NEONATAL RESUSCITATION PROGRAM
CONTENTS

Introduction

Goals and Objectives

The NRP Advisory Board

The NRP course

Monitoring and Reporting
INTRODUCTION

The first few minutes of an infant's life are very important in determining the health of the child. About 10% of all newborns require some degree of resuscitation. Because the need can arise without warning, it is important that every birth be attended by someone who has been trained in initiating a neonatal resuscitation. Additional trained personnel will be necessary if a full resuscitation is required.

The Neonatal Resuscitation Program (NRP) is an educational program designed to teach life support skills to all health care providers that are present at the birth of the newborn infant. In the mid 1970s till 1987 the NRP was developed by the American Academy of Pediatrics (AAP) and The American Heart Association (AHA). This program is being updated on regular basis and it has been recently updated (2010) to incorporate the latest information on how to manage newborns with respiratory and cardiac depression.

Most of health care institutions in Saudi Arabia adopted the NRP, which was developed and updated by the American Academy of Paediatrics and The American Heart Association. Official communications with AAP revealed that AAP doesn’t accredit any centre as NRP training centre outside the United States of America. Currently, in Saudi Arabia NRP is hospital based without any official organization that coordinates between the NRP centres and to monitor certifications. Hospitals usually obtain CME hours from the Saudi Commission for Health Specialty (SCFHS) for NRP provider and instructor courses.

Furthermore, throughout the kingdom there isn’t any statistics regarding the NRP centres and the number of NRP providers and instructors.

According to the decision of the Saudi Commission for Health Specialty (SCFHS) number 100006825 dated 3/12/1431 H the Saudi Neonatal Society (SNS) will be the organizing structure of all NRP centers and neonatal courses across the kingdom.
GOALS AND OBJECTIVES

- To form NRP Advisory Board under the umbrella of SNS supervision.
- To accredit, supervise and monitor all NRP centers (governmental and private) across the country
- To develop a comprehensive accrediting process through which NRP centers will be recognized as NRP Training Centre (NTC)
- To standardize the NRP guidelines and actual clinical practice
- To perform periodic evaluation for certification and re-certification of the NTC across the kingdom according to the most up-to-date international recommendations
- To ensure the NRP courses are performed according to the latest international recommendations and guidelines.
- To establish, across the country, database for the NRP centers and NRP status of the healthcare workers
THE NRP ADVISORY BOARD

The NRP Advisory Board is composed of six members from the SNS Board of directors or outside.

The Board members should be: -

1. Consultant Neonatologist
2. NRP instructor
3. Member of SNS

The Board will meet regularly every three months or upon the call of the director of the NRP Advisory Board.

The Board has the following duties:-

1. To accredit, supervise and monitor all NRP centers across the country
2. To perform periodic evaluation, in order to give certification or re-certification of the NTC across the kingdom according to the most up-to-date international recommendations.
3. To ensure the NRP courses are done and regularly updated according to the latest international recommendations and guidelines.
4. To standardize the NRP guidelines and actual clinical practice.
5. To establish, across the country, database for the NRP centers and NRP status of the healthcare workers
6. To deal with and manage any issue that raises in relation to the NRP across the Kingdom.

7. To liaise with other parties to develop a national NRP to be the local standard guideline for all trainers.

8. Will look thoroughly into any major comments or complaints against any of the NTCs.

9. Monitor the performance and efficiency of all NTCs periodically and provide the necessary support and action.
THE NRP COURSE

All health care institutions that provide delivery of babies have to have their staff trained in NRP.

Assessment and Certification of the NTC

The NRP Advisory Board will assess the following cores of NRP in each NTC

1. **Manpower**

2. **Equipments**

3. **Place**

4. **The process of certification and recertification**

   1. **Manpower**

      1. Each NTC has to have at least three certified NRP instructors.
      2. For each NRP course the ratio of instructor to providers should not exceed 1/5
      3. There must be at least one assigned secretary for the NRP centre that SNS will be in communication with. This secretary should be responsible for NRP registration, CME certification, NRP cards, certificates, data entry and preparing statistics.
      4. The director of the NTC must be a physician with special interest and experience in life support training courses (preferably a neonatologist).
2. **Equipments and supplies**

The latest edition of the NRP book (which contains the DVD with serial number) is part of the supplies that must be available for every candidate.

- The equipments: Following are the basic equipments that should be available in each NTC.

<table>
<thead>
<tr>
<th><strong>Basic Equipment for Neonatal Resuscitation Program Courses</strong></th>
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<tbody>
<tr>
<td>• Newborn manikin  • Intubation head or full-body intubation manikin  • Stethoscope  • Gloves</td>
</tr>
<tr>
<td><strong>Warm</strong>  • Radiant warmer or simulation (tabletop) with surface area to hold equipment</td>
</tr>
<tr>
<td><strong>Position</strong>  • Small towel or cloth diaper for optional shoulder roll</td>
</tr>
<tr>
<td><strong>Suction</strong>  • Bulb suction  • Mechanical suction (or simulation) and suction tubing  • Suction catheters, 5F or 6F, 8F, 10F, 12F or 14F  • Meconium aspirator device  • 8F feeding tube and 20-mL syringe</td>
</tr>
<tr>
<td><strong>Dry</strong>  • Towel or blanket to dry newborn</td>
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</tbody>
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### Ventilate
- Device(s) for delivering positive-pressure ventilation, capable of delivering up to 90-100% oxygen (or simulating)
- Open and close end reservoirs
- Face masks, newborn and premature sizes round and anatomical (cushioned-rim masks preferred)
- Oxygen tubing
- Oxygen or air source with flow-meter and nipple adapter (required for use with flow-inflating bag) flow rate up to 10L/min
- Oxygen mask, tubing, or flow-inflating bag and mask (to deliver free-flow oxygen)
- 8F feeding tube and 20-mL syringe
- Oropharyngeal airways (0, 00, and 000 sizes or 30-, 40-, and 50-mm lengths)

### Intubate
- Intubation head if testing “performing intubation”
- Access to clock or watch with second hand
- Laryngoscope handles with size # 00 # 0 and # 1 compatible blades (straight)
- Endotracheal tubes sizes 2.5, 3.0, 3.5, and 4.0
- Stylet (optional)
- Scissors
- Tape or securing device for endotracheal tube
- CO₂ detector or capnograph
- Alcohol sponges
- Laryngeal mask airway (optional)
- Tape, 1/2 or 3/4 inch

### Medicate
- Epinephrine 1:10,000 in 3-mL or 10-mL ampoules (or substitute water)
- Naloxone hydrochloride 0.4 mg/mL or 1.0 mg/mL 2-mL ampoules (or substitute water)
- Volume expander: normal saline (preferred), Ringer’s lactate (or substitute water)
- Sodium bicarbonate, 4.2% (5 mEq/10 mL) 10-mL ampoules (or substitute water)
- Dextrose 10%, 250 mL
- Assorted syringes, 1, 3, 5, 10, 20, 50 mL needles, or puncture devices/needleless system supplies
- Medication labels and waterproof pen
- Normal saline for flushes (or substitute water)
- Equipment for emergency umbilical venous catheter placement
  - Umbilical tape
  - Scalpel blade and handle
  - Antiseptic prep solution (may simulate with cotton-tipped applicators)
  - Curved forceps or hemostat to stabilize umbilical cord or catheter
  - 10-cc and 20-cc syringes
  - Volume expander of choice (such as 100-mL bag of normal saline)
  - Needle or puncture device to access volume expander
  - Umbilical catheters, 3.5F, 5F
  - Three-way stopcocks
  - Securing device for umbilical venous catheter (optional)
- Sterile gloves

| Available for each course | • Silicone spray for use with some types of intubation heads
| | • Extra balloons and rubber bands for intubation head “lungs”
| | • Extra bulbs and batteries for laryngoscope
| | • Oxygen regulator and key or wrench for oxygen tank if oxygen is used

| Optional | • Metronome to simulate various newborn heart rates
| | • Cardiac monitor/leads/alcohol sponges
| | • Umbilical cord model for umbilical venous catheter placement practice station
| | • Intubation doll
| | • Laryngeal mask airway
| | • T-piece resuscitator

For resuscitation of very preterm babies,
- Food-grade polyethylene bag (1-gallon size) or plastic wrap
- Pulse oximeter and oximeter probe
- Oxygen blender (may draw this on cardboard and simulate its use)
- Chemically activated warming pad
3. Place

For each NTC there must be a suitable place to run the course with the following requirements: -

1. Classroom (s) capable of accommodating all candidates
2. Projector screen and PC in the classroom
3. Space to accommodate training and practicing for all candidates
4. Enough space for the secretary and the director of the centre
5. Suitable store for the NRP equipments and supplies
6. Supportive facilities for the candidates e.g. cafeteria, rest rooms…etc

4. The process of certification and recertification

Certifying centers as NRP Training Centre NTC:-

1. A letter will be directed from the centre wishing to be certified as NTC to the NRP Advisory Board with the following documents: -
   - Application form
   - Valid NRP instructors certificates
2. The NRP Advisory Board will meet and discuss the request.
3. If all the documentations are complete, then at least two members of the NRP Advisory Board will go for a site visit to evaluate the centre.
4. The NRP Advisory Board will meet again to discuss the final decision within a month from the site visit.

5. Official result of the visit will be sent to the centre through the NRP Advisory Board.

6. The certification is valid for 3 years, and should be renewed by the same process of application and evaluation mentioned above.

7. The newly approved centre will be issued an ID number from the SNS composed of three digits, the first digit will indicate the area and the second and third digits are the number of this centre within its area e.g. 123 is centre number 23 in Riyadh area and so on.

8. The certification fees per every three years as follows:-
   1. NTC for NRP provider course only 3500 SR
   2. NTC for both NRP provider and instructor course 5000 SR

9. The centre can appeal the decision of the NRP Advisory Board by sending a letter to the director of the NRP Advisory Board asking for reconsidering the evaluation.

10. Each NTC has to submit the yearly academic calendar to the NRP Advisory Board one month before the start of each academic year.

11. If the centre is outside the evaluator’s area of residence then the SNS will pay All the expenses of the trip.
12. Currently there will be no limits of number of centers per city but in the future we may limit
the numbers according to certain criteria.

**Re-certifying centers as NRP Training Centre NTC will be performed through the following process**

1. A letter will be directed from the centre wishing to be recertified as NTC to the NRP Advisory
   Board with the following documents:-
   - Application form
   - Valid NRP instructors’ certificates

2. If all the requirements are met, the NRP Advisory Board will look into the performance of the
   centre in the last three years along with all the statistics from that centre in addition to the
   indicators of success and failure

3. If there is no major concern, the NRP Advisory Board can re-certify the centre for three, two
   or one year depending on the evaluation of the centre. Site visit can be waived if agreed by the
   NRP Advisory Board.

4. The centre will pay the annual fees as indicated in item 8 of the process of certification and
   recertification

5. The centre can appeal the decision of the NRP Advisory Board by sending a letter to the
   director of the NRP Advisory Board asking for reconsidering the evaluation.

6. The fee for the NRP course is **500 SAR** including the latest edition of the original NRP
   textbook and 250 SAR for the renewal.
A minimum of two NRP courses per year is needed to maintain the certification

NRP cards and CME Certificates:

- SNS will communicate with Saudi Commission for Health Specialty (SCFHS) for approval of CME certificates

- NRP certificates will be issued from the SNS with 9 digits, first three is the centre number and the last six is the serial certificate number

- CME certificates and NRP cards must be ready immediately after a successful completion of the NRP course.

- CME certificates and NRP cards will be issued by the NRP Advisory Board
MONITORING AND REPORTING

- Each NTC has to have its own statistics and registration forms developed by the NRP Advisory Board for all NRP courses and candidates.
- Each NTC has to submit its report to the NRP Advisory Board every six months.
- Not submitting two consecutive reports to the NRP Advisory Board will lead to suspension of the centre as NTC until further decision from the NRP Advisory Board.
- The data from different NTCs across the kingdom will be sent to the NRP Advisory Board where it will be entered into database for future use.
- The NRP Advisory Board will create its own annual report based on all the information gathered from NTCs across the kingdom and present it to the SNS Board Members.
- For major violations of the SNS bylaws the NTC will be suspended if decided by the NRP Advisory Board.
Saudi Neonatology Society Board members

1. Dr. Saleh Al-Alaiyan
2. Dr. Saad Alsaedi
3. Dr. Abdulhakeem Kattan
4. Dr. Fawaz Kashlan
5. Dr. Khalid Alfaleh
6. Dr. Fahad Alaql
7. Dr. Fahad Alharbi
8. Dr. Abbas Al Omran
9. Dr. Sameh Abozaid

NRP Advisory Board

1. Dr. Sameh Abozaid
2. Dr. Saad Alsaedi
3. Dr. Fahad Alaql
4. Dr. Abbas Al Omran
5. Dr. Saif Alsaif
6. Dr. Ibrahim Alhefzi