



NEONATAL RESUSCITATION CURRICULUM 2025



Professional Skill Development Centre
University of Health Sciences Lahore

NEONATAL RESUSCITATION CURRICULUM – 2025



UNIVERSITY OF HEALTH SCIENCES LAHORE

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Course Rationale and Overview

This course provides participants with the knowledge and skills they need to assess, recognize and care for neonates who require resuscitation to act quickly and confidently. The course emphasizes providing high-quality newborn resuscitation by integrating cognitive and psychomotor skills with critical thinking and problem solving to achieve the best possible patient outcomes. This neonatal resuscitation curriculum directly supports global and national health priorities in newborn care. It contributes to **Sustainable Development Goal 3 (Target 3.2)** – ending preventable neonatal deaths – by equipping future healthcare providers with life-saving newborn resuscitation skills. The training aligns with Pakistan’s National Health Vision and Newborn Care initiatives, aiming to reduce the neonatal mortality rate (currently among the highest globally) through improved clinical readiness. By integrating this course, UHS fulfills its mission to strengthen the health system and address key neonatal health indicators, ultimately contributing to healthier start-of-life outcomes nationwide.

Course Outcomes

After completing the course, participants should be able to:

1. Demonstrate neonatal resuscitation skills, including providing initial steps of Positive Pressure Ventilation (PPV), corrective steps, chest compressions, and drug administration.
2. Perform both as a member and a leader of the team during newborn resuscitation.
3. Apply a systematic approach in evaluation and management of neonatal resuscitation.
4. Effectively recognize any special conditions due to which the neonate may require resuscitation.

Target Audience

Undergraduate medical students (clinical years 3 – 5)

Course Structure

The workshop is divided into eight modules, each addressing a phase of neonatal resuscitation. Each module is followed by hands-on group work sessions. The duration and items required for each segment are given in the session plan given in annexure 1.

- i. Module 1. Setting the scene
- ii. Module 2. Physiology of transition from intra- to extrauterine life
- iii. Module 3. Preparation for birth
- iv. Module 4. Initial steps of neonatal resuscitation
- v. Module 5. Management of airway & breathing and improving ventilation
- vi. Module 6. Chest compression
- vii. Module 7. Drugs and vascular access
- viii. Module 8. Integrated approach

MODULE 1: SETTING THE SCENE

Learning objectives:

- To apprise the students about the course, its need, importance, and format.
- To formally introduce the facilitators and students and build rapport between them for fruitful facilitation and understanding.
- To arrange the seating of students for clear viewing of facilitator and screen and for comfortable communication and learning.
- To introduce each item of equipment used in training, its use and to get manikins ready for use.
- To recognize the concepts and level of understanding of participants, prior to formal teaching, about neonatal resuscitation in the Golden Minute and care of baby during the Golden Hour.

MODULE 2: PHYSIOLOGY OF TRANSITION FROM INTRA- TO EXTRAUTERINE LIFE

Learning objectives:

- To understand the physiological changes that occur during and transition after birth
- To realize the importance of breathing, changes in pulmonary vascular resistance and pulmonary blood flow
- To learn various components of cardiovascular transition at birth and changes from fetal to neonatal circulation.
- To understand interdependence of respiratory and cardiovascular transition.
- To learn the effect of delayed or deranged transition.

MODULE 3: PREPARATION FOR BIRTH

Learning objective:

- To learn basic requirements for safe and effective neonatal resuscitation

MODULE 4: INITIAL STEPS OF NEONATAL RESUSCITATION

Learning objective:

- Learning how to assess and manage a newborn that does not require cardio-respiratory resuscitation at birth and includes initial assessment, drying and stimulation, breathing assessment and routine care.

MODULE 5: MANAGEMENT OF AIRWAY & BREATHING, IMPROVING VENTILATION AND CPAP

Learning objectives:

- To learn the action steps required in the first minute after birth and the technique of delivering air to the lungs in newborns requiring help in initiating breathing.
- To understand the steps of improving ventilation i.e., MR.SOPA, its sequence and technique.
- To learn the indications and techniques of instituting nasal CPAP

MODULE 6: CHEST COMPRESSIONS

Learning objectives:

- To learn the indications and technique of chest compressions for establishing adequate blood circulation.

MODULE 7: DRUGS AND VASCULAR ACCESS

Learning objectives:

- To learn about indications, doses and routes of administration of drugs recommended for use during resuscitation.

MODULE 8: INTEGRATED APPROACH

Learning objectives:

- To revise all the steps of resuscitation in sequence with their timelines

Assessment Policy

Passing marks will be 70% for posttest on Skills stations. Students from 60% -69% will be given a chance to reappear for posttest and skill test on the same day. Less than 60% will reappear with next batch. All courses held at different institution will be monitored for quality assurance.

Assessment Plan

- **Pre-Test (Knowledge Check):** 10 one-best-answer MCQs. This is a formative assessment intended to gauge baseline knowledge; the score does not count toward passing, but guides facilitators on areas to emphasize.
- **Post-Test:** 10 one-best-answer MCQs (same format as pre-test). This is summative; a minimum of 70% is required to pass (students scoring 60–69% may reattempt on the same day, below 60% must retrain with the next batch).
- **OSCE (Objective Structured Clinical Examination):** 1 scenario-based skills exam. This is summative, evaluating hands-on competency in an integrated resuscitation scenario. Students must demonstrate all critical steps (per the checklist) to pass.
- **In-course Skill Practice:** Ongoing in modules 4–8. These practice sessions are formative – facilitators observe and give real-time feedback on technique (e.g., during group practice of bag-mask ventilation). While not graded, participation is mandatory, and feedback helps prepare students for the OSCE.
- **Feedback Session:** End-of-course. Participants complete a feedback form (course evaluation). This is formative for the curriculum itself; trends in feedback are reviewed by faculty to inform future improvements (a quality improvement loop).

Essential Materials and Resources Required

Detailed requirements for conducting a course are given in the check list given below as Annexure 2.

Recommended Faculty

Certified facilitators from among the following:

- Neonatologist / Pediatrician
- Emergency physician
- Doctors/ nurses / paramedics

Session Plan
(Sample for a 4-hour course)

*[Resource: Pakistan's Neonatal Resuscitation Manual: Facilitator Guide (FG) and
PowerPoint presentation]*

Timing	Session	Annexure & Slide #	Page # of FG
09.00-09.05 (05 mins)	Registration & welcome	Annexures 5.2, 5.3, 5.4	25, 26, 27
09.05-09.10 (05 mins)	Setting the scene <ul style="list-style-type: none"> • Introduction of training course, facilitators & participants 	Annexure 5.13 Slides 1,3,5,6	47, 48, 49
09.10-09.20 (10 mins)	Knowledge check (Pre-test)	Annexure 5.7	32, 33
09.20-09.30 (10 mins)	Physiology of transition from intra- to extrauterine life	Annexure 5.14 Slides 1 – 3, 6, 9 11	51 – 56
09.30-09.45 (15 min)	Preparation for birth <ul style="list-style-type: none"> • Review of mother's medical history • Parental counselling • Organizing team and reviewing plan • Preparing the area for resuscitation • Hand hygiene • Checking equipment 	Annexure 5.15 Slides 1 - 12	57 – 62
09.45-10.00 (15 mins)	Initial steps of neonatal resuscitation <ul style="list-style-type: none"> • Initial assessment • Drying and stimulation • Assessment of breathing/crying & heart rate • Routine care <ul style="list-style-type: none"> – Keeping warm with skin-to-skin contact – Monitoring breathing and temperature – Delayed cord clamping – Helping initiate breastfeeding 	Annexure 5.16 Slides 1 - 14	63 – 69
10.00-10.10 (10 mins)	Group practice	Annexure 5.12	40 – 46
10.10- 10.35 (25 mins)	Management of airway & breathing <ul style="list-style-type: none"> • Keeping warm • Airway opening and clearing • Ventilating with bag and mask • Oxygen supplementation • CPAP Improving ventilation <ul style="list-style-type: none"> • Mask adjustment • Reposition head and neck • Suction of mouth and nose • Open the mouth • Pressure increase • Alternate airway 	Annexure 5.17 Slides 1 - 29	70 – 84

10.35-10.50 (15 mins)	Group practice	Annexure 5.12	40 – 46
10.50-11.15 (25 mins)	Chest compressions <ul style="list-style-type: none"> • Assessment of heart rate • Indication of CC • Technique <ul style="list-style-type: none"> – Position of rescuer – Position of hands – Depth of compressions – Rhythm and compression to ventilation ratio • Oxygen supplementation 	Annexure 5.18 Slides 1 - 14	85 – 91
11.15-11.30 (15 mins)	Group practice	Annexure 5.12	40 – 46
11.30-11.40 (10 mins)	Drugs & vascular access <ul style="list-style-type: none"> • Drugs and indications • Dose of drugs • Routes of administration 	Annexure 5.19 Slides 1 – 6 & 8, 9	92 – 96
11.40-12.05 (25 mins)	Integrated approach	Annexure 5.23 Slides 1 – 8 & 13	115 – 118 & 121
12.05-12.30 (25 mins)	Group practice	Annexure 5.12	40 – 46
12.30-12.40 (10 mins)	Knowledge check (Post-test)	Annexure 5.7	32, 33
12.40-13.00 (20 mins)	OSCE	Annexure 5.9	35, 36
13.00	Course feedback (modified for students) & end of course	Annexure 5.10	37, 38

Essential Materials and Resources Required

Check list

For 20 – 25 participants/5 tables and 01 head table

[Resource: Pakistan's Neonatal Resuscitation Manual: Facilitator Guide (FG)]

No.	ITEMS	QUANTITY	CHECK
Logistical arrangements			
1	Venue/hall	1	
2	Seating arrangement (Tables & chairs)	1 (Annexure 5.2)	
3	Flip chart stand for algorithms	6	
Audio-visual			
4	Multimedia projector	1	
5	Multimedia projector screen	1	
6	Sound system with:		
	i. Hand-held microphones	2	
	ii. Collar microphone	1	
	iii. Speakers	2	
7	Computer along with connecting leads	1	
8	PowerPoint presenter	1	
Stationery			
9	Document folder (For keeping all printed material for the day)	1	
10	Name badges for facilitators & participants	1/person	
11	Plastic pouch/bag	1/person	
12	Writing pad	1/person	
13	Ball pen	1/person	
Resource materials for participants			
14	Pakistan's Neonatal Resuscitation Manual: Provider guide (for students)	1/participant	
15	Pakistan's Neonatal Resuscitation Manual: Facilitator Guide (For new facilitators only)	1/new facilitator	
16	Neonatal resuscitation algorithm poster	6	
17	Neonatal resuscitation algorithm for birth outside delivery room	6	
18	Neonatal resuscitation algorithm for resuscitation inside neonatal unit	6	

	Printouts		
19	Attendance sheet for facilitators	1 (Annexure 5.3)	
20	Attendance sheet for participants	1 (Annexure 5.4)	
21	Mentors list	1 for each day (Annexure 5.5)	
22	Faculty & schedule of course	1/person (Annexure 5.6)	
23	Knowledge check (Pre & post-tests)	2/participant (Annexure 5.7)	
24	Key of knowledge check (Pre & post-tests)	1 (Annexure 5.8)	
25	Objective Structured Clinical Examination (OSCE)	1/participant (Annexure 5.9)	
26	Course evaluation & feedback form	1/participant (Annexure 5.10)	
27	Participants' assessment record form	1 (Annexure 5.11)	
28	Practice scenarios	1/facilitator (Annexure 5.12)	
	PowerPoint presentations (With Course Manager. Handouts given in this Facilitator Guide)		
29	Introduction to neonatal resuscitation	1 (Annexure 5.13)	
30	Physiology of transition from intra- to extrauterine life	1 (Annexure 5.14)	
31	Preparation for birth	1 (Annexure 5.15)	
32	Initial steps of neonatal resuscitation	1 (Annexure 5.16)	
33	Management of airway & breathing, improving ventilation & CPAP	1 (Annexure 5.17)	
34	Chest compressions	1 (Annexure 5.18)	
35	Drugs & vascular access	1 (Annexure 5.19)	
36	Post resuscitation care and ethical considerations	1 (Annexure 5.20)	
37	Special conditions	1 (Annexure 5.21)	
38	Resuscitation of neonate outside delivery room	1 (Annexure 5.22)	
39	Integrated approach to neonatal resuscitation	1 (Annexure 5.23)	
	Equipment		
40	Neo Natalie set	6	
41	Preemie Natalie set	6	
42	Plastic bags	6	
43	nCPAP device with accessories (Blender, humidifier, breathing circuits, Hudson prongs)	1/table	
44	Disposable T-piece resuscitator with PIP & PEEP controllers	1/table	

