



PARAMEDIC CLINICAL PRACTICE PROTOCOLS: PANDEMIC PROTOCOLS



Saskatchewan College of Paramedics

Pandemic Protocols

In the event of a pandemic, Emergency Medical Responders (EMRs) and Paramedics will play an important role in the education, prevention, and treatment of patients. Immunization of the public is the primary means to decrease morbidity and mortality in the event of an epidemic and pandemic. Dependent on the Saskatchewan Health Authority (SHA) and the Athabasca Health Authority's (AHA) pandemic plans and the availability of resources, EMRs and Paramedics may be a part of the interdisciplinary health care team in mitigating a pandemic crisis.

Based on specific needs during a pandemic, the health authorities will have the responsibility of educating and informing EMS and staff on the overall response plan and the role that EMRs and Paramedics will play in it. The SHA and AHA will work with the Saskatchewan College of Paramedics to ensure their immunization training is an approved method and that it meets the regulatory bylaws of the College. Please note that this protocol may be amended periodically dependent on the pandemic and SHA and AHA plan(s).

Assessment

1. When possible, paramedics should stay 2 meters away from patients and bystanders with symptoms until appropriate routine respiratory droplet precautions can be instituted and ensure all appropriate personal protective equipment (PPE) is donned while assessing all patients for suspected influenza-like- illnesses.

2. Assess all patients for symptoms of influenza-like illness (ILI).
 - a. Adults: Sudden onset of new cough, or change in existing cough plus one or more of the following:
 - i. fever ($\geq 38^{\circ}\text{C}$ on arrival or by history)
 - ii. sore throat
 - iii. joint pain
 - iv. muscle aches
 - v. severe exhaustion/weakness

 - b. Pediatric: Sudden onset of any of the following symptoms:
 - i. runny nose
 - ii. cough, sneezing
 - iii. +/- fever
 - iv. < 5years gastrointestinal symptoms may be present.

****Over age 65 and under age 5, fever may not be prominent****

Personal Protective Equipment (PPE)

When treating a patient with a high suspicion of a pandemic illness, the following PPE should be worn:

1. While performing a potential aerosol-producing procedure (e.g. endotracheal intubation, administering nebulized medications, resuscitation, etc.) disposable N95 use fit-tested respirator and eye protection (e.g., goggles; eye shield), disposable non-sterile gloves, and gown. When possible, and in accordance with the SHA or AHA's pandemic response plan, the use of metered-dose inhaler (MDI) may be warranted by the PCP/ACP practitioner to reduce the risk of transmission.
2. Place a standard surgical mask or oxygen mask on the patient, if tolerated.
3. Use good respiratory hygiene, using non-sterile gloves for contact with patient, patient secretions, or surfaces that may have been contaminated. Follow hand hygiene including hand washing or cleansing with alcohol-based hand disinfectant after contact.
4. Encourage good patient compartment vehicle airflow/ ventilation to reduce the concentration of aerosol accumulation when possible.

Refer to the Ministry of Health website, SHA and/or AHA's pandemic plan and other resources for further information on PPE, immunizations and provincial occupational health and safety standards (OHS).

1. Nasopharyngeal / Oropharyngeal Swabs During Pandemic

The Saskatchewan College of Paramedics and the College of Physicians and Surgeons of Saskatchewan have approved the addition of Nasopharyngeal (NP) and Oropharyngeal (OP) specimen collection to the current Emergency Medical Responder (EMR), Primary Care Paramedic (PCP), Intermediate Care Paramedic (ICP), Advanced Care Paramedic (ACP) and Critical Care Paramedic (CCP) scope of practice for pandemic purposes only. Only those trained in NP/OP swabbing are permitted to perform this skill.

All paramedics performing NP/OP swabbing would be required to follow the AHA and SHA guidelines on Personal Protective Equipment (PPE). Current practice standards require that all paramedics be trained in the use of PPE and complete a refresher on a regular basis.

2. Monitoring and Transporting Mechanical Ventilators

<p>Purpose: The goal of mechanical ventilation is primarily to provide oxygenation and ventilation and reduce the patient’s work of breathing. Mechanical ventilation is a supportive therapy and is used in instances where patients suffer from:</p> <p>1. refractory hypoxemia, 2. increased work of breathing, 3. apnea, or poor respiratory effort leading to inadequate ventilation, 4. or a demonstrated inability to protect their airway. The use of a ventilator is advantageous over BVM ventilation in that it can more accurately monitor factors such as airway pressures, FiO₂, PEEP, volume, respiration rate, breath initiation, and titrate them based on an individual’s needs. A properly adjusted ventilator increases patient comfort and tolerance, and a health care provider is less dependent on sedation, analgesia, and paralytics to provide care.</p>	<p>Affected Protocols: Pandemic Protocol – <u>This is only to be used during a declared pandemic</u></p>
<p>Equipment: Ventilator Pump Sedation medication May require paralytic medication May require analgesic medication</p>	<p>Registration Level Authorized: Advanced Care Paramedic – only those ACPs approved by the Saskatchewan Health Authority (SHA) may use this protocol.</p>
<p>Monitoring a Ventilator</p> <ol style="list-style-type: none"> 1. Assess patient Q1H and prn. Include V/S: Temperature, HR, RR, BP, SPO₂, ETCO₂, and RASS Sedation Score. During transport assessments will be done Q15min. 2. Respiratory Assessment to include chest auscultation, work of breathing, and patient-ventilator comfort. 3. The Advanced Care Paramedic shall be knowledgeable of current and ordered ventilator settings; the RRT or MRP who has set up and/or ordered the settings; and the contact number for the RRT/MRP. 4. Ventilator settings are checked Q1H which include mode, FIO₂, SPO₂, ETCO₂, PEEP, pressure support, RR, and tidal volume, and alarm settings. 5. Verify the airway is secure. 6. Physician orders to change ventilator settings are promptly communicated to the RRT. In the absence of an RRT, an Advanced Care Paramedic may proceed with orders after confirming they’re appropriate for the patient condition. 	

7. Ensure the patient has adequate sedation and analgesia.
8. Maintain existing infusions within scope of practice in accordance to the Sask. Parental Manual.
9. Take steps to reduce ventilator associated pneumonia (VAP)
 - a. Elevated head of bed 30-45°, when possible.
 - b. Strict hand hygiene.
 - c. Aseptic technique when suctioning.
10. Suction as required both orally, and via endotracheal tube.
 - a. Use the lowest pressure possible to adequately remove secretions.
11. FIO2 may be increased to pre-oxygenate during suctioning. Once suctioning is complete, the Advanced Care Paramedic will return FIO2 to ordered level.
12. The Advanced Care Paramedic may change the FIO2 in the event of an emergency. The RRT and/or MRP will be notified promptly of the change made.
13. Immediately respond to alarms and assess patient. Determine the cause and take appropriate action. If unable to determine the reason for the alarm, the paramedic shall remove the patient from the ventilator and utilize a manual ventilation device equipped with a PEEP valve and 100% O2. Contact RRT and/or MRP promptly.
14. The MRP will be contacted prior to changing any ventilator parameters.

Patient Undergoing Transport - Along with the above requirements:

1. An additional EMS attendant, PCP level or higher, is required to be with the patient during transport. An RN or RRT is also an acceptable additional attendant.
2. Ensure the ventilator has additional batteries and plug into an electrical outlet when accessible.
3. Oxygen source must be reliable for the duration of transport. Utilize an oxygen consumption calculator and have a backup oxygen tank available.
4. Calculate required oxygen needed for the transport and add 2 hours for a safe oxygen supply.
5. Continuous SPO2, ETCO2 monitoring is required.

Inclusion Criteria

1. Transfer via ground has been coordinated and approved by the Transport Physician, receiving physician, and sending physician with an ACP monitoring the ventilated patient.
2. Patient is in a non-ICU facility location, example: field hospital, and ACP is monitoring the ventilated patient to assist with patient load under the supervision of either a Registered Respiratory Therapist or physician.
3. Tube placement confirmed by capnography, bilateral breath sounds, and a chest x-ray if available.
4. Ordered ventilator parameters are appropriate based on patient presentation.

Notes:

1. That the patient be deemed sufficiently stable to be transported on the sedative (propofol or otherwise) and the neuromuscular blocking agent (likely Rocuronium), by the Intensivist or Most Responsible Provider (MRP), and that the patient must be stable on the propofol dose for a period of at least 30 minutes before transfer from a facility,
2. That vasoactive drugs to support circulation must not be infusing at the initiation of the transfer,
3. Consideration should be given to the concept of "pocket pressors" (e.g., Phenylephrine bolus)
4. That the Advanced Care Paramedic (ACP) will not initiate either the Propofol or Rocuronium, and only monitor/manage the administration with the appropriate oversight during the transfer,
5. That the medical oversight and control team with an MRP be:
 - a. Pre-emptively briefed on the impending transfer and be involved throughout the process,
 - b. Available to be contacted immediately when the clinical picture changes to determine if a dose adjustment in either drug is needed, and
 - c. That any adjustment to dosages, ventilator settings or other interventions be made in accordance with the MRP/transport physician's instructions,
6. That all the required educational courses are successfully completed.

Resources:

See charts of **Predicted Body Weight to Tidal Volume** and **Richmond Agitation and Sedation Scale** attached to this protocol.

Predicted Body Weight to Tidal Volume

NIH PREDICTED BODY WEIGHT (PBW) / TIDAL VOLUME CHART															
MALES								FEMALES							
HEIGHT		PBW	4	5	6	7	8	HEIGHT		PBW	4	5	6	7	8
Feet	Inches	Male	ml/kg	ml/kg	ml/kg	ml/kg	ml/kg	Feet	Inches	Female	ml/kg	ml/kg	ml/kg	ml/kg	ml/kg
4' 10"	58	45.4	180	230	270	320	360	4' 7"	55	34	140	170	200	240	270
4' 11"	59	47.7	190	240	290	330	380	4' 8"	56	36.3	150	180	220	250	290
5' 0"	60	50	200	250	300	350	400	4' 9"	57	38.6	150	190	230	270	310
5' 1"	61	52.3	210	260	310	370	420	4' 10"	58	40.9	160	200	250	290	330
5' 2"	62	54.6	220	270	330	380	440	4' 11"	59	43.2	170	220	260	300	350
5' 3"	63	56.9	230	280	340	400	460	5' 0"	60	45.5	180	230	270	320	360
5' 4"	64	59.2	240	300	360	410	470	5' 1"	61	47.8	190	240	290	330	380
5' 5"	65	61.5	250	310	370	430	490	5' 2"	62	50.1	200	250	300	350	400
5' 6"	66	63.8	260	320	380	450	510	5' 3"	63	52.4	210	260	310	370	420
5' 7"	67	66.1	260	330	400	460	530	5' 4"	64	54.7	220	270	330	380	440
5' 8"	68	68.4	270	340	410	480	550	5' 5"	65	57	230	290	340	400	460
5' 9"	69	70.7	280	350	420	490	570	5' 6"	66	59.3	240	300	360	420	470
5' 10"	70	73	290	370	440	510	580	5' 7"	67	61.6	250	310	370	430	490
5' 11"	71	75.3	300	380	450	530	600	5' 8"	68	63.9	260	320	380	450	510
6' 0"	72	77.6	310	390	470	540	620	5' 9"	69	66.2	260	330	400	460	530
6' 1"	73	79.9	320	400	480	560	640	5' 10"	70	68.5	270	340	410	480	550
6' 2"	74	82.2	330	410	490	580	660	5' 11"	71	70.8	280	350	420	500	570
6' 3"	75	84.5	340	420	510	590	680	6' 0"	72	73.1	290	370	440	510	580
6' 4"	76	86.8	350	430	520	610	690	6' 1"	73	75.4	300	380	450	530	600
6' 5"	77	89.1	360	450	530	620	710	6' 2"	74	77.7	310	390	470	540	620
6' 6"	78	91.4	370	460	550	640	730	6' 3"	75	80	320	400	480	560	640

Richmond Agitation and Sedation Scale

Richmond Agitation and Sedation Scale (RASS)		
+4	Combative	violent, immediate danger to staff
+3	Very Agitated	Pulls or removes tube(s) or catheter(s); aggressive
+2	Agitated	Frequent non-purposeful movement, fights ventilator
+1	Restless	Anxious, apprehensive but movements not aggressive or vigorous
0	Alert & calm	
-1	Drowsy	Not fully alert, but has sustained awakening to voice (eye opening & contact \geq 10 sec)
-2	Light sedation	Briefly awakens to voice (eye opening & contact < 10 sec)
-3	Moderate sedation	Movement or eye-opening to voice (but no eye contact)
-4	Deep sedation	No response to voice, but movement or eye opening to <i>physical</i> stimulation
-5	Unarousable	No response to voice or <i>physical</i> stimulation