PIPER Retrieval Team Response Time

The PIPER retrieval team response aims to match the level of patient illness acuity.

PIPER will provide an estimated time of arrival either at the end of the referral call or as soon as it is available (e.g. once air resource availability confirmed). PIPER will update the ETA if significant change to ETA anticipated.

The PIPER Consultant will support the referring team with ongoing advice as required while the retrieval team is en route.

The referring team can contact PIPER at any time to check the ETA or access further advice.

The PIPER Paediatric and Neonatal Acuity Classifications are shown in Appendices 1 & 2.

Response time is the time from decision to retrieve (often this coincides with the time of referral) until arrival at the referring hospital. It includes:

Mobilisation/Activation time – the time taken to assemble a team and depart from RCH

Time intervals for Air Transfers

- Time from arrival at airport until take off
- Flight time to airport near referring hospital
- Time for road transfer from airport to referring hospital

Time intervals for Road Transfers

- Time from RCH to referring hospital

For the most urgent referrals we aim to depart our base at Royal Children's Hospital within 30 minutes of the decision to retrieve.

PIPER has both neonatal and paediatric teams on site at RCH 24/7. At peak referral times (1100-2300 Mon-Fri) there is a 2nd neonatal team onsite. In addition, Patient Transport Officers (PTOs) contracted though Ambulance Victoria are on site 24/7, again with a 2nd PTO available from 12 noon-2200.

Factors that impact response time include:

1. Traffic conditions. Can significantly hamper response time even under lights and sirens conditions.
2. Concurrent road transfers where a 2nd emergency driver has to be sourced from AV emergency ambulance resources.
3. Concurrent referrals where an on call team has to be called in from home. Most, but not all, on call staff live within 30 minutes travel time of RCH off peak.
4. Availability of fixed wing or helicopter for air transfers. PIPER teams must travel to Air Ambulance Victoria's base at Essendon airport for both fixed wing and helicopter access. In the best of circumstances the time from departing RCH to take off is 45-60 minutes.
5. Adverse weather conditions can mean air transport options are unavailable.

Appendix 1 – PIPER Paediatric Activation Classification

Priority 1 - 'Go Now' (Time Critical) - Depart within 15 minutes

The PIPER Paediatric 'Go Now' Criteria are:

1. Cardiac or respiratory **arrest**
2. **Children requiring emergency intubation**
3. **Suspected severe sepsis** and one or more of:
   - Venous blood Lactate >3 mmol/L
   - Neutropenia (neutrophil count <1000/mm3), unexpected (i.e. not related to cancer chemotherapy)
   - Coagulopathy (INR>1.6, APTT>60, or Fib <1)
   - Signs of shock* persisting despite a total of 40ml/kg fluid
4. **Upper airway obstruction** persistent despite >2 doses of adrenaline, or hypoxic (SpO_2<90%)
5. **Pneumonia or asthma with hypoxaemia** (SpO_2 <90%) despite locally available non-invasive respiratory support and bronchodilators if relevant.
6. **Large pleural effusion** (e.g. near white-out of hemi-thorax)
7. **Surgical abdomen** with signs of shock*
8. Ongoing **seizures** despite 2 doses of midazolam and loading with a long-acting agent (phenytoin, levetiracetam, phenobarbitone)
9. Signs of **raised intracranial pressure**
10. Unconsciousness with **worse than flexion** motor response
11. Patients with the following **cardiac problems with haemodynamic compromise:** shock*, hypotension, signs of heart failure, venous blood lactate >3, or about to be intubated:
    - **Congenital heart disease**
    - **Arrhythmia**
    - Suspected **cardiomyopathy / myocarditis**
12. Serum **ammonia** >150 mcg/dL
13. **Severe acute kidney injury:**
    - Oligo-anuria: < 0.5ml/k/hr for 24 hours from a catheterised child or anuric for 12hr, and / or
    - Significant creatinine elevation: 3x upper limit of normal with no history of chronic kidney disease or doubling of creatinine within 24hr.

* Signs of shock include capillary refill >3 seconds, low volume pulses, hypotension, tachypnoea, lethargic or poor conscious state.

Any child fulfilling the PETS Go Now criteria should be discussed urgently with a PIPER consultant. If a child fulfils any of these criteria, don't delay, Go Now. If a PIPER paediatric transport is already underway, a second team can be sought for Go Now criteria, involving staff from PICU.

Priority 2 - Urgent - Depart within 30 minutes

- Patient requires prompt retrieval but with no immediate threat to life

Priority 4 - Elective

- Patient booked for special investigation or appointment

Complex - As soon as reasonably possible

e.g. ECMO retrievals, interstate inter-ICU retrievals

PIPER Retrieval Team Response Time

Appendix 2 – PIPER Neonatal Activation Classification

Priority 1 - Time Critical - Depart within 15 minutes

Consider helicopters or rapid response vehicle

- Ongoing resuscitation
  - Collapse or shock
  - Severe asphyxia
  - Cyanosis or bradycardia
- Extreme Prematurity
  - < 32 weeks in level 1 - 2 hospital
  - ≤ 28 weeks in level 3 - 5 hospital
- Ventilated in
  - Any nursery without mechanical ventilator
  - Level 1 - 3 hospital
  - Greater than 60% oxygen
- Infant in hospital without staff or equipment to deal with clinical situation
- Bile-stained vomiting – urgent need to rule out malrotation

Priority 2 - Urgent - Depart within 30 minutes

- Patient requires prompt retrieval but with no immediate threat to life

Priority 3 - Non-Urgent - Depart within 2 hours

- Patient in a stable condition with reasonable resources available
- Overflow transfers (some)

Priority 4 - Elective

- Patient booked for special investigation or appointment
- All booked returns on respiratory support

Returns

- Back transfer of infants who are **NOT** on respiratory support

Consultation

- Contact with PIPER Neonatal in which the infant is **NOT** transported, and the referral remains open until closed by the neonatal consultant.