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Proposal for collecting retrieval data by PICANET

The forms

There will be one form with 3 sections. For ease of reference I have given them colour codes – these are conceptual only.

- Basic referral information - WHITE
- Current PICANET form (with modifications) - PURPLE
- Retrieval section – BLUE

Process

A referral call is made from DGH to PICU.

The clinicians agree that a PICU bed is necessary.

At this point the WHITE section is completed. If the unit is accepting the patient for admission but not retrieving, the PURPLE form is used, if they are retrieving the BLUE form is used.

There is effectively a dichotomous outcome for the field 'Outcome of referral' – 'Admitted to this PICU' or 'Not admitted to this PICU' – the latter has 5 variations according to reason for non-admission (no staff, no retrieval team etc.).

Demographic information is not collected for patients not admitted, as this would be time-consuming for both referring unit and PICU at a time when time pressures are acute.

White section – referral and identifiers

- Referring unit
- Referring Speciality
- Grade of Referring Doctor
- Invasive ventilation at time of referral
- Outcome of referral
- Date and time of referral

If the referral is not admitted to PICU or retrieved by the service receiving the referral, the form is now complete. It means that PICANET core dataset will now include patients who are referred to, but not necessarily admitted to PICU. It will also produce a picture of how often each PICU turns down appropriate patients due to a lack of staffed beds.

If the patient is accepted for retrieval or admission by the PICU, the remainder of the white section is completed:

- Admission number
- NHS Number
- Case note number
- Address
- Postcode
- Ethnic category
- Ethnic Code
- Family name
- 2nd Family name
- First name
- Date of Birth
- Gestational Age at Delivery
- Sex
- Multiple Birth

Blue section - transport

This is completed by the retrieving PICU team. If the transport is by a team other than a PICU retrieval team, it is completed as far as possible by the admitting PICU.

The fields are:

- Datetime referral accepted
- Type of transport episode
- Type of Retrieval Team
- Clinical team leader
- Nursing team
- Technician
- Distance Base – Referring unit
- Distance Referring unit - destination
- Distance Destination Unit – Base
- [Total Distance]*
- [Distance travelled by patient]*
- Delays
- Reason for Delays
- Datetime team activated
- Datetime depart base
- Datetime arrive referring unit
- Datetime depart referring unit
- Datetime arrive
- Datetime arrive destination
- Datetime arrive base
- [Lead time]*
- [Mobilisation time]*
- [Outward journey]*
- [Stabilisation time]*
- [Return journey]*
- [Return to base]*
- [Total time]*
- Collection area
- Most senior staff present
- PIM/PIM2 Medical History (13 fields)**
- PIM/ PIM2 – Reason for admission (7 fields)**
- PIM/ PIM2 Physiology (10 fields)**
- First hour interventions
- Interventions beyond first hour (9 fields)
- Mode of transport (6 fields)
- AIR – mode outward
- AIR – mode homeward
- Datetime depart airport
- Datetime arrive referring unit airport

Datetime depart referring unit airport
Datetime depart destination airport
[Air time]*
Blue light
Level of Care
Destination unit
Organisational delays outward
Organisational delays homeward
Organisational delays duration
Incidents in transfer (18 fields)
Free text area

*Calculated fields included in database, but not present on form

** These fields exist in the current PICANET dataset, but are recorded in the first hour of contact with PICU, so should be recorded by PICU retrieval team

These above fields replace the following fields on the current PICANET form
PREVICUAD
SOURCEAD
CAREAREAAD

Purple Section - patient admitted

This section is completed by the PICU where the patient is admitted. It consists of the existing data fields in the PICANET form:

- Retrieval
- Retrieval by
- Primary diagnosis
- Other reason for admission
- Operations or procedures performed
- Co-morbidity
- PIM/PIM2 Medical History (13 fields)***
- PIM/ PIM2 – Reason for admission (7 fields)***
- PIM/ PIM2 Physiology (10 fields)***
- Interventions (17 fields)
- Discharge information (5 fields)

***Only completed in this section for patients who were not retrieved by a PICU team. If it is already completed by the retrieval team it will have been entered into the database, and this can be duplicated.

Databases

The databases are unified:-

1. Existing PICANET database for patients admitted to PICU
2. 'New' database for patients declined admission to PICU, and for critically ill children transported between units.

The databases would have a linked field enabling records for a retrieval and an admission to be matched – this allows an individual patient's pathway to be followed. It also allows linking of the PIM PIM2 data from a retrieval section to an admission section.

Linking the databases will help avoid duplication. The CATS service will complete forms (White and Blue sections) for all their retrievals and transfers, and will never complete purple sections. The purple sections contain information regarding diagnosis and clinical course, and CATS may want to record this, e.g. broad diagnostic groupings of cases. Because the databases are linked, a report of this information will be possible.

Worked example

Gareth Jones is a 2 month old with bronchiolitis admitted to Gloucester Royal Infirmary.

He deteriorates and requires intubation and ventilation. The consultant paediatrician refers him to Birmingham Children's Hospital - they are full. Bristol PICU are contacted – they are full, but could retrieve. Cardiff PICU is contacted, and accepts the patient, with the Bristol team retrieving.

On day 2 in Cardiff PICU he deteriorates further and is referred to GOS for ECMO. They have a bed, and ask CATS to retrieve him.

He comes off ECMO and is referred back to Cardiff, still ventilated, on day 14. He is repatriated by the GOS team.

He is discharged from Cardiff on day 18 to his local hospital spontaneously ventilating.

Paperwork- sections completed

| | | |
|----------------------------|--|---|
| Birmingham Children's PICU | 1 White | Not admitted – no staffed bed |
| Bristol Children's PICU | 1 White 1 White/Blue | Not admitted – no staffed bed Referral and Retrieval |
| Cardiff PICU | 1 White/ Purple | Referral and admission |
| CATS | 1 White/Blue | Referral and retrieval |
| GOSH | 1 White/Purple 1 White/Blue | Referral and admission Transfer out |
| Cardiff PICU | 1 White/Purple | Referral and admission |

*No transport form for final repatriation, as he is not requiring critical care.

This complex patient has 8 forms completed and entered into the databases.

In terms of the reports for each participating service: in Birmingham's he appears as a refused admission due to lack of staffed bed; in Bristol he appears as a refused admission due to a lack of a staffed bed, and as a retrieval; in Cardiff he appears as a referral and admission retrieved by another service on the first occasion; at CATS he appears as a referral and retrieval; at GOSH he appears as a referral and admission, then he appears as a transfer out; and finally in Cardiff he appears as an admission retrieved by another service.

Data collection process for different journey types

| | Referring unit | Receiving unit | Transport team | WHITE section | BLUE section | PURPLE section | Database entry |
|----|----------------|----------------|--------------------|----------------------------|--------------|----------------|----------------------------|
| 1 | DGH | PICU A | <i>DGH team</i> | PICU A | PICU A | PICU A | PICU A |
| 2 | DGH | PICU A | <i>PICU A team</i> | PICU A | PICU A | PICU A | PICU A |
| 3 | DGH | PICU A | <i>PICU B/CATS</i> | PICU A + PICU B/CATS | PICU B/CATS | PICU A | PICU A + PICU B/CATS |
| 4 | DGH | Non-PICU | <i>DGH team</i> | PICU A | PICU A | none | PICU A |
| 5 | DGH | Non-PICU | <i>PICU A team</i> | PICU A | PICU A | none | PICU A |
| 6 | DGH | Non-PICU | <i>PICU B/CATS</i> | PICU B/CATS | PICU B/CATS | none | PICU B/CATS |
| 7 | PICU B | PICU A | <i>PICU B team</i> | PICU A | PICU B | PICU A | PICU A |
| 8 | PICU B | PICU A | <i>PICU A team</i> | PICU A | PICU A | PICU A | PICU A |
| 9 | PICU B | PICU A | <i>CATS</i> | PICU A + CATS | CATS | PICU A | PICU A + CATS |
| 10 | PICU A | Non-PICU | <i>PICU A team</i> | PICU A | PICU A | none | PICU A |
| 11 | PICU A | Non-PICU | <i>PICU B team</i> | PICU A | PICU B | none | PICU B |
| 12 | PICU A | Non-PICU | <i>CATS</i> | PICU A | CATS | none | CATS |

In this table for the sake of simplicity, the following definitions are made:

- DGH – any hospital unit which is not a PICU
- DGH team – any transport team which is not form a PICU
- CATS – any regional transport service

Examples

1. Patient with extradural referred by Newport to Cardiff PICU, brought by Newport team
2. Patient referred by Newport to Cardiff and retrieved by Cardiff PICU team
3. Patient referred by Newport to Cardiff, brought to Cardiff by Bristol PICU team (2 entries)
4. Patient referred by Gloucester to Cardiff PICU with extradural, advised to transfer with local team to Frenchay Hospital. *Although this does not directly involve a PICU, the data should be collected as it does involve transport of a critically ill child.*
5. Patient referred by Gloucester to Cardiff PICU with severe burns who needs to go to Frenchay – retrieved to Frenchay by Cardiff PICU
6. Patient referred by Newport to Cardiff with severe burns – CATS take to Chelmsford

7. Patient referred from Bristol PICU to come back to Cardiff PICU for weaning from ventilator – transferred back by Bristol team (2 entries).
8. Patient referred from Bristol PICU to come back to Cardiff PICU for weaning from ventilator – transferred back by Cardiff PICU team.
9. Patient moved from Cardiff to GOS by CATS for ECMO.
10. Ventilated patient transferred from Cardiff to NICU in Newport by Cardiff PICU team.
Although this is a discharge from Cardiff PICU, a new PICANET form is completed for the journey because it is recording the transport of a child receiving intensive care – this child will have 2 PICANET forms – the first describing the original transfer, admission and discharge destination, the second describing the transport to the discharge destination.
11. Patient transferred from Bristol to Newport NICU by Cardiff PICU team.
Similar to journey 10, but because the transport is undertaken by the Bristol team, they will complete the second PICANET form.
12. Patient transferred from GOS post-ECMO to Newport NICU by CATS

Report format

The national report will maintain a similar layout, but will also be able to report on the following areas:-

- Refused admissions, and reasons, for each unit
- Retrievals for each unit, with detail on timings, distances, interventions etc.
- Differences in characteristics and outcomes of patients transported by non-PICU teams.
- Patterns of critical incidents and interventions related to staff seniority, time of day, referring unit type.

For individual units, the following can be reported

- Refused admissions by referring unit
- Retrievals by referring unit
- Differences in first hour interventions and senior staff presence by referring unit
- Transport activity for moving patients to other PICUs
- 'Subcontracted' transport work by service
- Patterns of critical incidents and interventions related to staff seniority, time of day, referring unit.

Definitions

Referring unit

This will need to be selected from a list of all referring hospitals, and perhaps have the freedom for a free text entry for referrals from unusual locations (many units take overseas referrals). The select from a list approach for referring UK hospitals ensures that there is only one way of recording each hospital, and spelling mistakes and use of slightly different names are not recorded as completely different hospitals*.

| | |
|------------|---|
| Definition | Identifies hospital where patient is transferred from |
| Reason | This will allow geographical information to be collected, and will allow individual PICUs to easily describe the referring population for their unit. |
| Format | Hospital name |

*Referring hospital characteristics could be kept on an annual basis (like the current staff survey), and classified, for example, as:-

- Teaching hospital with in-patient paediatrics
- Children's hospital
- DGH with in-patient paediatrics
- DGH with no in-patient paediatrics
- Specialist hospital (e.g. burns, spinal injuries)
- GP run community hospital

Referring specialty

| | |
|------------|---|
| Definition | <p>Hospital specialty from which the primary request for transfer is made. This will usually be General Paediatrics but includes other disciplines, and if it is unclear will be taken as the parent specialty of the doctor who made the call resulting in a transfer.</p> <p><i>EXAMPLE</i> A patient is taken for elective surgery in a DGH, but the operation is complicated and the anaesthetist feels the patient needs PICU for post-op recovery –this would be coded Anaesthetics</p> |
| Reason | <p>Describes the background from which patients are received for epidemiological analysis</p> |
| Format | <p>Choose one from</p> <ul style="list-style-type: none">• General paediatrics• Sub-specialty paediatrics• Neonates• Anaesthetics• General ITU• Neurosurgery• General surgery• Emergency Medicine• Burns and plastics• ENT• Other |

Grade of referring doctor

| | |
|------------|--|
| Definition | Most senior grade of doctor making the initial referral call. |
| Reason | Epidemiological analysis of service organisation and geographical variation. |
| Format | Pick one from:- <ul style="list-style-type: none">• Consultant/ Associate specialist• Middle grade hospital Dr• Junior grade hospital doctor• GP• No doctor involved |

Outcome of referral

| | |
|------------|--|
| Definition | <p>Decision made once it has been agreed that a patient requires a PICU bed</p> <p>The purpose of this field is to collect data on admissions refused for organisational reasons (lack of beds, staff etc). It is not to collect data on all calls for advice or discussion, or to collect data on 'inappropriate referrals'.</p> <p>Example: A call is received from a referring paediatrician who is not sure whether his patient needs PICU. After discussion, the PICU give advice but say that a PICU bed is not required – NO PICANET FORM NEEDED</p> |
| Reason | <p>Epidemiological analysis of service organisation and geographical variation</p> |
| Format | <p>Choose one of the following</p> <ul style="list-style-type: none">• Patient admitted to PICU service• Patient not admitted – no staffed bed available• Patient not admitted – no transport team available• Patient not admitted – condition improved and PICU no longer required• Patient not admitted – died before retrieval team arrived• Patient not admitted – died while retrieving team present• Patient not admitted – died during transit• Patient admitted to other specialist ICU (burns, neuro etc.) |

Invasive ventilation at time of referral

| | |
|------------|---|
| Definition | Patient receiving invasive ventilation or in the process of being intubated at the time the referral call is made. |
| Reason | This will help describe different clinical 'thresholds' at which different services operate, as this is an easily defined variable which discriminates those patients who require intensive care, and those who may only require high dependency care |
| Format | Select one from drop-down list <ul style="list-style-type: none">• Yes• No - not indicated• No - advised to intubate |

Type of transport episode

Transfers out, i.e. movement of a critically ill patient from one PICU to another will be recorded in a new PICANET form in the receiving unit, and is recorded by the referring unit only as a discharge in the patient's existing PICANET form. This avoids duplication.

Where a trust has two or more hospitals on separate sites, a movement of a critically ill patient between the two will be recorded as a transport episode. If the patient is moved between buildings on the same site using an ambulance, this is also recorded as a transport episode. Movement of patients between buildings on the same site which does not involve use of an ambulance is not recorded as a transport episode.

Definition

Retrieval is where a specialist PICU team transfers a critically ill child from a referring hospital to the receiving unit. The team may or may not be part of the accepting unit. This will include transfers by stand alone services, e.g. CATS

Transfer in is when the patient is taken to PICU by a team from the referring hospital (this may or may not be a specialist PICU team)

EXAMPLE child with extradural transferred from DGH to PICU by DGH anaesthetist; child transferred from Cardiff PICU by the Cardiff PICU team to Bristol PICU for cardiac ICU

Transfers out to non-paediatric ICU is when a patient is transferred to an ICU which is not part of PICANET, e.g. a burns unit.

EXAMPLE Child transferred from Cardiff PICU to Swansea Burns Unit.

Transfers to another PICU which participates in PICANET is not to be recorded here, but will be recorded in the admitting unit (as either retrieval or a transfer in). This avoids duplication of data.

Reason

Defines population to be studied

Format

Choose one of a list

- Retrieval
 - Transfer in
 - Transfer out to non-paediatric ICU
-

Type of team

| | |
|------------|---|
| Definition | Whether the team is a specialist PICU team or not |
| Reason | Epidemiological analysis of service organisation |
| Format | Pick one from <ul style="list-style-type: none">• Retrieval team from PICU – <u>record name</u>• Retrieval team from a centralised retrieval service – <u>record name</u>• Retrieval team from neonates• Transfer by referring hospital team• Transfer by other non-specialist team |

The database will have drop down lists of the PICU retrieval teams, and the regional services (CATS, South Thames, Scotland)

Clinical team leader

| | |
|------------|--|
| Definition | <p>The most senior doctor or nurse practitioner who transfers the patient, and are present for the whole journey.</p> <p>This is defined by their current post, not their previous experience – thus a transfer in undertaken by a consultant anaesthetist who previously held a post as a consultant paediatric intensivist will be coded Consultant anaesthetist</p> |
| Reason | <p>Epidemiological analysis of service organisation</p> |
| Format | <p>Two boxes – grade and speciality</p> <p>Grade</p> <ul style="list-style-type: none">• Consultant/ Associate specialist• Registrar/ Staff grade• SHO• Nurse practitioner <p>Speciality</p> <ul style="list-style-type: none">• PICU• Anaesthesia• Adult Intensive Care• Paediatrics• Emergency medicine• Paediatric cardiology• Neonatology• Other |

Nursing personnel undertaking retrieval

| | |
|------------|--|
| Definition | Most senior nurse present who accompanies patient for the whole journey |
| Reason | Epidemiological analysis of service organisation |
| Format | Pick one or several from <ul style="list-style-type: none">• Band 5• Band 6• Band 7• Band 8 |

Technicians/ODP/ODA present on retrieval

| | |
|------------|--|
| Definition | Medical technician accompanying patient on retrieval |
| Reason | Epidemiological analysis of service organisation |
| Format | Yes/No |

Distance travelled by team

| | |
|------------|---|
| Definition | Distance in miles travelled by team, measured by AA mileage charts |
| Reason | Epidemiological analysis of service organisation and geographical variation |
| Format | Number miles (to nearest whole mile) <ul style="list-style-type: none">• Team base – referring unit• Referring unit – destination unit• Destination unit – base |

Distance travelled by patient

| | |
|------------|---|
| Definition | Distance in miles travelled by patient measure by AA mileage charts |
| Reason | Epidemiological analysis of service organisation and geographical variation |
| Format | Number miles (to nearest whole mile) <ul style="list-style-type: none">• Referring hospital - destination |

Duration of transport process*

| | |
|------------|--|
| Definition | <p>Time in minutes (to nearest minute) taken for journey</p> <p>Lead time – time taken from decision by a PICU or a regional retrieval service that the patient needs a PICU bed until a team accepts responsibility to undertake transport or retrieval</p> <p>Mobilisation time – time taken from decision of the retrieving team to transfer patient until the patient team left in the ambulance from the relevant departure point (PICU, stand-alone base, referring hospital)</p> <p>Outward journey (retrieval only) – time from departing in ambulance from base until arrival at patient’s bedside at referring unit.</p> <p>Stabilisation/ turnaround time – time from arriving at patient’s bedside until departure in the ambulance from the referring unit.</p> <p>Return journey – time from departing in ambulance from referring unit to patient arriving in their bed (i.e. it includes time to transfer from trolley to bed), or hand over in theatre or scanner to receiving team.</p> <p>Return to base – time taken to return from transferring patient into the bed at the destination unit to return to retrieval team base.</p> <p>Broken journey – Ticking this box indicates the unusual circumstances came in to play, and the times are recorded as free text (involves diversion to another incident, use of replacement vehicle etc.)</p> |
| Reason | Epidemiological analysis of service organisation |
| Format | <p>Time in minutes entered for the following</p> <ul style="list-style-type: none">• Mobilisation time• Outward journey• Stabilisation/ turnaround time• Return journey• Return to base journey• Total time |

*in any of the fields I have indicated as recording times, my intention is that the person filling in the data form will record an actual time of day (to the nearest minute), and the database will calculate the interval and total timings – but I don't know how feasible this is.

Delay between referral and acceptance

| | |
|------------|---|
| Definition | <p>Record in minutes the time of delay between the patient being referred for a PICU bed (when it was agreed that a bed was needed), and the patient finally being accepted.</p> <p>It is important that there is only a delay recorded where both the referring hospital AND the unit the patient was originally referred to agreed that PICU was needed. A not uncommon situation occurs when a borderline patient is referred to unit A and denied a bed because unit A does not feel PICU is needed, but the patient is then referred to unit B who decide to accept them – this is not an organisational delay, and is not what this data field is intended to record.</p> |
| Reason | <p>Epidemiological analysis of service organisation and geographical variation to identify impact of organisational delays.</p> |
| Format | <p>Number of minutes</p> |

Reason for delay between referral and acceptance

| | |
|------------|--|
| Definition | If previous field is filled in, this tick box section should be completed |
| Reason | Epidemiological analysis of service organisation and geographical variation |
| Format | One or several of <ul style="list-style-type: none">• Refused by other PICU(s) first• No team available to retrieve patient• No bed available to admit patient |

Collection area

| | |
|------------|--|
| Definition | Hospital area where the patient is collected from, or departs from in the case of transfers out. This describes a physical location rather than a level of care – <i>EXAMPLE</i> - a patient collected from a paediatric ward where one of the normal bed-spaces is being used, but it is being staffed as HDU should still be coded as General ward area. If there is a dedicated paediatric HDU, then code it HDU |
| Reason | Epidemiological analysis |
| Format | Pick one from <ul style="list-style-type: none">• General ward area• Paediatric HDU• Non-paediatric HDU• A+E• Theatre/Recovery• ICU• PICU• NICU/ SCBU• Other |

Most senior member of medical staff present at referring unit (retrieval only)

| | |
|------------|---|
| Definition | Most senior member of medical staff handing over the patient for retrieval |
| Reason | Epidemiological analysis of service organisation |
| Format | Pick one from <ul style="list-style-type: none">• Consultant• Registrar/ Middle grade• SHO• None |

Interventions by retrieval team in first hour (retrievals only)

| | |
|------------|--|
| Definition | <p>Primary intubation – patient is unintubated when the team arrive, and is then intubated</p> <p>Re-intubation – patient has been intubated before the team arrive, but is reintubated in the presence of the team.</p> <p>Primary central venous access – patient does not have central venous access on the arrival of the team (intraosseus access is regarded separately), and is gained by the retrieval team.</p> <p>Additional central venous access – patient already has central access, but more obtained by retrieval team</p> <p>Inotropes commenced within first hour – inotrope infusion connected and running within 60 mins of team arriving</p> <p>Prostaglandin infusion within first hour</p> <p>Primary intraosseus access – patient has no IO access, but this is obtained after retrieval team arrive</p> <p>Additional intraosseus access – patient already has IO access, but more is obtained.</p> <p>Chest drain insertion</p> |
| Reason | <p><i>May</i> reflect intensity of treatment prior to arrival of team, <i>may</i> show different performance between different seniority of staff.</p> |
| Format | Tick boxes |

Interventions by retrieval team beyond first hour

| | |
|------------|--|
| Definition | <p>Primary intubation – patient is unintubated when the team arrive, and is then intubated</p> <p>Re-intubation – patient has been intubated before the team arrive, but is reintubated in the presence of the team.</p> <p>Primary central venous access – patient does not have central venous access on the arrival of the team (intraosseus access is regarded separately), and is gained by the retrieval team.</p> <p>Additional central venous access – patient already has central access, but more obtained by retrieval team</p> <p>Inotropes commenced within first hour – inotrope infusion connected and running within 30 mins of team arriving</p> <p>Prostaglandin infusion within first hour</p> <p>Primary intraosseus access – patient has no IO access, but this is obtained after retrieval team arrive</p> <p>Additional intraosseus access – patient already has IO access, but more is obtained.</p> <p>Chest drain insertion</p> |
| Reason | <p><i>May</i> reflect intensity of treatment prior to arrival of team, <i>may</i> show different performance between different seniority of staff.</p> |
| Format | Tick boxes |

Mode of transport

| | |
|------------|--|
| Definition | Describes all modes of transport used by the team. |
| Reason | Epidemiological analysis of service organisation |
| Format | Tick box one <i>or several of</i> <ul style="list-style-type: none">• Dedicated retrieval service ambulance• Other NHS ambulance• Other private ambulance• Rapid response vehicle• Taxi• Air – next section |

Air transport – mode outward

| | |
|------------|---|
| Definition | Mode of air transport used for outward journey |
| Reason | Epidemiological analysis of service organisation and geographical variation |
| Format | One of <ul style="list-style-type: none">• Fixed wing unpressurised• Fixed wing pressurised• Helicopter – dedicated medical ambulance• Helicopter – forces or emergency services |

Air transport – mode homeward

| | |
|------------|---|
| Definition | Mode of air transport used for homeward journey |
| Reason | Epidemiological analysis of service organisation and geographical variation |
| Format | One of <ul style="list-style-type: none">• Fixed wing unpressurised• Fixed wing pressurised• Helicopter – dedicated medical ambulance• Helicopter – forces or emergency services |

Air transport times

| | |
|------------|---|
| Definition | Breakdown of individual parts of journey (minutes) |
| Reason | Epidemiological analysis of service organisation and geographical variation |
| Format | The following timings in minutes (or time to the nearest minute) <ul style="list-style-type: none">• Referral accepted – team mobilised• Base – airport• Home airport – destination airport*• Destination airport – referring hospital• Stabilisation time• Referring hospital – destination airport• Destination airport – home airport• Home airport – destination unit• Return to base if different from destination unit• Total time |

*airport can mean any landing area, eg a beach on Barra

Blue light

| | |
|------------|---|
| Definition | Was a blue light or siren used for the journey |
| Reason | This means intention to use. <i>Example</i> Doctor asks for blue light, but during large portions of the journey the motorway is clear and the driver turns the lights off, but the intention is clearly to use them if traffic becomes heavy. Epidemiological analysis of service organisation – does use of blue light significantly alter transfer times? |
| Format | Pick one of <ul style="list-style-type: none">• Not used• Used outward journey• Used return journey |

Maximum level of care during retrieval

| | |
|------------|--|
| Definition | <p>Adapted from PICS standards (but not identical as they make definitions on basis of therapies received only once in a PICU)</p> <p>Level 1 – non-inubated child, HDU</p> <p>Level 2 – invasive ventilatory support; two or more organ systems requiring support, but stable</p> <p>Level 3 – multiple organ sytems requiring support, and unstable</p> |
| Reason | Epidemiological analysis, and comparison between units. |
| Format | <p>Pick one of</p> <ul style="list-style-type: none">• Level 1• Level 2• Level 3• ECMO anticipated• Receiving ECMO |

Destination unit

| | |
|------------|---|
| Definition | Type of unit to which patient is admitted |
| Reason | Epidemiological analysis of service organisation and geographical variation |
| Format | One of <ul style="list-style-type: none">• PICU• NICU• Adult ICU• HDU• General ward• Home (e.g. for withdrawal of ventilation)• Secondary retrieval service (e.g hand over at an airport for international transfers) |

Organisational delays in transport process - outward

| | |
|------------|---|
| Definition | Record time delays due to lack of available transport |
| Reason | Epidemiological analysis of service organisation and geographical variation |
| Format | One or several of <ul style="list-style-type: none">• Team already out on retrieval• No staff available for retrieval• Delay in available vehicle for retrieval• Other |

Organisational delays in transport process - homeward

| | |
|------------|--|
| Definition | Record time delays due to lack of available transport |
| Reason | Epidemiological analysis of service organisation and geographical variation |
| Format | One or several of <ul style="list-style-type: none">• Delay in available vehicle for retrieval• Staff asked to deal with separate emergency |

Duration of organisational delays

| | |
|------------|---|
| Definition | Total time lost through delays |
| Reason | Epidemiological analysis of service organisation and geographical variation |
| Format | Total time in minutes |

Incidents during transfer

| | |
|------------|--|
| Definition | <p>Identifies a critical incident during transit until patient is in their bed at the destination unit.</p> <p>Delayed connection describes situation in air retrieval where the plane is not ready to depart when the ambulance arrives, or where the ambulance is not waiting on the runway when the plane arrives.</p> <p>Diverted same unit describes the situation where the team is out, but is asked to retrieve a different patient from the same unit as the call was received from</p> <p>Diverted other unit describes the situation where the team are heading for one unit, but are requested to divert to another unit en route.</p> <p>Emergency diversion is where the transferring team has to divert to another hospital en route because the patient has deteriorated or there is a technical failure</p> |
| Reason | Some may be quality indicators? |
| Format | <p>Choose one or several of</p> <ul style="list-style-type: none">• Accidental extubation• Required intubation in transit• Required chest drain insertion• Significant desaturation/ bradycardia• Significant unanticipated hypotension• Ventilator failure• Loss of oxygen supply• Loss of iNO supply• Loss of O2 sats monitoring > 1minute• Loss of all IV access• Cardiac arrest, successfully resuscitated• Death• Vehicle accident, journey resumed• Vehicle accident, journey abandoned• Vehicle breakdown, recovered and journey completed• Vehicle breakdown, transfer second |

vehicle

- Delayed connection
 - Diverted same unit
 - Diverted other unit
 - Equipment incompatibility (eg trolley doesn't securely fit in ambulance)
-

Timelines

