasive ventilation when extubation is not expected

* 60. At what weeks of GA are infants considered suitable for the INRECSURE technique? (give as many answers as necessary)

- | | |
|--------------------------------|--|
| <input type="checkbox"/> <24 | <input type="checkbox"/> 28-31 |
| <input type="checkbox"/> 24-25 | <input type="checkbox"/> ≥32 |
| <input type="checkbox"/> 26-27 | <input type="checkbox"/> INRECSURE is never used |

* 61. When administering surfactant through an endotracheal tube, what kind of circuit do you use? (choose only one answer)

- ☐ Open circuit
- ☐ Closed circuit

* 62. How do you support surfactant spreading immediately after endotracheal tube administration when extubation is expected? (choose only one answer)

- ☐ by manual PPV
- ☐ by T-piece resuscitator
- ☐ by ventilator PPV
- ☐ I do not use PPV if the infant is spontaneously breathing on CPAP with good respiratory drive

* 63. If you use the INSURE technique, how long do you wait before removing the endotracheal tube? (choose only one answer)

- ☐ Immediately after the infant resumes breathing spontaneously
- ☐ Within 30 minutes
- ☐ Within 1 hour
- ☐ Within 2 hours
- ☐ Time is variable

European Survey on Neonatal Respiratory Care in NICUs

D. The drugs used in your NICU for neonatal respiratory diseases

* 64. How many infants received surfactant through the INSURE technique last month?

Number of infants (if
you don't know write
"999")

* 65. How many infants received surfactant through the INRECSURE technique last month?

Number of infants (if
you don't know write
"999")

* 66. How many infants received surfactant through the LISA/MIST technique last month?

Number of infants (if
you don't know write
"999")

* 67. How many infants received surfactant during MV last month?

Number of infants (if
you don't know write
"999")

European Survey on Neonatal Respiratory Care in NICUs

D. The drugs used in your NICU for neonatal respiratory diseases

* 68. Besides RDS, for which neonatal respiratory diseases do you administer surfactant? (give as many answers as necessary)

- | | |
|--|--|
| <input type="checkbox"/> Transient tachypnoea of the newborn | <input type="checkbox"/> Pulmonary haemorrhage |
| <input type="checkbox"/> Meconium aspiration syndrome | <input type="checkbox"/> Congenital diaphragmatic hernia |
| <input type="checkbox"/> Pneumonia | <input type="checkbox"/> Neonatal ARDS (i.e. severe bronchiolitis) |
| <input type="checkbox"/> Other (please specify) | |

* 69. What neonatal pre-treatments do you perform for surfactant administration before the INSURE or INRECSURE techniques? (give as many answers as necessary)

- | | |
|-----------------------------------|---|
| <input type="checkbox"/> Wrapping | <input type="checkbox"/> Fentanyl |
| <input type="checkbox"/> Caffeine | <input type="checkbox"/> Propofol |
| <input type="checkbox"/> Atropine | <input type="checkbox"/> Ketamine |
| <input type="checkbox"/> Sucrose | <input type="checkbox"/> No pre-treatment |

* 70. What neonatal pre-treatments do you perform for surfactant administration before the LISA/MIST technique? (give as many answers as necessary)

- | | |
|-----------------------------------|---|
| <input type="checkbox"/> Wrapping | <input type="checkbox"/> Fentanyl |
| <input type="checkbox"/> Caffeine | <input type="checkbox"/> Propofol |
| <input type="checkbox"/> Atropine | <input type="checkbox"/> Ketamine |
| <input type="checkbox"/> Sucrose | <input type="checkbox"/> No pre-treatment |

* 71. Which factors influence the choice not to perform the LISA/MIST technique in your NICU? (give as many answers as necessary)

- | | |
|---|---|
| <input type="checkbox"/> Lack of confidence with the technique | <input type="checkbox"/> Low GA of infant |
| <input type="checkbox"/> Doubts about outcomes | <input type="checkbox"/> High GA of infant |
| <input type="checkbox"/> The LISA technique is not considered less invasive than the INSURE technique | <input type="checkbox"/> None of these: we perform the LISA technique |
| <input type="checkbox"/> Doubts about sedation | |
| <input type="checkbox"/> Other (please specify) | |

* 72. Which resources would increase your use of the LISA/MIST technique? (give as many answers as necessary)

- ☐ Dedicated training
- ☐ More information on outcomes
- ☐ More scientific publications on the technique
- ☐ Follow-up data on the technique
- ☐ Other (please specify)

European Survey on Neonatal Respiratory Care in NICUs

D. The drugs used in your NICU for neonatal respiratory diseases

D.2 Other Drugs

* 73. Which respiratory analeptics do you use? (give as many answers as necessary)

- ☐ caffeine
- ☐ doxapram
- ☐ other methylxantines (please specify)

* 74. Which type of caffeine do you give to infants? (choose only one answer)

- ☐ Galenic caffeine
- ☐ Brand caffeine
- ☐ We do not use caffeine

European Survey on Neonatal Respiratory Care in NICUs

D. The drugs used in your NICU for neonatal respiratory diseases

* 75. What is the highest loading dose of caffeine that you use?
(please express value in base caffeine mg/kg)

* 76. What is the highest maintenance dose of caffeine that you use?
(please express value in base caffeine mg/kg)

European Survey on Neonatal Respiratory Care in NICUs

D. The drugs used in your NICU for neonatal respiratory diseases

* 77. How do you adjust the caffeine dosage mg/kg? (give as many answers as necessary)

- ☐ According to clinical response
- ☐ According to post-menstrual age
- ☐ You never adjust the standard caffeine dosage

* 78. When do you start prophylactic caffeine in infants with a BW <1250g? (choose only one answer)

- ☐ in the delivery room
- ☐ within 24h of life
- ☐ within 2h of life
- ☐ within 3 days of life
- ☐ within 12h of life
- ☐ No prophylactic use
- ☐ Other (please specify)

* 79. Do you use caffeine or other methylxantines in intubated patients?

- ☐ Yes
- ☐ No

* 80. From what postnatal week do you consider administering steroids? (choose only one answer)

- ☐ First week
- ☐ Second week
- ☐ Third week
- ☐ We do not use postnatal steroids
- ☐ Other (please specify)

European Survey on Neonatal Respiratory Care in NICUs

D. The drugs used in your NICU for neonatal respiratory diseases

* 81. In what circumstances do you use steroids in the first 3 weeks of life? (give as many answers as necessary)

- ☐ Need to facilitate extubation
- ☐ High risk of BPD, regardless of ventilation mode
- ☐ Other (please specify)

* 82. Which postnatal steroid do you use to prevent BPD (i.e. in the first 3 weeks of life)? (choose only one answer)

- ☐ Standard dose Dexamethasone (long cycle)
- ☐ Low dose Dexamethasone (short cycle)
- ☐ Hydrocortisone
- ☐ Methylprednisolone
- ☐ Budesonide + surfactant

* 83. How many postnatal steroid cycles do you typically perform for the same infant?

- ☐ Max 1
- ☐ 2-3
- ☐ >3

* 84. Do you use inhaled steroids?

- ☐ Yes
- ☐ No

European Survey on Neonatal Respiratory Care in NICUs

E. The mechanical ventilators in your NICU

* 85. What features do your mechanical ventilators for invasive ventilation have? (give as many answers as necessary)

- | | |
|---|--|
| <input type="checkbox"/> Comprehensive neonatal-through-adult ventilator, used in neonatal mode | <input type="checkbox"/> Hot-wire flowmeter |
| <input type="checkbox"/> Flow sensor inserted at the Y-piece | <input type="checkbox"/> Pressure trigger |
| <input type="checkbox"/> Pressure line inserted at the Y-piece | <input type="checkbox"/> Electrical diaphragmatic activity trigger |
| <input type="checkbox"/> Algorithm for volume target ventilation (VTV or VG) | <input type="checkbox"/> Abdominal capsule trigger |
| | <input type="checkbox"/> I don't know |
| <input type="checkbox"/> Volume controlled ventilation | |
| <input type="checkbox"/> Pneumotachograph | |

* 86. Which kinds of HFOV do you have? (give as many answers as necessary)

- ☐ with active exhalation generated by a piston
- ☐ with active exhalation generated by a Venturi effect
- ☐ with active exhalation generated by another method
- ☐ I don't know

* 87. How are aerosolized drugs administered during invasive or non-invasive ventilation? (give as many answers as necessary)

- ☐ Using jet nebulizers
- ☐ Using vibrating mesh nebulizers
- ☐ Using ultrasound nebulizers
- ☐ Through the ventilator circuit
- ☐ Outside the ventilator circuit
- ☐ We do not administer inhaled drugs during ventilation

* 88. What gas conditioning mode do you use most?

- ☐ 'Automatic' mode for invasive and non-invasive ventilation
- ☐ 'Set up' mode with the temperature set manually

* 89. Do you have a standardized protocol for the maintenance of respiratory devices?

- ☐ Yes
- ☐ No