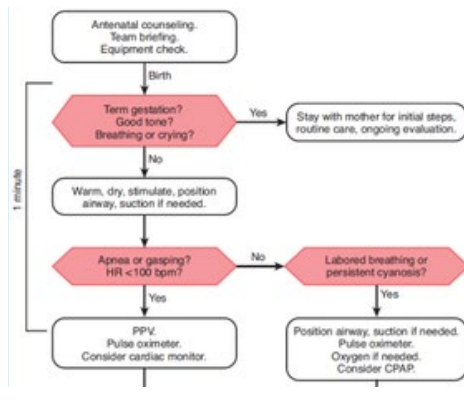
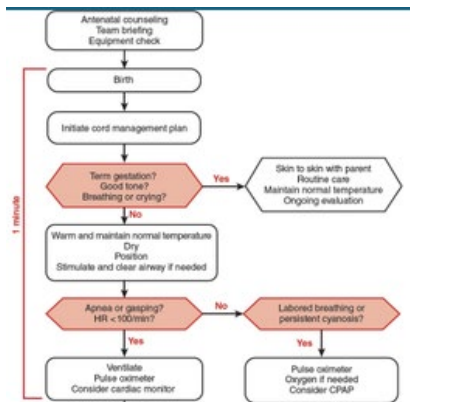


NRP 9th Edition – Canadian Practice Changes

Change	8th Edition	9th Edition																										
Changes have been made to the algorithm: - Added Birth and Initiate Cord Management Plan as actions in the first 1 minute. - Removed suction from Warm, dry, stimulate, position the airway, suction if needed.	 The 8th Edition algorithm starts with Antenatal counseling, team briefing, and equipment check. At birth, it asks 'Term gestation? Good tone? Breathing or crying?'. If 'Yes', the infant stays with the mother for initial steps. If 'No', the steps are: Warm, dry, stimulate, position airway, suction if needed. Then it asks 'Apnea or gasping? HR < 100 bpm?'. If 'Yes', it leads to PPV, pulse oximeter, and consider cardiac monitor. If 'No', it leads to 'Labored breathing or persistent cyanosis?'. If 'Yes', it leads to position airway, suction if needed, pulse oximeter, oxygen if needed, and consider CPAP. If 'No', it loops back to the first decision point.	 The 9th Edition algorithm starts with Antenatal counseling, team briefing, and equipment check. At birth, it leads to 'Initiate cord management plan'. Then it asks 'Term gestation? Good tone? Breathing or crying?'. If 'Yes', it leads to 'Skin to skin with parent', 'Routine care', 'Maintain normal temperature', and 'Ongoing evaluation'. If 'No', the steps are: Warm and maintain normal temperature, Dry, Position, Stimulate and clear airway if needed. Then it asks 'Apnea or gasping? HR < 100 bpm?'. If 'Yes', it leads to Ventilate, pulse oximeter, and consider cardiac monitor. If 'No', it leads to 'Labored breathing or persistent cyanosis?'. If 'Yes', it leads to pulse oximeter, oxygen if needed, and consider CPAP. If 'No', it loops back to the first decision point.																										
Terminology updates to be consistent with AHA/AAP Guidelines	Refers to Positive Pressure Ventilation (PPV)	Refers to Ventilation																										
Deferred Cord Clamping duration increased to at least 60 seconds .	For most vigorous preterm newborns, the current evidence suggests that clamping should be delayed for at least 30 to 60 seconds . Among vigorous term newborns, the evidence suggests that a similar delay may be reasonable.	For most newborn infants who do not require immediate resuscitation, clamping the umbilical cord should be deferred for at least 60 seconds .																										
Umbilical cord milking for non-vigorous term and late preterm newborn infants (35-42 weeks' gestation) may be reasonable alternative to early cord clamping.	For newborns less than 28 weeks' gestation , umbilical cord miking is not recommended because it has been associated with an increased risk of intraventricular hemorrhage.	For term and late preterm newborn infants (35-42 weeks' gestation) who remain non-vigorous despite stimulation, milking the intact umbilical cord from the placenta toward the baby may be a reasonable alternative to early cord clamping. For non-vigorous preterm infants born at 28 to 34 weeks' gestation, there is not enough evidence to recommend routinely milking the intact umbilical cord. Intact umbilical cord milking is not recommended for preterm newborn infants less than 28 weeks' gestation because it has been associated with an increased risk of severe intra-ventricular hemorrhage.																										
Target Oxygen Saturation Table now starts at 2 minutes versus 1 minute	<table><tr><th colspan="2">Target Oxygen Saturation Table</th></tr><tr><td>1 minute</td><td>60%-65%</td></tr><tr><td>2 minutes</td><td>65%-70%</td></tr><tr><td>3 minutes</td><td>70%-75%</td></tr><tr><td>4 minutes</td><td>75%-80%</td></tr><tr><td>5 minutes</td><td>80%-85%</td></tr><tr><td>10 minutes</td><td>85%-95%</td></tr></table>	Target Oxygen Saturation Table		1 minute	60%-65%	2 minutes	65%-70%	3 minutes	70%-75%	4 minutes	75%-80%	5 minutes	80%-85%	10 minutes	85%-95%	<table><tr><th colspan="2">Target Oxygen Saturation Table</th></tr><tr><td>2 minutes</td><td>65%-70%</td></tr><tr><td>3 minutes</td><td>70%-75%</td></tr><tr><td>4 minutes</td><td>75%-80%</td></tr><tr><td>5 minutes</td><td>80%-85%</td></tr><tr><td>10 minutes</td><td>85%-95%</td></tr></table>	Target Oxygen Saturation Table		2 minutes	65%-70%	3 minutes	70%-75%	4 minutes	75%-80%	5 minutes	80%-85%	10 minutes	85%-95%
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Initial oxygen concentration for preterm infants is further broken down to identify levels for gestational age less than 32 weeks' gestation .	<table><tr><th colspan="2">Oxygen Concentration (Fio₂)</th></tr><tr><th>Weeks' gestation</th><th>Initial Setting</th></tr><tr><td>≥35 weeks</td><td>21%</td></tr><tr><td>< 35</td><td>21% - 30%</td></tr></table>	Oxygen Concentration (Fio ₂)		Weeks' gestation	Initial Setting	≥35 weeks	21%	< 35	21% - 30%	<table><tr><th colspan="2">Oxygen Concentration (Fio₂)</th></tr><tr><th>Weeks' gestation</th><th>Initial Setting</th></tr><tr><td>≥35 weeks</td><td>21%</td></tr><tr><td>32-34 week</td><td>21% - 30%</td></tr><tr><td><32 week</td><td>≥30%</td></tr></table>	Oxygen Concentration (Fio ₂)		Weeks' gestation	Initial Setting	≥35 weeks	21%	32-34 week	21% - 30%	<32 week	≥30%						
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Ventilation rate target is expanded to 30 to 60 breaths per minute.	The ventilation rate is 40 to 60 breaths per minute.	The ventilation rate is 30 to 60 breaths per minute.																								
Initial peak inflation pressure (PIP) has been separated based on gestational age (20 vs 25 cm H2O) with an acceptable range based on gestational age.	Start with a PIP of 20 to 25 cm H2O .	<table><tr><th colspan="2">Initial PIP ranges</th></tr><tr><th>Weeks' gestation</th><th>Acceptable range</th></tr><tr><td>≥32 weeks</td><td>25*-30 cm H₂O</td></tr><tr><td>< 32 weeks</td><td>20*-25 cm H₂O</td></tr></table> *CPS recommendations for initial PIP	Initial PIP ranges		Weeks' gestation	Acceptable range	≥32 weeks	25* -30 cm H ₂ O	< 32 weeks	20* -25 cm H ₂ O																
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Time period extended to 15 to 30 seconds before beginning ventilation corrective steps.	If the heart rate is not increasing within the first 15 seconds of PPV and you do not observe chest movement, start the ventilation corrective steps.	If the heart rate is not increasing within 15 to 30 seconds of starting ventilation and you do not observe chest movement, start the ventilation corrective steps.																								
Ventilation corrective steps should be performed in the order of MRSOPA .	You will perform the corrective steps sequentially until you achieve chest movement with assisted breaths.	Based on your assessment of the infant and clinical situation, you may choose the steps that are most likely to be helpful and prioritize the order in which you perform them. However, continuing MRSOPA in order is recommended in most cases. CPS Recommends continue the use of MRSOPA to address ventilation corrective steps.																								
A laryngeal mask may now be used as a primary device for ventilation instead of as an alternative airway when face mask and intubation are unsuccessful.	If the baby cannot be successfully ventilated with a face mask and intubation is unfeasible or unsuccessful, a laryngeal mask may provide a successful rescue airway .	In most cases, ventilation is initiated with a face mask. A laryngeal mask can be a reasonable alternative as a primary device .																								
Endotracheal tube size table has been adjusted including recommendations for newborn infants < 800 grams. The weight cutoff for a 2.5 mm tube has been increased to 1200 grams and a 3.0 mm tube to 2200 grams.	<table><tr><th>Weight (kilograms)</th><th>Gestational Age (weeks)</th><th>Endotracheal Tube Size (mm ID)</th></tr><tr><td><1</td><td><28</td><td>2.5</td></tr><tr><td>1-2</td><td>28-34</td><td>3.0</td></tr><tr><td>>2</td><td>>34</td><td>3.5</td></tr></table>	Weight (kilograms)	Gestational Age (weeks)	Endotracheal Tube Size (mm ID)	<1	<28	2.5	1-2	28-34	3.0	>2	>34	3.5	<table><tr><th>Weight (grams)</th><th>Gestational Age (weeks)</th><th>Endotracheal Tube Size (mm ID)</th></tr><tr><td><1,200</td><td><28</td><td>2.5*</td></tr><tr><td>1,201-2,200</td><td>28-34</td><td>3.0</td></tr><tr><td>>2,200</td><td>>34</td><td>3.5</td></tr></table> *A 2.0 mm ID endotracheal tube (optional) may be considered.	Weight (grams)	Gestational Age (weeks)	Endotracheal Tube Size (mm ID)	<1,200	<28	2.5*	1,201-2,200	28-34	3.0	>2,200	>34	3.5
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The endotracheal tube depth is measured to the anterior edge of the baby's upper (maxillary) gum in the midline instead of the lip (tip-to-gum instead of tip-to-lip) .	Insert the endotracheal tube so that the marking on the tube corresponding to the estimated insertion depth is adjacent to the baby's lip .	Insert the endotracheal tube so that the marking on the tube corresponding to the estimated insertion depth is adjacent to the anterior edge of the baby's upper (maxillary) gum in the midline .																								
Supraglottic airways may be an alternative interface for ventilation.	Supraglottic airways (LMA) are part of alternative airway in MRSOPA .	It may be reasonable to use an LMA as the primary interface to administer ventilation instead of a face mask for newborn infants >34+0 weeks																								
Video laryngoscopy is recommended for intubation when readily available and where expertise in use exists.	Video laryngoscopy not addressed.	Video laryngoscope can be useful for newborn infants who require endotracheal intubation, where available. CPS Recommendation: Video laryngoscope is recommended for newborn infants who require endotracheal intubation where available and competency exists.																								