

SAFE TRANSPORT OF THE PICU PATIENT - CHW

PRACTICE GUIDELINE[®]

DOCUMENT SUMMARY/KEY POINTS

- Transportation of patients outside of the PICU is a hazardous time for patient safety – it requires appropriately trained staff with essential equipment & knowledge of the patient and transportation systems
- Careful planning and communication within the team is essential to allow for minimal risk and maximum safety for the patient during transport
- The PICU Transport Trolley is used to transfer ventilated PICU patients to other areas of the hospital for diagnostic and/or procedural purposes
- Transfer of intubated patients must always be accompanied by a PICU nursing staff member and a Medical Officer OR Nurse Practitioner who are competent in all aspects of care likely to be required by the patient
- A transport checklist must be completed for every PICU patient transport
- A designated “Time Out” is required prior to leaving PICU ('Departure Time Out') and prior to returning to the PICU ('Return Time Out')
- This guideline is an extension to the [Transfer and Transport of Patients within SCHN Hospital Procedure](#) applicable to PICU patients at CHW

This document reflects what is currently regarded as safe practice. However, as in any clinical situation, there may be factors which cannot be covered by a single set of guidelines. This document does not replace the need for the application of clinical judgement to each individual presentation.

Approved by:	SCHN Policy, Procedure and Guideline Committee	
Date Effective:	1 st December 2021	Review Period: 3 years
Team Leader:	Nurse Practitioners	Area/Dept: PICU CHW

<h2>CHANGE SUMMARY</h2>
<ul style="list-style-type: none"> • New Document

<h2>READ ACKNOWLEDGEMENT</h2>
<ul style="list-style-type: none"> • For the attention of all PICU medical and nursing staff

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Key principles of safe transport

- Hazardous time for patient safety – requires appropriately trained staff with essential equipment & knowledge of the patient and transportation systems
- Careful team planning and communication is essential for minimal risk and maximum safety
- Intubated patients must always be accompanied by a PICU nursing staff member and a Medical Officer OR Nurse Practitioner who are competent in all aspects of care likely to be required by the patient
- The PICU Transport Trolley is used to transfer PICU patients to other areas of the hospital for procedural and/or diagnostic purposes who require ventilation
- A risk assessment of the necessity for transport is to be undertaken by all members of the multidisciplinary team prior to transport – consider patient and staff safety factors
- Consider appropriate equipment required - battery life, gas supplies and pharmacological agents
- Consider duration of transport, the patient's diagnosis, severity of illness and the level of therapeutic interventions required
- All patients should be assessed for stability after transition onto the Provi-dock transport trolley before moving
- Completion of the Transport Checklist (Appendix 1) is the responsibility of the accompanying transport team
- A designated 'Departure Time Out' (run through Transport Checklist) must be completed by the accompanying transport team **prior** to leaving the PICU
- A designated 'Return Time Out' (run through Transport Checklist) must be completed by the accompanying transport team **prior** to leaving the transport destination and returning to PICU
- Upon safe return to PICU, document transport details
- Adverse events during transport must be documented and an incident form completed

Equipment

Patient equipment from bedside

- Appropriate sized airway adjuncts - face mask & guedel airway
- Anaesthetic bag – manually check bag inflation
- Appropriate sized suction catheters
- Resuscitation chart
- Chest drain clamps (if patient has chest drain in situ)
- Consider patient - specific factors (diagnosis, severity of illness and level of therapeutic interventions) and potential need for additional medications

Transport Trolley (Provi-dock)

Contents:

- Philips Monitor
- Suction unit with suction tubing attached- perform check prior to transfer
- 4% Albumin 500ml + airway needle
- PPE including non-sterile gloves, apron (goggles should be available for suctioning)
- ServoAir Ventilator
- Oxygen blender with flow meter (usually set at 100%)
- Stethoscope
- Laerdel bags (Paed & Adult)

Checks:

- Battery life – has trolley been plugged in and charged whilst stored?
- Air and oxygen cylinders – how full are they?
 - Oxygen (D size) >15,000kPa - used for ServoAir and oxygen blender
 - Air (C size) >10,000kPa – used for oxygen blender only
- Suction unit – is there a clean canister & tubing attached & is it functioning correctly when turned on?
- 4% Albumin stock and expiry
- PPE stock - non-sterile gloves, gowns, goggles

Airway & Circulation Packs

Stored in locked medication room

Check seal intact upon collection

BLUE BAG - Airway/Intubation



Contents:

1 x Laryngoscope handle + blades- Macintosh (0, 1, 2, 3 & 4) & Miller (0, 1 & 2)	
ETTs cuffed- all sizes-3, 3.5, 4, 4.5, 5, 5.5, 6, 6.5, 7, 7.5	
ETCO2 cuvette- Adult/paed x 1 each	2 x Batteries (+C)
Magill forceps- small/ medium/ large	ETT Introducer- small/ medium/ large
Suction: small & large yankauers	Suction catheters Y suction & Pedi Y- 6/8/10 Fg
8 & 10 Fr NGT	20mL Oral Syringe x 1
2 x N95 masks (Small & Regular)	Non sterile Gloves- S/M/L x 2 each
Sterile Gloves- S/ M/ L x 1 each	1 x 0.9% sodium chloride 10mL ampoule
1 x Leukoplast tape	1 x Scissors
2 x KY Jelly	1 x Cavalon

YELLOW BAG - Resuscitation Drugs & Circulation**Contents:**

5 x Adrenaline 1:10,000 (1mg/10mL)	2 x Atropine 600microgram/1mL
5 x Adrenaline 1:1000 (1mg/1mL)	2 x Adenosine 6mg/2mL
2 x Amiodarone 150mg/3mL	2 x Midazolam** 15mg/3mL
2 x Calcium chloride 1g/10mL (=6.8mmol/10mL)	2 x Naloxone 400microgram/1mL
2 x Rocuronium 50mg/5mL - Stable for 12 weeks outside the refrigerator at 8°C-30°C - Specify date of removal from refrigerator and label vial with 12 weeks discard contents after date	Note: - 500mL 0.9% Sodium Chloride
1 x Suxamethonium 100mg/1mL	500mL 10% Glucose

<ul style="list-style-type: none"> - Suxamethonium Juno brand stable for 30 days outside the refrigerator at $\leq 25^{\circ}\text{C}$ - Specify date of removal from refrigerator and label ampoule with 30 days discard contents after date 	
2 x Metaraminol 500microgram/10mL pre-filled syringe	Sodium Bicarbonate 8.4% (1mmol/mL) 8.4g/100mL
1 x Rapid Infuser set, Burette, B Braun Safe Set line P	2 x Extension Set & PIVC short extension set
ECG dots & Kitty kat neo/ paed's x 1	Tourniquet, Leukoplast tape x 1, IV insertion pack, PIVC 18-24G x 2 each
2 x 3 way taps & 2 x NADs	5 x 0.9% sodium chloride 10mL ampoules
5 x Red caps	5 x Water For Injection ampoules
5 x 0.9% sodium chloride prefilled syringe (Posiflush)	10 x blunt Red needle 2 x 23g IM needle
10 x alcohol swabs	Syringes - 3 x 50mL, 3 x 20mL, 5 x 10mL, 5 x 5mL, 5 x 3mL, 5 x 1mL, 2 x VBG
Scissors 10 x Labels	2 x Ketamine 200mg/2mL vial (S8 drug so not kept in transport pack - check out of ADC prior to transfer if required)

** Midazolam is a scheduled drug. When an ampoule is used from the kit and replaced, documentation of patient name, dose and waste, and ordering clinician must be recorded as per usual process for scheduled drugs.

Procedure

Set Up:

- Attach to foot end of bed only
- Two person technique required:
 - Each person take a handle
 - Lift up and then align and secure down onto the bumper rail of the bed
- Never mount or dismount Provi-dock from bed whilst patient is attached to the ventilator due to risk of extubation (with exception of transfer onto CT scanner bed as intentional manoeuvre of trolley required)
- Plug power cord into mains electricity wherever possible - prior to leaving PICU, upon arrival at destination and after cleaning and returning to store room
- Connect ventilator oxygen to wall prior to leaving PICU & upon arrival at destination- oxygen supply automatically changes from cylinder to wall when connected
- Neatly secure all power cords, ventilation tubing and infusion lines to avoid dislodgement or damage during transfer
- Engage brakes whenever Provi-dock is stationary

Pack Up:

- Establish patient back on bedside monitoring and ventilation – consider any changes to patient condition during transport
- Return all patient specific equipment to appropriate bedside location
- Any equipment utilized during transfer to be cleaned, replaced or disposed of as required
- Check gas cylinders & replace if:
 - Oxygen (D size) < 15,000kPa
 - Air (C size) < 10,000kPa

(During hours request inhalation therapy, after hours spare cylinders kept in Grace Storeroom)

Observation & Monitoring

- Transfer bedside Intellivue X3 transportable block & cables to transport monitor
 - Check monitor waveforms have transferred across to the transport monitor, this may include the following:
 - Respiratory- Rate/ saturations/ pulse oximetry/ ETCO₂
 - Circulation –CVP/ Arterial BP/ Non-invasive BP Cuff / ECG

- Disability- ICP monitoring
- Check monitor alarm limits are appropriate and active
- Check IV access present, appropriate & secure – is contrast required?
- Consider appropriate noise, eye and environmental protection factors
- Pressure area care
- Document a full set of observations during 'Departure Time Out' and 'Return Time Out' on notes page of checklist as a baseline
- Any adverse incidents occurring at any time throughout the transfer should be clearly documented on the observation chart

Infusions

- Cease any infusions that can be held during transport – maintain integrity when disconnected to allow for reconnection on return to PICU
- Consider preparation of resuscitation drugs – discuss with senior PICU clinicians on service
- Calculate sufficient volume required for all infusions based on predicted transport and procedure duration

Ventilation

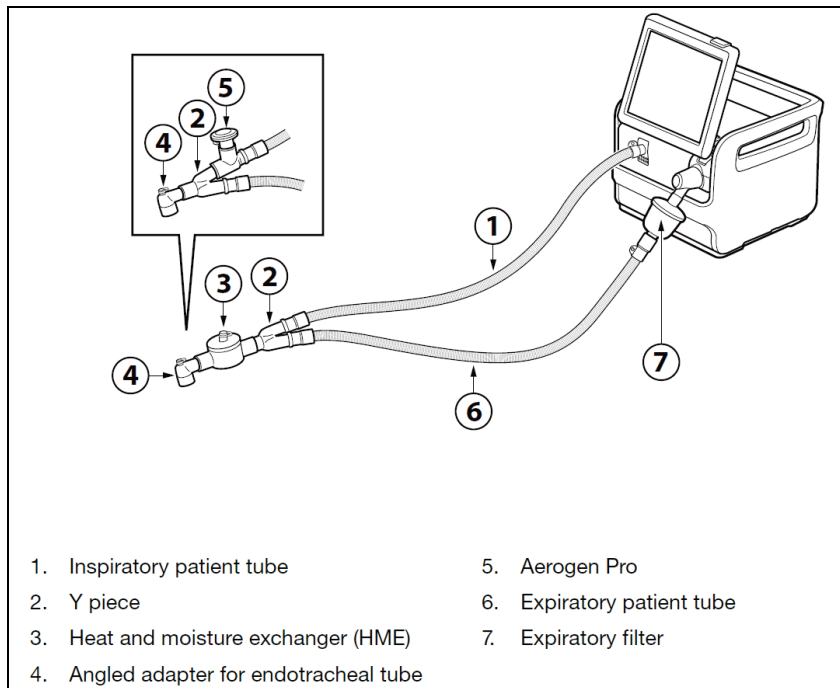
Assess airway security & current ventilation settings and status as part of risk assessment for transport safety

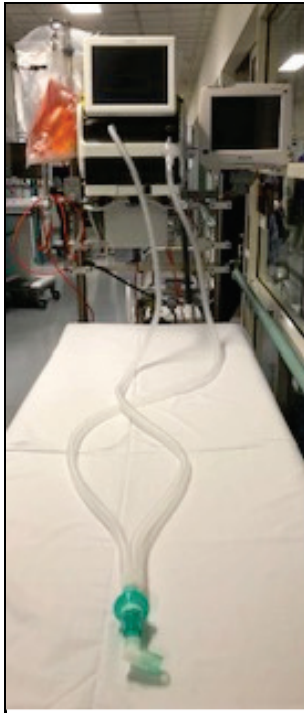
Servo-Air ventilator

- Turbine driven independently of compressed air
- Suitable for invasive and non-invasive ventilation
- 2 ventilator circuit sizes available depending on patient weight:
 - <15kg = Paediatric 15mm**
 - >15kg = Adult 22mm**
- Dry circuits must be used with Heat and Moisture Exchanger (HME)

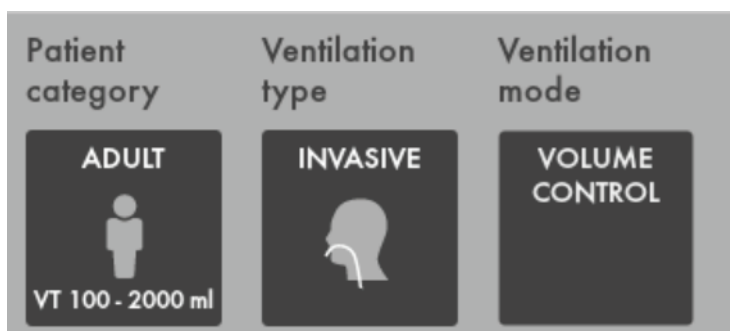
Ventilator Set Up

- Connect to Oxygen source (wall when stationary, cylinder during transport)
- Plug ventilator into mains power when not in use to keep batteries fully charged
- Battery availability = 2 batteries with combined operating time of approx. 240mins
- Bacterial filter required on the expiratory end of the circuit (machine end)
- Bacterial HME filter required at the patient end of circuit
- Always perform a pre-use check before connecting ventilator to patient:
 - Follow instructions on screen for Pre-Use check – test tubing will be required
 - A patient circuit check is included in the Pre-Use check - use the circuit and filters that will be used for your patient
 - After the Pre-Use checks connect circuit to test lung





- Same interface as ServoU ventilator:
 - Choose Patient **category** – Paediatric or Adult
 - Choose Ventilation **type** – invasive or non-invasive
 - Choose Ventilation mode



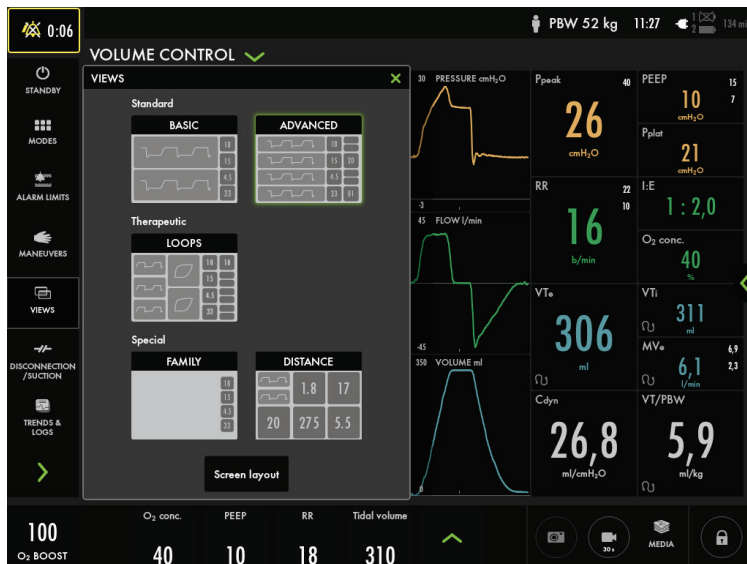
- Tap PBW to open PATIENT DATA
 - Enter the patient Weight
 - Check the ml/kg measurement
- Program settings to match ServoU ventilator settings

- Alarm limits programming:
 - Go to ALARM LIMITS in the QUICK MENU
 - Set appropriate alarm limits for patient
 - ACCEPT alarm settings
- Tap START VENTILATION

NOTE: Alarms are silenced for 30 seconds after ventilation is commenced

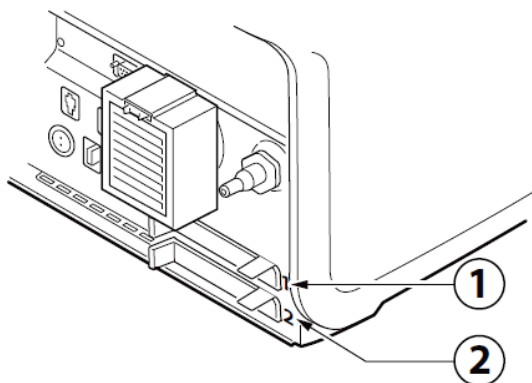
Screen View

- Set screen view to ADVANCED via the VIEWS QUICK MENU
- Servo Air does not display CARE COMPASS



Battery

- Battery compartment is divided into two slots – slot 1 (optional) and slot 2 (main)



- Slot 2 requires a battery at all times during ventilation
- Slot 1 battery module may be exchanged during ventilation
- For battery capacity check - click on the battery symbol (top right of screen)

Documentation

- Essential documentation must accompany the patient and includes:
 - Current medical records folder
 - Patient labels and relevant request form if needed (EMR can negate the need)
 - Pre-op check list and consent form (if going to OT/ MRI/ contrast CT)
 - Emergency Resuscitation Chart
- Upon safe return to PICU, document transport details in patient EMR notes:
 - Transport destination/procedure
 - Accompanying team members
 - Any change in patient condition
 - Interventions undertaken during (e.g. medications given)
 - Adverse events
- Adverse events during transport must also be reported via IIMS+

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Appendix 1 – PICU Transport Checklist

PICU TRANSPORT CHECKLIST		Patient label
TRANSPORT ESCORT INFORMATION		
Transport Destination _____	Destination notified <input type="checkbox"/>	Consent (MRI/IV contrast) <input type="checkbox"/>
Escorting Nurse _____	Escorting Medical Officer _____	
Departure time out _____	Return time out _____	
AIRWAY		
Airway grade (if known): _____	ETT size: _____	External measure: _____ cm
Airway secure	<input type="checkbox"/>	<input type="checkbox"/>
Auscultation	<input type="checkbox"/>	<input type="checkbox"/>
Suction unit checked and working (+ catheters)	<input type="checkbox"/>	<input type="checkbox"/>
Mask + guedel available	<input type="checkbox"/>	<input type="checkbox"/>
Blue emergency airway bag present	<input type="checkbox"/>	<input type="checkbox"/>
BREATHING		
Ventilation - FiO2: _____	PIP/PEEP: _____	Vt: _____ RR: _____ etCO2: _____
Oxygen & air cylinders >15,000 kPa	<input type="checkbox"/>	<input type="checkbox"/>
Self-inflating bag available	<input type="checkbox"/>	<input type="checkbox"/>
Anaesthetic bag checked & connected to blender	<input type="checkbox"/>	<input type="checkbox"/>
Gas blender set to 100% FiO2	<input type="checkbox"/>	<input type="checkbox"/>
Respiratory status safe for transport	<input type="checkbox"/>	<input type="checkbox"/>
Pre transport blood gas attended	<input type="checkbox"/>	<input type="checkbox"/>
CIRCULATION		
Baseline observations – HR: _____	BP: _____	CVP: _____ SpO2: _____
IV access secure, flushed and patent	<input type="checkbox"/>	<input type="checkbox"/>
IV access appropriate for contrast (if applicable)	<input type="checkbox"/>	<input type="checkbox"/>
Cardiovascular status safe for transport	<input type="checkbox"/>	<input type="checkbox"/>
Yellow emergency drug bag + resus chart present	<input type="checkbox"/>	<input type="checkbox"/>
Line extensions on essential infusions (MRI only)	<input type="checkbox"/>	<input type="checkbox"/>
DISABILITY/EXPOSURE		
GSC prior to transport: _____	Pupil size/reaction: _____	
Adequate & appropriate sedation running/available	<input type="checkbox"/>	<input type="checkbox"/>
Warmth or temperature control considered	<input type="checkbox"/>	<input type="checkbox"/>
EQUIPMENT/OTHER		
Emergency escalation plan and contacts	<input type="checkbox"/>	<input type="checkbox"/>
Alarms set (ventilator/monitor)	<input type="checkbox"/>	<input type="checkbox"/>
Optimal battery levels (vent/monitor/pumps)	<input type="checkbox"/>	<input type="checkbox"/>
Wall power & gas pre departure + at destination	<input type="checkbox"/>	<input type="checkbox"/>
Adequate volume of all infusions	<input type="checkbox"/>	<input type="checkbox"/>
Bedrails up & equipment secured to bed	<input type="checkbox"/>	<input type="checkbox"/>
MRI checklist complete (if applicable)	<input type="checkbox"/>	<input type="checkbox"/>
Transport documented in eMR on return to PICU	<input type="checkbox"/>	<input type="checkbox"/>

