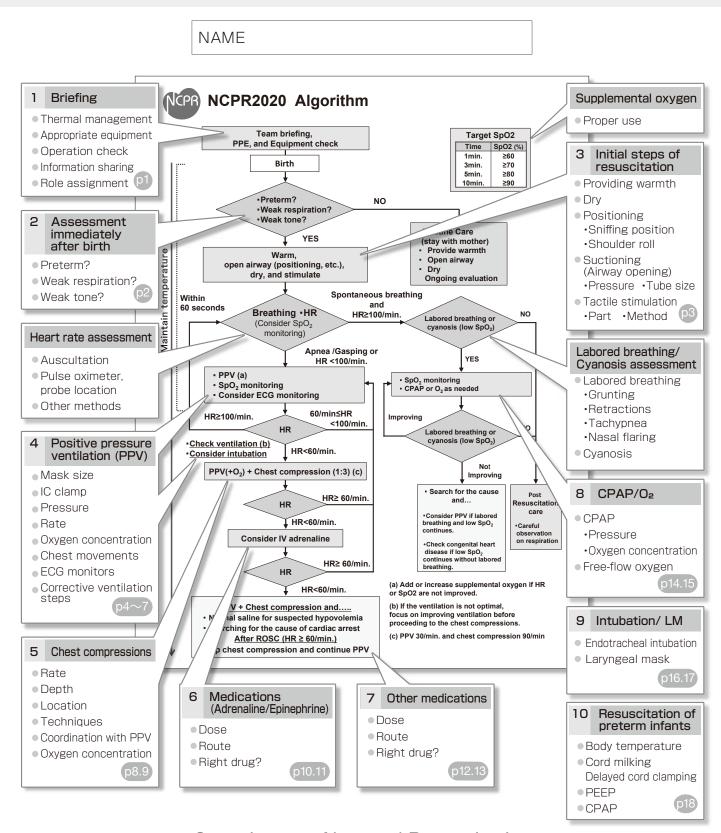
#### The Neonatal Cardiopulmonary Resuscitation (NCPR) 2020

### Skill Training Course

#### Self-Check Sheet



Committee on Neonatal Resuscitation

Japan Society of Perinatal and Neonatal Medicine

# 1 Briefing

NAME			(	NCPR NCPR2020 Algorithm
MEMO			Maintain temperature	Target SpO2 Time SpO2 (%) Time
				Check if you understand or can perform the item well before training. Check if you understood or performed the item well after training.
	Check for critical know	vled	ge	e and performance Pre-training Post-training check. check.
Knowledge	Understand the importance of briefing	with 1	tea	am members before resuscitation.
	Discuss necessary measures to p	reve	nt	infection.
Skill	Confirm necessary equipment for r	esus	sci	itation.
	Confirm and understand the roles	of re	su	uscitation team members.

## 2 Assessment immediately after birth

NAME	NCPR NCPR2020 Algorithm
	Team briefing, Target SpO2
MEMO	PPE, and Equipment check    Time   SpO2 (%)
	Peterm?  Wask respiration?  Wask respiration?  Wask respiration?  Wask respiration?  Warm, Open airway (positioning, etc.), dry, and stimulate  Spontaneous breathing  Breathing of HR R2100min.  Apnea (Sasping or HR <100min.  PPV (-C) a Check ventilation (b)  -Consider EGG monitoring  -Check ventilation (b)  -Consider intubation  HR2100min.  HR +R260min.  PPV(+O <sub>2</sub> ) + Chest compression and  Normal saline for suspected hypovolemia  - Normal saline for suspected provolemia  Searching for the cause arrist  Routine Care (stay with mother)  - Open airway  Open airway  Open airway  - Op
	After ROSC (HR ≥ 60/min.) Stop chest compression and continue PPV  (c) PPV 30/min. and chest compression 90/min  (d) PPV 30/min. and chest compression 90/min  (e) PPV 30/min. and chest compression 90/min  (f) PPV 30/min. and chest compression 90/min  (g) PPV 30/min. and chest compression 90/min  (
	* Check if you understand or can perform the item well before training.  Check if you understood or performed the item well after training.
	Check for critical knowledge and performance Pre-training Post-training check. check.
Vnowledge	Understand three evaluation points to be made immediately after birth.  →(1) Preterm, (2) Weak breathing/Crying, (3) Weak muscle tone
Knowledge	Understand when initial steps for resuscitation are required.  →Perform the initial steps of resuscitation if any one of the three evaluation points is met.
	Check gestational age (preterm or term).
Skill	Check respiration or crying.
	Check muscle tone.

## 3 Initial steps of resuscitation

NAME		NCPR NCPR2020 Algorithm
MEMO		Team briefing, PPE, and Equipment check  Birth  Preterm?  Weak tone?  Weak tone?  Weak tone?  Weak tone?  Within  Spontaneous breathing or or cyanosis (low SpO <sub>2</sub> )  Apnea /Gasping or HR <100/min.  PPV (a)  SpO <sub>2</sub> monitoring  Apnea /Gasping or CPAP or O <sub>2</sub> as needed  PR  **Check ventilation (b)  **Check ventilation (b)  **Consider intubation  **Target SpO2  Time SpO2 (%)  Time SpO2  (stay with mother)  Provide warmth  Open airway  Dry Ongoing evaluation  NO  **Cyanosis (low SpO <sub>2</sub> )  **SpO <sub>2</sub> monitoring  **CPAP or O <sub>2</sub> as needed  **Check ventilation (b)  **Consider intubation  **Check ventilation (b)  **Consider intubation  **Target SpO2  Time SpO2  (stay with mother)  Provide warmth  Open airway  Ongoing evaluation  NO  cyanosis (low SpO <sub>2</sub> )  **SpO <sub>2</sub> monitoring  **CPAP or O <sub>2</sub> as needed  **Check ventilation (b)  **Consider intubation  **Check ventilation (b)  **HR **Consider intubation  **Consider intubation  **Consider intubation  **Target SpO2  Time SpO2  Time SpO2  Time SpO2  Toroide warmth  Open airway  Orgoing evaluation  NO  cyanosis (low SpO <sub>2</sub> )  **NO  Toroide warmth  Open airway  Orgoing evaluation  NO  cyanosis (low SpO <sub>2</sub> )  **NO  Toroide warmth  Open airway  Orgoing evaluation  NO  Consider ECG monitoring  **CPAP or O <sub>2</sub> as needed  **NO  Toroide warmth  Open airway  Orgoing evaluation  NO  Consider ECG monitoring  **CPAP or O <sub>2</sub> as needed  **NO  Toroide warmth  Open airway  Orgoing evaluation  NO  Toroide warmth  Open airway  Open
		PPV(+O₂) + Chest compression (1:3) (c)  HR ←60/min.  Consider IV adrenaline  HR ←60/min.  HR ←60/min.  HR ←60/min.  Consider IV adrenaline  HR ←60/min.  HR ←60/min.  FPV + Chest compression and  Normal saline for suspected hypovolemia Searching for the cause and  (a) Add or increase supplemental oxygen if HR or \$pO₂ continues without labored breathing.  (b) if the ventilation is not optimal, focus on improving ventilation before proceeding to the chest compressions.  (c) PPV 30/min. and chest compression 90/min
	Check	** Check if you understand or can perform the item well before training Check if you understood or performed the item well after training.  **Tor critical knowledge and performance Pre-training Check. Check.
Preparation	Select appropriate size of suction catheter.	For term infants with clear amniotic fluid: 10Fr or 8Fr.  For low birth weight infants with clear amniotic fluid: 8Fr or 6Fr.  For term infants with meconium-stained amniotic fluid: 12Fr or 14Fr.
	Warmth and dry.	Bring to radiant warmer.  Wipe airway amniotic fluid with a pre-warmed dry towel.  Remove wet towel.
	Positioning.	Keep sniffing position with shoulder roll.
Skill	Open-airway management.	Avoid deep insertion of suction catheter.  Keep suction time within 5 seconds.  Understand the order of suction. →Suction the oral cavity first and then the nasal cavity.  Use the negative pressure within 100 mmHg (13 kPa).
	Tactile stimulation.	Rub the neonate's back, trunk, or limbs with warmed towel gently.  Tap or flick the soles of the neonate's feet briefly.

# 4-1 Ventilation (self-inflating bag)

NAME			NCPR	NCPR2020 Algorithm		
MEMO		** Maintain famonasatura	• Ch	Team briefing, PPE, and Equipment check  Birth  Preterm? Weak respiration? Weak tone?  VES  Warm, open airway (positioning, etc.), dry, and stimulate  Reconds  Breathing 'HR (Consider SpO_monitoring) Consider SpO_monitoring Consider ECG monitoring HR2100/min.  PPV (a) SpO_monitoring Consider ECG monitoring HR2100/min.  PPV(+O <sub>2</sub> ) + Chest compression (1:3) (c)  HR 60/min.  PPV + Chest compression and Normal saline for suspected hypovolemia Searching for the cause of cardiac arrest After ROSC (HR 2 60/min.)  Stop chest compression and continue PPV	Routine Care (stay with mot - Provide war - Open airway - Dry Ongoing eval s breathing d - Search for th and  - Search for th and  - Cansider PPV if breathing and los continues.  - Check congenit disease if low Sy continues without breathing.  (a) Add or increase supply or Sp02 are not improved to the check to ongenit disease if low Sy continues without breathing.  (a) Add or increase supply or Sp02 are not improved to the chest configuration is no focus on improving ventil proceeding to the chest c (c) PPV 30/min. and chest	in. 270 in. 280 in. 280 in. 290  Ither) in ther) in ther) in the ther) in t
		<b>V</b>	]Check	if you understood or performed		
	Check for critical kno	wledge	e and	d performance	check.	check.
Knowledge	Understand the indications for ver →Recognize apnea or bradycardia of less t Understand that effective ventilation at the latest if the child does not res Understand the oxygen concentration to u →21% (room air)	han 100 should spond to	/min a be in the i	itiated by 60 seconds of nitial steps of resuscitat	life	
Preparation	Select the bag for neonate.  Check the bag before use (pressu Understand criteria to select the page of the page	mask s	ize.			
Skill	Keep sniffing position with should.  Hold the neonate's jaw and the m  Put the mask on the neonate's fa  Provide ventilation at a rate of 40  Check chest movements.	ask wit	th the	e IC clamp technique.  airtight seal.		

# 4-2 Ventilation (flow-inflating bag)

NAME			(	ΝĆ	PR NCPR2020 Algorithm		
MEMO			Maintain temperature		Preterm?  Preterm?  Warm, open airway (positioning, etc.), dry, and stimulate  Within  Spontaneo  So seconds	NO  Routine Care (stay with moth Provide warm Open airway Dry Ongoing evalu us breathing nd us breathing nd Labored breathi cyanosis (low S	er) h. ≥60 h. ≥70 h. ≥70 h. ≥80 h. ≥90  er) h. ≥90  NO
					PPV(+O <sub>2</sub> ) + Chest compression (1:3) (c)  HR + 60/min.  Consider IV adrenaline  HR < 60/min.  PPV + Chest compression and  Normal saline for suspected hypovolemia  Searching for the cause of cardiac arrest After ROSC (HR ≥ 60/min.)  Stop chest compression and continue PPV  eck if you understand or can perfect if you understood or performe	Search for the and      Consider PPV if it breathing and low continues.      Check congenital disease if low spock continues without breathing of continues without breathing of the property of the continues of the property of the continues of the property of the property of the continues of the property of the continues of the continues of the property of the continues	Resuscitation care spor. heart careful observation on respiration
	Check for critical kno					Pre-training check.	Post-training check.
Knowledge	Understand the indications for ve →Recognize apnea or bradycardia of less of Understand that effective ventilation at the latest if the child does not resolve Understand the oxygen concentration to the →21%(room air)	than 10 n shou spond	00/ ld l to	mi be th	e initiated by 60 seconds one initial steps of resuscita	f life tion.	
Preparation	Attach a manometer (pressure gas Set flow rate to approximately 5 the Understand criteria to select the Select appropriate mask size. (Cover the	to 10 mask	ml si:	ize	).	yes.)	
Skill	Keep sniffing position with should Hold the neonate's jaw and the mask on the neonate's fall Initiating ventilation with pressure Provide ventilation at a rate of 40 Check chest movements.	nask w ace an	vith nd I O 1	h t ke to	the IC clamp technique. ep airtight seal. 30 cmH <sub>2</sub> O.		

# 4-3 Ventilation (T-piece resuscitator)

NAME	NCPR NCPR2020 Algorithm
MEMO	Target Sp02  Team briefing, PPE, and Equipment check  Birth  Preterns piration?  Warm, Open alrawy (positioning, etc.), dry, and stimulate  Within  Spontaneous breathing Open alrawy (positioning, etc.), dry, and stimulate  Within  Spontaneous breathing Open alrawy (positioning, etc.), dry, and stimulate  Within  Spontaneous breathing Open alrawy (positioning, etc.), dry, and stimulate  Within  Spontaneous breathing Open alrawy (positioning, etc.), dry, and stimulate  NO Opsing evaluation  NO Opsing ev
	Normal saline for suspected hypovolemia     Searching for the cause of cardiac arrest     After ROSC (HR ≥ 60/min.)  Stop chest compression and continue PPV  Stop chest compression and continue PPV
	*☑Check if you understand or can perform the item well before training ☑Check if you understood or performed the item well after training.
	Check for critical knowledge and performance Pre-training Post-training check. check.
Knowledge	Understand the indications for ventilation.  →Recognize apnea or bradycardia of less than 100/min after initial steps of resuscitation.  Understand that effective ventilation should be initiated by 60 seconds of life at the latest if the child does not respond to the initial steps of resuscitation  Understand the oxygen concentration to use when initiating ventilation in term neonates.  →21%(room air)
Preparation	Check gas supplies at delivery room (oxygen or air or mixed gas).  Connect the gas supply and T-piece resuscitator (tube of gas supply or piping tube).  Set the dedicated circuit.  Set the flow rate to approximately 5 to 10 mL/min.  Set the peak inspiratory pressure (PIP) to 20 to 30 cmH₂O  and the PEEP to 5cmH₂O by using a test bag.  Understand criteria to select the mask size.  →Select appropriate mask size (cover the neonate's nose and mouth but not the eyes.)
Skill	Keep sniffing position with shoulder roll (assess the open airway).  Hold the neonate's jaw and the mask with the IC clamp technique.  Put the mask on the neonate's face and keep airtight seal.  Provide ventilation at a rate of 40 to 60 breaths per minutes by opening and closing the expiratory valve opening.  Check chest movements.

## 4-4 Corrective ventilation steps

NAME		NCPR NCPR2020 Algorithm
MEMO		Target SpO2    Time   SpO2 (ts)
	Check for criti	ical knowledge and performance Pre-training Post-training check. check.
Knowledge	Understand three indicators for assessing the achievement of effective ventilation.	Check heart rate improvement.  Re-check chest movements.  Check end-tidal CO2 (while the neonate is intubated).
Skill	Solve problems by using these corrective steps when the ventilation is not effective.	Check airtight seal between the mask and the neonate's face (Check the IC clamp technique).  Check "sniffing position" for airway management.  Perform oral/nasal suctioning.  Increase ventilation pressure.

# 5-1 Chest compressions (two-thumb technique)

NAME	(NCPR) NCPR2020 Algorithm	
	Team briefing,  PPE, and Equipment check  Target SpO2  Time   SpO2 (%)	
MEMO	Birth   1   2   2   2   2   2   2   2   2   2	
	Preterm? NO Weak respiration? Weak tone?	
	YES Routine Care (stay with mother)	
	open airway (positioning, etc.), dry, and stimulate  Ongoing evaluation	
	Breathing -HR HR2100/min. Labored breathing or cyanosis (low SpO <sub>2</sub> )  Monitoring Apnea /Gasping or HR <100/min.  Apnea /Gasping or HR <100/min.	
	PPV (a) SpO <sub>2</sub> monitoring Consider ECG monitoring  • SpO <sub>2</sub> monitoring	
	HR≥100/min. HR <00/min≤HR <100/min. Labored breathing or NO	
	• <u>Check ventilation (b)</u> • <u>Consider intubation</u> PPV(+O <sub>2</sub> ) + Chest compression (1:3) (c)  Not Improving	
	HR HR≥ 60/min.  Search for the cause and Resuscit	itation
	Consider PV if labored breathing and low Sp0 <sub>2</sub> continues.  Consider IV adrenaline  Check congenital heart  Carrú  Carrú	l ation
	HR≥ 60/min.  disease if low SpO₂ continues without labored breathing.	
	PPV + Chest compression and  Normal saline for suspected hypovolemia  A both the ventilation is not optimal, focus on improving ventilation before	к
	Searching for the cause of cardiac arrest     After ROSC (HR ≥ 60/min.)      Stop chest compression and continue PPV    Stop chest compression and continue PPV	in
	*☑Check if you understand or can perform the item well before trai ☑Check if you understood or performed the item well after training	
	Check for critical knowledge and performance Pre-training Post-train check. check.	
	Understand indications for chest compressions.  →When the heart rate is less than 60/min despite effective ventilation for 30seconds.	
Knowledge	Understand to increase oxygen when initiating chest compressions.	
	Understand indications for stopping chest compressions.  →When the heart rate is more than 60/min.	
	Encircle the chest with the two hands leaving the thumbs on the chest.	
	Administer compressions on the middle third of the sternum.	
	Administer compressions to a depth of one-third of the anterior-posterior diameter of the chest.	
Skill	Do not remove the fingers from the chest even when releasing pressure.	
2	Administer three compressions followed by one ventilation (each cycle is performed over a period of 2 seconds).	
	Administer 90 chest compressions and 30 rescue breaths in a minute.	
	The care provider performing chest compressions act as pacemakers.	

# 5-2 Chest compressions (two-finger technique)

			_	
NAME				NCPR NCPR2020 Algorithm
MEMO		*	Maintain temperature	
	Check for critical kno			Check if you understood or performed the item well after training.  Pre-training Post-training
	Understand indications for chest			CHECK. CHECK.
	→When the heart rate is less than 60/m	-		
Knowledge	Understand to increase oxygen w			
	Understand indications for stoppi →When the heart rate is more the			
	Administer chest compressions wand middle finger or the middle fire			
	Place the other hand or a massag	ge bo	ard	d on the neonate's back.
	Administer compressions on the I	ower	thi	nird of the sternum.
Skill	Administer compressions to a dep diameter of the chest.	th of	on	ne-third of the anterior-posterior
ÖKIII	Do not remove the fingers from th	e che	st	even when releasing pressure.
	Administer three compressions for (3 to 1 ratio with 2 seconds for e			
	Administer 90 chest compression			
	The care provider performing ches by saying the rhythm aloud.	st cor	mp	pressions act as pacemakers

# 6-1 Intravenous adrenaline administration

NAME			_	NCPR NCPR2020 Algorithm
			1	Team briefing, Target Sp02
MEMO			Maintain temperature	PPE, and Equipment check  Birth  Preterm?  NO
				Normal saline for suspected hypovolemia     Searching for the cause of cardiac arrest     After ROSC (HR ≥ 60/min.)      Stop chest compression and continue PPV
	Check for critical know	<b>▼</b> ✓	<b>/</b> (	☑ Check if you understand or can perform the item well before training. ☑ Check if you understood or performed the item well after training. ☑ Pre-training Post-training
				CHECK. CHECK.
	Understand indications for adrenal →When the heart rate is less than and chest compression.			
Knowledge	Understand the route for intraveno (umbilical vein, intraosseous route,			
	Understand the dose of adrenaline →Ten-fold diluted adrenaline (0.01			
Preparation	Dilute one ampule (1 mL) of adrenaling of normal saline (10 mL total) to prepare			
	Administer a dose of 10-fold dilute	ed adre	er	renaline rapidly.
Skill	Flush the route with normal saline of the entire dose after administer			
	Assess the heart rate every 30 self the heart rate remains less than doses every 3 to 5 minutes.	conds	3 6	s after adrenaline administration.

# 6-2 Endotracheal adrenaline administration

NAME	NCPR NCPR2020 Algorithm	
MEMO	Target S  Birth  Preterm?  NO  Wask respiration?  Wask tone?  Wask tone?  Wask tone?  Wask tone?  Wask tone?  Wash tone?  Wash tone?  Wash tone?  Wash tone?  Provide warneri.  Open airway (postioning, etc.), dry, and stimulate  Open airway (postioning, etc.), dry, and stimulate  Within Spontaneous breathing or Readting Arealting Arealting Arealting Arealting and the Arealting or Spontaneous for washing or washing washing and too spontaneous without below to spontaneous washing	NO2 (%) Self   Post   Resuscitation   Care   -Careful   cobservation   on respiration   oxygen if HR   Infore   Infore
	Check for critical knowledge and performance.  Pre-training Po	training. ———— st-training
	Check for critical knowledge and performance check.	check.
	Understand indications for adrenaline administration  →When the heart rate is less than 60/min despite effective ventilation and chest compression.	
Knowledge	Understand that endotracheal administration is the second-best approach.	
	Understand the dose of adrenaline for endotracheal administration.  →Ten-fold diluted adrenaline (0.01%):0.5 to 1.0mL/kg	
Preparation	Dilute one ampule (1 mL) of adrenaline (0.1%) by a factor of 10 using 9 mL of normal saline (10 mL total) to prepare 10-fold diluted adrenaline (0.01%).	
	Ensure that no drug solution remains in the endotracheal tube or any of the connecting tubes after administering adrenaline.	
Skill	Initiate ventilation promptly after administration to promote absorption of the drug through the trachea.	
	Assess the heart rate approximately every 30 seconds after administration. If the heart rate remains less than 60/min, administer additional doses every 3 to 5 minutes.	

## 7-1 Intravenous volume expanders administration

NAME			NCPR NCPR2020 Algorithm
MEMO		* Waintain	Target SpO2  Time   SpO2 (%)
	Check for critical knowle	edge	e and performance Pre-training Post-training check. check.
	Understand indications for volume expande →When a neonate has obvious drop in circ chest compressions and adrenaline adm Understand that normal saline is the re-	ulati inist	ing blood volume despite ventilation,
Knowledge	Understand that the other recommended solution and type O Rh-negative.	/olur	me expanders are lactated Ringer's
	Understand that type O Rh-negative partition if the neonate might have had anemial		
	Understand the dose of volume expan	ndei	rs (10mL/kg).
Skill	Administer volume expanders intravenou	usly	over a period of 5 to 10 minutes.
OKIII	Administer the same dose if the resp	ons	se is inadequate.

## 7-2 Intravenous sodium bicarbonate administration

NAME		NCPR NCPR2020 Algorithm
MEMO	*•	
	Check for critical knowledge	e and performance Pre-training Post-training check. check.
	Understand indication for sodium bicarbon →When there is an apparent metabolic acid improvement despite adequate ventilator	idosis preventing hemodynamic
Knowledge	Understand the dose of sodium bicarbona → Two-fold diluted sodium bicarbonate: 2	
	Understand that the route of sodium bicarbon	nate administration is intravenous.
Preparation	Dilute sodium bicarbonate with distilled w	vater by a factor of two.
Skill	Administer sodium bicarbonate solution intravenous (over a period of 2 to 4 minutes).	usly at a rate of at least 1 mL/kg/min

# 8-1 CPAP

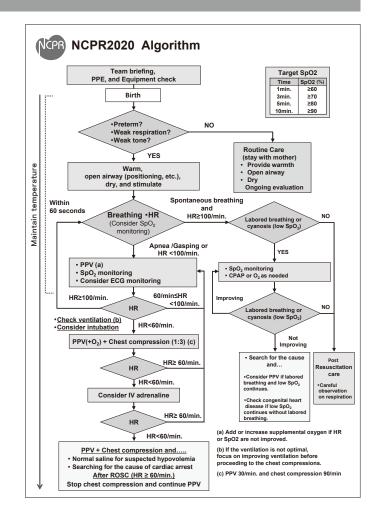
NAME			(	VĆP	NCPR2020 Algorithm		
MEMO				[""	Team briefing, PPE, and Equipment check  Birth		nin. ≥70 nin. ≥80
					•Preterm? •Weak respiration? •Weak tone?	Routine Care (stay with mo	
			temperature		Warm, open airway (positioning, etc.), dry, and stimulate	<ul><li>Provide war</li><li>Open airway</li><li>Dry</li><li>Ongoing eva</li></ul>	'
			Maintain tem		Breathing •HR (Consider SpO <sub>2</sub> monitoring)  Apnea /Gasping o	cyanosis (low	(SpO <sub>2</sub> )
					→ PPV (a)  - Spo₂ monitoring  - Consider ECG monitoring	• SpO <sub>2</sub> monitoring • CPAP or O <sub>2</sub> as neede	
					HR≥100/min. HR <100/min. HR <100/min. LR <100/min. HR <100/min. HR <100/min. HR <60/min. HR<60/min. HR<60/min. HR<60/min.	Improving  Labored breat cyanosis (low	hing or r spO <sub>2</sub> )
					PPV(+O <sub>2</sub> ) + Chest compression (1:3) (c)  HR≥ 60/min.	• Search for th	Not nproving e cause Post Resuscitation
					HR HR<60/min.  Consider IV adrenaline	Consider PPV if breathing and local continues.  Check congenity	labored w SpO <sub>2</sub> •Careful observation
					HR≥ 60/min.	disease if low S continues without breathing.	pO <sub>2</sub> ut labored lemental oxygen if HR
				,	PPV + Chest compression and  Normal saline for suspected hypovolemia  Sarching for the cause of cardiac arrest After ROSC (IRE 2 60/min.)  Stop chest compression and continue PPV	(b) If the ventilation is no focus on improving venti proceeding to the chest (c) PPV 30/min. and ches	t optimal, lation before compressions.
					sk if you understand or can perfo sk if you understood or performe		
	Check for critical kno	owledg	ge	ar	nd performance	Pre-training check.	Post-training check.
Knowledge	Understand indications for CPAP →When the respiratory distress w oxygenation (cyanosis or low Spanning)	vith lab					
Miewicago	Understand to intiate CPAP with	room	air	in	term and near-term infa	ints.	
Preparation	Prepare a flow-inflating bag or a 1	-piece	e re	esi	ıscitator.		
rieparation	Select appropriate mask size (cover the neonate's nose and mo	outh b	ut	nc	t eyes).		
	Keep sniffing position with should	ler roll	(a	ISS	ess the airway).		
Skill	Hold the neonate's jaw and the m	nask w	/ith	n th	ne IC clamp technique.		
OKIII	Put the mask on the neonate's fa	ace an	d k	<ee< td=""><td>p airtight seal.</td><td></td><td></td></ee<>	p airtight seal.		
	Adjust PEEP to 5 to 6 cmH <sub>2</sub> O an	d avoi	d F	PEI	EP of more than 8 cmH	20.	

# 8-2 Free-flow oxygen

NAME			N	NCPR NCPR2020 Algorithm
MEMO			Maintain temperature	
				Check if you understand or can perform the item well before training. Check if you understood or performed the item well after training.
	Check for critical know	wledge	еа	e and performance Pre-training Post-training check. check.
Knowledge	Understand indication for free-flow  →①Persistent poor oxygenation (c  →②If only labored breathing persis  as a second option when CPAI	cyanos sts, the	sis e f	sis or low SpO <sub>2</sub> ) e free-flow oxygen can be used
Preparation	Prepare an oxygen tube, a flow-infl (Do not use a self-inflating bag to			
Skill	When using an oxygen tube, adminis close to the neonate's nose and mo When using a flow-inflating bag or a by holding the mask close to the neo	uth with T-piece	th a e r	th a hand cupping. e resuscitator, administer oxygen
	Adjust the oxygen concentration v	while as	ISS	ssessing SpO2.

#### 9-1 Endotracheal intubation

NAME		
MEMO		



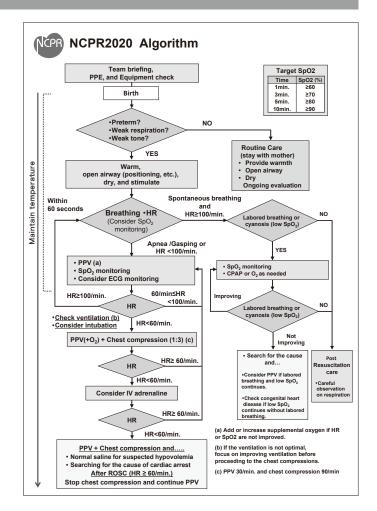
\* Check if you understand or can perform the item well before training.

Check if you understood or performed the item well after training.

	Check for critical knowledge and performance	Pre-training check.	Post-training check.
Knowledge	Understand indications for endotracheal intubation.		
Preparation	Prepare appropriate supplies for endotracheal intubation.		
Treparation	Select appropriate size of the endotracheal tube.		
	Keep sniffing position without the shoulder roll or with the thin towel under the back of h	ead.	
	Hold the laryngoscope with your left hand.		
	Advance the blade tip beyond the base of the tongue to a position where it holds the epiglo	ttis.	
	Lift the blade slightly to lift the tongue and expose the pharyngeal ar *Do not lift the tip of the blade alone.	ea.	
	Look for anatomical landmarks.		
	Hold the tube with your right hand.		
Skill	Insert from the right corner of the neonate's mouth while keeping the curve of the tube horizon	ontal.	
	Insert the tube to the point where the vocal cord guide reaches the vocal co	rds.	
	Carefully withdraw the laryngoscope while keeping the tube securely in place with your right h	nand.	
	Intubation attempt should be performed within 20 seconds.		
	Check the length of tube is 6cm+BW(kg) at the corner of the mouth.		
	Check the tip of the tube is properly positioned between the vocal cords and the cal	rina.	
	Secure the tube with tape or another securing device.		

## 9-2 Laryngeal mask (LM)

NAME		
MEMO		

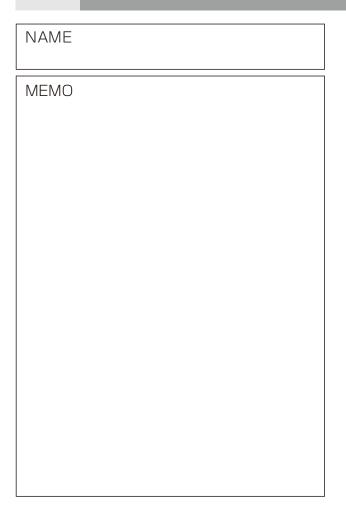


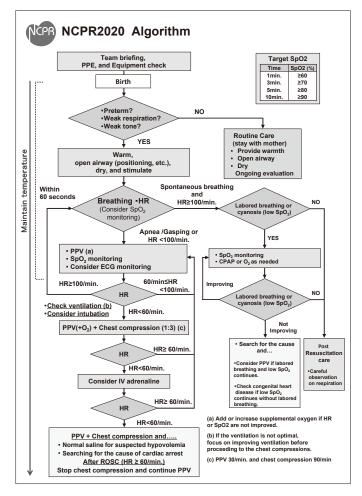
\* Check if you understand or can perform the item well before training.

Check if you understood or performed the item well after training.

	Check for critical knowledge and performance	Pre-training check.	Post-training check.
Knowledge	Understand indications for LM.  →When ventilation with a face mask is not effective in neonates over 34 weeks' gestati	on.	
Preparation	Prepare appropriate supplies.  Prepare the appropriate size of the tube.  →The size 1 LM can be used for neonates weighing 2 to 5 kg.  If using an LM with a cuff, inflate the cuff before inserting for pre-use inspecting an LM with a cuff, fully deflate the cuff before inserting.	on	
Skill	Keep sniffing position with shoulder roll (assess the open airway).  Place the index finger on the tip of the mask opening and hold the LM with two fing Use the other hand to open the neonate's mouth and advance the LM alo the hard palate with the index finger until it meets resistance.  Remove the index finger while supporting the tube with one hand.  If using an LM with a cuff, inflate the cuff with the designated amount of Confirm appropriate placement of the LM tip by five-point auscultation or observing the chapter of the LM with the tip of the LM with the confirm appropriate placement of the LM tip by five-point auscultation or observing the chapter of the LM with the confirmal confirmation of the LM with the confirmal confirmation of the LM with the confirmal confirmation of the LM tip by five-point auscultation or observing the chapter of the LM with the confirmation of the	ng  air	

#### 10 Resuscitation of preterm infants





\* Check if you understand or can perform the item well before training.

Check if you understood or performed the item well after training.

	Check for critical knowledge and performance	Pre-training check.	Post-training check.
Knowledge	Delayed cord clamping for longer than 30 seconds is suggested for preterm infants not requiring immediate resuscitation.		
	Cord milking that does not impede resuscitation is considered a reasonable alternativ preterm infants born at 28 weeks of gestation or less who require immediate resuscitation		
	Perform resuscitation procedures under a radiant warmer in preterm infants born betwe 28 and 32 weeks of gestation, a combination of other methods such as warm blanket plastic wrap, and a thermal mattress should be used while keeping room temperature at 23 to 25°C to avoid hypothermia (body temperature <36°C).		
	Provide CPAP before intubation and ventilation in preterm infants who have labored breathing.		
	Initiate ventilation with low oxygen (21 to 30%) in preterm infants bo at less than 35 weeks of gestation.	rn 🗌	
	Use a PEEP of 5 cmH <sub>2</sub> O if ventilation is indicated for a preterm infanin the delivery room.		

#### NCPR S course scenario (Ventilation)

NAME **TEAM** ※

✓ Check the items that your team Team briefing appropriately assessed and PPE performed Equipment check **Birth** Preterm ..... weeks Yes No ■ Weak respiration… Weak tone ··· Initial steps of resuscitation Provide warmth Ensure open airway Within Stimulation 60 sec. 5 Assessment Assessment ¬No> ☐ Breathing… ☐ Yes [ Labored breathing... Yes No ☐ HR · .... /min Cyanosis ..... Ventilation Post-resuscitation care SpO<sub>2</sub> monitor Considering ECG monitor Assessment ☐ Breathing… ☐ Yes ☐ No> HR :-----/min Ventilation and chest compression (Consider endotracheal intubation) Assessment ☐ Breathing… ☐ Yes ☐ □No. Consider consistent ☐ HR ::-----/min thermal management Stop ventilation The goals for the next time Check-points for better resuscitation Did you have a constructive decision making with all team member? Did you make another suggestion when the leader's instructions and opinions are conflict with yours? Did you communicate well with other team members during resuscitation? Did you help each other to solve issues in resuscitation?

#### NCPR S course scenario (Chest compression)

NAME **TEAM** ※

✓ Check the items that your team Team briefing appropriately assessed and PPE performed Equipment check Birth Preterm ..... weeks Yes No ■ Weak respiration… Weak tone ····· Initial steps of resuscitation Provide warmth Ensure open airway Within Stimulation Dry 60 sec. Assessment Assessment ■ Breathing… ■ Yes ■ ¬No> ☐ Breathing… ☐ Yes ☐ ☐ HR ::.... /min ☐ HR ·············· Ventilation SpO<sub>2</sub> monitor Continue ventilation Considering ECG monitor Assessment Assessment ☐ Breathing…☐Yes ☐ HR ..... ☐ HR ·············· /min Check effective ventilation Ventilation and chest compression Transport to NICU (Consider endotracheal intubation) Oxygen concentrarion Assessment ☐ Breathing… ☐ Yes ☐ No> Consider consistent thermal management /min Stop chest compressions The goals for the next time Check-points for better resuscitation Did you predict and prepare the next action during resuscitation? Did you complete your assigned roles appropriately under the leadership? Did you state your action clearly during resuscitation? Did you check and evaluate the resuscitation techniques each other?

#### NCPR S course scenario(CPAP)

NAME **TEAM** ※

✓ Check the items that your team Team briefing appropriately assessed and PPE performed Equipment check Birth Preterm ..... weeks Yes No Weak respiration… Weak tone ·· Initial steps of resuscitation Provide warmth Ensure open airway Within Stimulation 60 sec. 3 Assessment Assessment ■ Breathing… ■Yes ■  $\neg$ N $\hat{\circ}$ Labored breathing... Yes No ☐ HR ········· /min Cyanosis ..... SpO<sub>2</sub> monitor Consider CPAP or free-flow oxygen Assessment \_\_Labored breathing...\_Yes \_\_No Cyanosis ..... Post-resuscitation care Consider consistent thermal management The goals for the next time Check-points for better resuscitation Did you have a constructive decision making with all team member? Did you make another suggestion when the leader's instructions and opinions are conflict with yours? Did you communicate well with other team members during resuscitation?

Did you help each other to solve issues in resuscitation?

### NCPR S course scenario (medications)

NAME **TEAM** ※

✓ Check the items that your team Team briefing appropriately assessed and performed Equipment check **Birth** Preterm ..... weeks Yes No Weak respiration... Weak tone ····· Initial steps of resuscitation Provide warmth Ensure open airway Within Stimulation Dry 60 sec. Assessment Assessment ☐ Breathing… ☐ Yes ☐ No> □ Breathing… □Yes □No> ☐ HR ············ ☐ HR ············· /min /min Ventilation Stop chest compressions SpO<sub>2</sub> monitor Considering ECG monitor Assessment ☐ Breathing…☐Yes☐No> Assessment ☐ HR ..... ☐ Breathing… ☐ Yes ☐ No> ☐ HR ..... /min Check Continue ventilation effective ventilation Ventilation and chest compression (Consider endotracheal intubation) Assessment Oxygen concentrarion ☐ Breathing…☐Yes☐No> ☐ HR ············· /min Assessment ☐ Breathing… ☐ Yes ☐ No> Transport to NICU /min Consider consistent Adrenaline administration thermal management The goals for the next time Check-points for better resuscitation Did you predict and prepare the next action during resuscitation? Did you complete your assigned roles appropriately under the leadership? Did you state your action clearly during resuscitation? Did you check and evaluate the resuscitation techniques each other?



#### NCPR S course scenario(

NAME **TEAM** ※

✓ Check the items that your team Team briefing appropriately assessed and PPE performed Equipment check At Birth Preterm ..... weeks Weak respiration... Yes No Weak tone ······ **Routine Care** (stay with mother) Provide warmth Initial steps of resuscitation Ensure open airway Provide warmth Ensure open airway \_\_ Dry Dry Stimulation Ongoing evaluation Within 60 sec. Assessment Assessment ☐ Breathing... ☐ Yes ☐ ¬No> Labored breathing... Yes No ☐ HR ············ /min Cyanosis ..... Ventilation SpO<sub>2</sub> monitor SpO₂ monitor Considering ECG monitor Consider CPAP or free-flow oxygen Assessment ☐ Breathing… ☐ Yes ☐ No> ☐ HR ..... /min Assessment Check Labored breathing... Yes No effective ventilation Cyanosis ..... Ventilation and chest compression (Consider endotracheal intubation) Oxygen concentrarion Post Resuscitation care · Careful observation on Assessment respiration Breathing… Yes No > ☐ HR ..... /min Searching for cause of cardiac arrest IV adrenaline Consider PPV if labored breathing and low SpO2 continues. Assessment Check congenital heart < ☐ Breathing… ☐ Yes ☐ No> disease if low SpO2 continues without labored ☐ HR ..... /min breathing. PPV + Chest Compression and ..... Consider consistent Searching for cause of cardiac arrest thermal management ■ Normal Saline as Volume Expander After ROSC (HR ≥ 60/min.)



Quit Chest Compression and continue PPV