

PAROS

Data Collection & Taxonomy

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Overview

1. Program Database
2. Methods for EMS Data Collection
3. Methods for Hospital Data Collection
4. Data fields
5. Data Dictionary
6. Data flow
7. Electronic CRF
 - ➔ Further improvements
8. Summary

Program Database

- ❖ Sansio

- ➔ Server and software provider

- ❖ SCRI

- ➔ House the server

- ➔ Provide maintenance and technical expertise

- ❖ Internet database system:

- www.eparos.org (operational by June)

- ❖ Integrates EMS and Hospital data

Methods for EMS Data Collection

Direct Entry Online

Data can be entered directly into the registry wherever there is internet connection by PAROS EMS contact or EMS field providers/supervisors

Mobile Field Entry

Data can be automatically extracted from existing patient's electronic record system which then auto-populates the PAROS registry

Methods for Hospital Data Collection

For EMS cases:

PAROS will generate an email when a PAROS patient was transported to the receiving hospital

For non-EMS cases:

**Direct Entry
Online**

Data can be entered directly into the registry wherever there is internet connection by hospital contacts

Data Fields

Mode of Transportation

Patient brought in by ₁ EMS ₂ Non-EMS
If 'Non-EMS', please specify ₁ Private ambulance ₂ Own transport ₃ Public transport

Incident Information

Date of incident (dd/mm/yyyy)
Location of incident _____
(including Zip Code) _____
Location type ₁ Home residence ₂ Healthcare facility ₃ Public/Commercial building
₄ Nursing home ₅ Street/Highway ₆ Industrial place
₇ Place of recreation ₈ Other, specify _____

Patient Information

Date of birth (dd/mm/yyyy) Age Days
 Months
 Years
Gender ₁ Male ₂ Female
Race (Singapore site only) ₁ Chinese ₂ Malay ₃ Indian ₄ Eurasian ₅ Other
Medical history ₁ No ₂ Unknown ₃ Heart disease ₄ Diabetes
₅ Cancer ₆ Hypertension ₇ Renal disease
₈ Respiratory disease ₉ Hyperlipidemia ₁₀ Other

EMS or non-EMS
demographics

Data Fields

Computer aided dispatch time

Dispatch Information (Not Applicable for Non-EMS case)

| | | | |
|---------------------------------------|---|------------|--|
| Time call received at dispatch center | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | (hh:mm:ss) | <input type="checkbox"/> <u>No</u> First |
| Time First responder dispatched | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | (hh:mm:ss) | Responder |
| Time Ambulance dispatched | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | (hh:mm:ss) | |
| Time First responder arrived at scene | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | (hh:mm:ss) | |
| Time Ambulance arrived at scene | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | (hh:mm:ss) | |
| Time EMS arrived at patient side | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | (hh:mm:ss) | |
| Time Ambulance left scene | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | (hh:mm:ss) | |
| Time Ambulance arrived at ED | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | (hh:mm:ss) | |

Data Fields

Prehospital event and resuscitation information

Prehospital Event and Resuscitation Information

Estimated time of arrest (hh:mm:ss)

Arrest witnessed by _1 Not witnessed _2 Bystander _3 EMS team/Private Ambulance

If arrest witnessed by 'bystander', please specify _1 Family _2 Lay person _3 Healthcare provider

First CPR initiated by _1 Bystander _2 First responder _3 Ambulance crew

If first CPR initiated by 'bystander', please specify _1 Family _2 Lay person _3 Healthcare provider

Bystander AED applied _1 Yes _2 No

Resuscitation attempted by EMS/Private ambulance _1 Yes _2 No

First arrest rhythm _1 VF _2 VT _3 PEA _4 Asystole

_5 Unknown *shockable* rhythm _6 Unknown *unshockable* rhythm

Time CPR started by EMS/Private ambulance (hh:mm:ss)

Time AED applied by EMS/Private ambulance (hh:mm:ss)

Prehospital defibrillation _1 Yes _2 No

If 'Yes', time of first shock given (hh:mm:ss) _3 Unknown

Defibrillation performed by _1 Bystander _2 First responder _3 Ambulance crew

If performed by 'bystander', please specify _1 Family _2 Lay person _3 Healthcare provider

Mechanical CPR device used by EMS/Private ambulance _1 Yes _2 No

Advanced airway used by EMS/Private ambulance _1 Yes _2 No

If 'Yes', please specify _1 Oral ET _2 Combitube/LMA/King airway _3 Other

Drug administration by EMS/Private ambulance _1 Yes _2 No

If 'Yes', select drugs given _1 Epinephrine _2 Atropine _3 Amiodarone _4 Bicarbonate

_5 Lidocaine _6 Dextrose _7 Other

Return of spontaneous circulation at scene/en-route _1 Yes _2 No

If 'Yes', specify time (hh:mm:ss)

CPR discontinued at scene _1 Yes _2 No

If 'Yes', please specify _1 DNR _2 ROSC _3 Medical control order

_4 Obvious signs of death _5 Protocol/policy requirements completed

Cause of arrest _1 Trauma _2 Non-trauma

If 'Non-trauma', please specify _1 Presumed cardiac etiology _2 Respiratory

_3 Electrocutation _4 Drowning _6 Other

Data Fields

Prehospital Disposition

Disposition

- | | | | | |
|--------------------------------|--|--|---|--|
| Final status at scene | <input type="checkbox"/> ₁ Conveyed to ED | <input type="checkbox"/> ₂ Pronounced dead at scene | | |
| Destination hospital | <input type="checkbox"/> ₁ AH | <input type="checkbox"/> ₂ CGH | <input type="checkbox"/> ₃ KKH | <input type="checkbox"/> ₄ KTPH |
| | <input type="checkbox"/> ₅ NUH | <input type="checkbox"/> ₆ TTSH | <input type="checkbox"/> ₇ SGH | |
| Patient's status at ED arrival | <input type="checkbox"/> ₁ ROSC | <input type="checkbox"/> ₂ Ongoing resuscitation | | |

Data Fields

Hospital data –
ED resuscitation
and outcome
information

ED Resuscitation Information (Not Applicable for cases that were pronounced dead at scene)

| | | |
|---|---|--------------|
| Date of arrival at ED | <input type="text"/> | (dd/mm/yyyy) |
| Time of arrival at ED | <input type="text"/> | (hh:mm:ss) |
| Patient status on arrival at ED | <i>Breathing</i> <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| | <i>Pulse</i> <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| Cardiac rhythm on arrival at ED | <input type="checkbox"/> VF <input type="checkbox"/> VT <input type="checkbox"/> PEA | |
| | <input type="checkbox"/> Asystole <input type="checkbox"/> Sinus or other perfusing rhythm | |
| ED defibrillation | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| Mechanical CPR device used at ED | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| Advanced airway used at ED | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| | <i>If 'Yes', please specify</i> <input type="checkbox"/> Oral ET <input type="checkbox"/> Combitube/LMA/King airway <input type="checkbox"/> Other | |
| Drug administration at ED | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| | <i>If 'Yes', select drugs given</i> <input type="checkbox"/> Epinephrine <input type="checkbox"/> Atropine <input type="checkbox"/> Amiodarone <input type="checkbox"/> Bicarbonate | |
| | <input type="checkbox"/> Lidocaine <input type="checkbox"/> Dextrose <input type="checkbox"/> Other | |
| Return of spontaneous circulation at ED | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| | <i>If 'Yes', specify time</i> <input type="text"/> | (hh:mm:ss) |
| Emergency PCI | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| Emergency CABG | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| Hypothermia therapy | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| ECMO therapy | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| Cause of arrest | <input type="checkbox"/> Trauma <input type="checkbox"/> Non-trauma | |
| | <i>If 'Non-trauma', please specify</i> <input type="checkbox"/> Presumed cardiac etiology <input type="checkbox"/> Respiratory | |
| | <input type="checkbox"/> Electrocutation <input type="checkbox"/> Drowning <input type="checkbox"/> Other | |
| Outcome of patient | <input type="checkbox"/> Admitted | |
| | <input type="checkbox"/> Transferred to another hospital | |
| | <input type="checkbox"/> Patient died in ED | |

Data Fields

Hospital data – Survival's outcome

Hospital Outcome (FOR PATIENT WHO SURVIVED TO ADMISSION)

| | |
|---|--|
| Patient status | <input type="checkbox"/> ₁ Discharged alive |
| | <input type="checkbox"/> ₂ Remains in hospital at 30 th day post arrest |
| | <input type="checkbox"/> ₃ Died in hospital |
| Date of Discharge or Death | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> (dd/mm/yyyy) |
| Patient neurological status on discharge or at 30th day post arrest | Cerebral Performance Category <input type="checkbox"/> |
| | Overall Performance Category <input type="checkbox"/> |

Patient Health and Quality of Life

(FOR PATIENT WHO IS DISCHARGED ALIVE or ALIVE ON 30th DAY POST ARREST)

| | | | |
|---|--|---|---|
| <u>EQ-5D Health Dimensions</u> | | | |
| Mobility | <input type="checkbox"/> ₁ No problem | <input type="checkbox"/> ₂ Some problems | <input type="checkbox"/> ₃ Confined to bed |
| Self-care | <input type="checkbox"/> ₁ No problem | <input type="checkbox"/> ₂ Some problems | <input type="checkbox"/> ₃ Unable to wash or dress |
| Usual activities | <input type="checkbox"/> ₁ No problem | <input type="checkbox"/> ₂ Some problems | <input type="checkbox"/> ₃ Unable to perform |
| Pain/Discomfort | <input type="checkbox"/> ₁ None | <input type="checkbox"/> ₂ Moderate | <input type="checkbox"/> ₃ Extreme |
| Anxiety/Depression | <input type="checkbox"/> ₁ None | <input type="checkbox"/> ₂ Moderate | <input type="checkbox"/> ₃ Extreme |
| <u>EQ-5D Visual Analog Scale (VAS)</u> | | | |
| | | | |
| *100 (best imaginable health state) and 0 (worst imaginable health state) | | | |

Patient Health & Quality of Life (EQ-5D)

- ❖ EQ-5D is a standardised instrument for use as a measure of health outcome.
- ❖ Consist of five dimensions (mobility, self-care, usual activities, pain/discomfort, anxiety/depression)
- ❖ Applicable to a wide range of health conditions and treatments.
- ❖ Provides a single index score for health status.

(extracted from <http://www.euroqol.org/>)

Data Dictionary

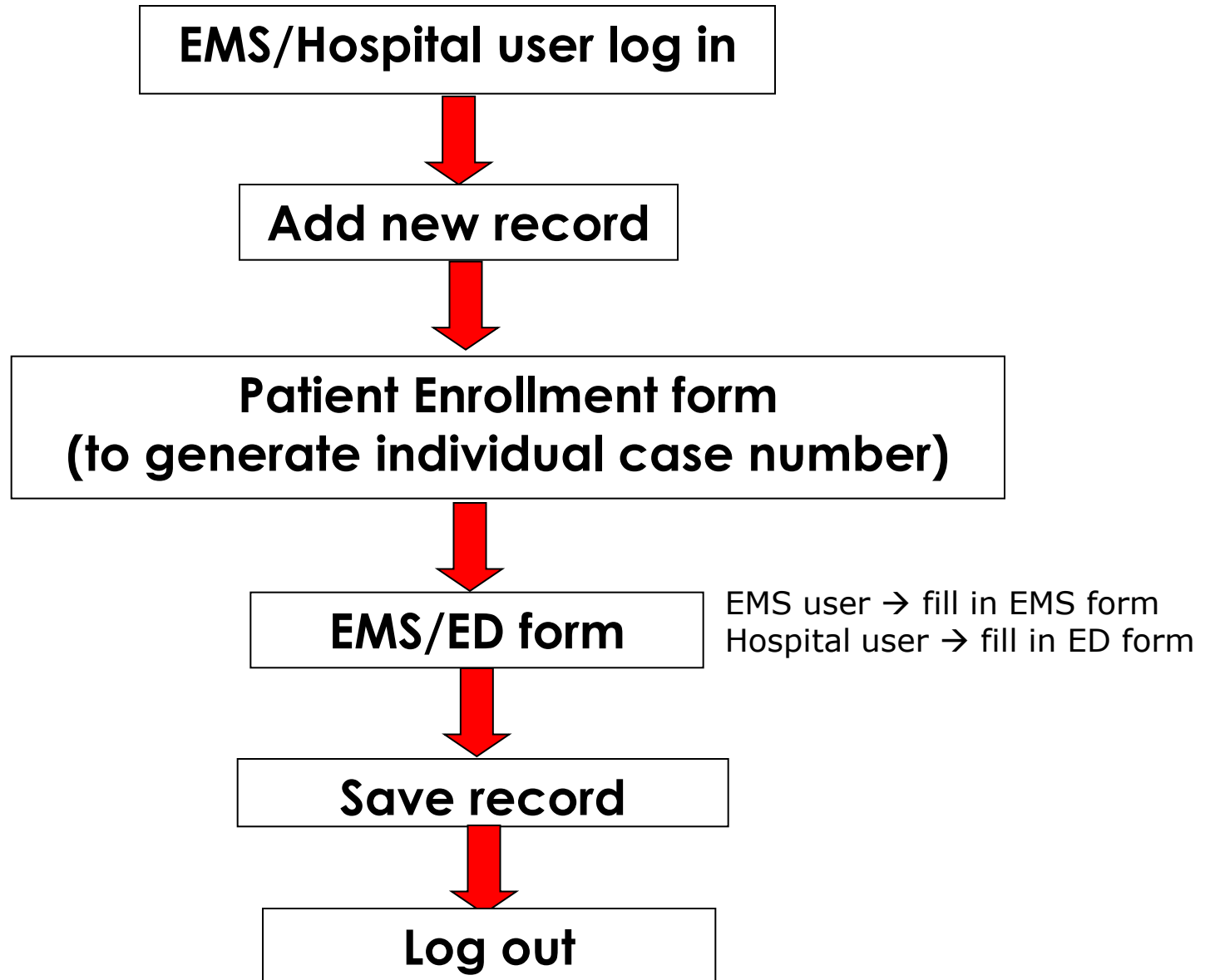
Sample of condensed taxonomy

The complete PAROS Taxonomy will be available in the web at a later date.

Sample of a condensed PAROS taxonomy

| EMS and Hospital Data | |
|--|---|
| (*The preferred source of data is the EMS patient case record and ED and/or hospital patient case record.) | |
| Mode of Transportation: | |
| <i>Patient brought in by</i> | Indicate "EMS" or "Non-EMS" Brought in by 'EMS' refers to case that was conveyed by ambulance which was dispatched via EMS dispatch center. Brought in by 'non-EMS' refers to case that was conveyed by private ambulance which was <u>NOT</u> dispatched via EMS dispatch center, own transport or public transport. If patient was brought in by 'non-EMS', indicate the mode of transportation: private ambulance, own transport or public transport. |
| Incident Information: | |
| <i>Date of Incident</i> | Provide the date when the cardiac arrest occurred. Enter date as dd/mm/yyyy. |
| <i>Location of incident</i> | Record the address or location of incident where the patient was found, including the postal/zip code. |
| <i>Location type</i> | Indicate type of location where the patient was found. Check only <u>ONE</u> that applies from the list provided. |
| Patient Information: | |
| <i>Date of birth</i> | Provide patient's date of birth and enter date as dd/mm/yyyy. Select the "Unknown DOB" box if the date of birth is unknown. |
| <i>Age</i> | This component will be auto-generated if the 'Date of birth' has been entered. If "Unknown DOB" was selected, provide patient's <i>estimated</i> age and select the appropriate units for the recorded age in the field. |
| <i>Gender</i> | Indicate "male" or "female". |
| <i>Race</i> <i>(Singapore site only)</i> | Indicate the race of the patient. Check only <u>ONE</u> that applies from the list provided. |
| <i>Medical history</i> | Check all that applies from the list of medical histories provided. Indicate "Unknown" if unable to obtain any medical history from bystander. |

Data Flow – EMS case



Electronic CRF – EMS case

1. EMS/hospital
user log in

EMS log in

Username: paros

Password: paros12

Hospital log in

Username: parosHosp

Password: paros12


Log In to myCares™

Username:

Password:

[Log In](#)

[Did you forget your password?](#)



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[Press on Cares](#)

[Maps](#)

[IRB/HIPAA](#)

[NAEMSP](#)

<https://beta.mycares.net/>

Electronic CRF – EMS case

2. Add new record

The screenshot displays the myCares.NET web application interface. At the top, a yellow banner contains the text "+++++++PAROS+++++++". Below this is the myCares.NET logo, which includes the text "powered by Sansio". A navigation menu is visible with the following items: Home, Setup, eCares, Xchange, Reports, Tools, and Log Out. The "eCares" menu item is expanded, showing a dropdown menu with two options: "Cares Search" and "Add New". The "Add New" option is highlighted with a red rectangular box. Below the navigation menu, the text "myDashboard" is visible, and a blue button labeled "myDashboard Main" is present.

Electronic CRF – EMS case

3. Patient Enrollment Form (to generate individual case number)

[Home](#) | [Setup](#) ▼ | [eCares](#) ▼ | [Xchange](#) ▼ | [Reports](#) ▼ | [Tools](#) ▼ | [Log Out](#)

Patient Enrollment

Country

City/EMS District

Site Number

Patient's Name

ID Number

Date of arrival at ED

Save

Case number

This number is auto-generated upon completion of the patient enrolment form.

[Home](#) | [Setup ▼](#) | [eCares ▼](#) | [Xchange ▼](#) | [Reports ▼](#) | [Tools ▼](#) | [Log Out](#)

Case number: SG020310008

Mode of Transportation

Patient brought in by

EMS

Electronic CRF – EMS case

4. EMS form

| Incident Information | | |
|----------------------|---|--------------------------------------|
| Date of Incident | <input type="text"/> <input type="text"/> <input type="text"/> | Incident number <input type="text"/> |
| Location of Incident | <input type="text"/> | |
| Location Type | <input type="radio"/> Home Residence <input type="radio"/> Healthcare Facility <input type="radio"/> Public/Commercial Building <input type="radio"/> Residential Institution <input type="radio"/> Street/Highway <input type="radio"/> Industrial Place <input type="radio"/> Place of Recreation <input type="radio"/> Other, specify <input type="text"/> | |

| Patient Information | | |
|----------------------------|--|--|
| Date of Birth | <input type="text"/> <input type="text"/> <input type="text"/> | Age <input type="text"/> <input type="radio"/> Days <input type="radio"/> Months <input type="radio"/> Years |
| Gender | <input type="text"/> <input type="button" value="v"/> | |
| Race (singapore site only) | <input type="text"/> <input type="button" value="v"/> | |
| Medical History | <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Heart disease <input type="checkbox"/> Diabetes <input type="checkbox"/> Cancer <input type="checkbox"/> Hypertension <input type="checkbox"/> Renal Disease <input type="checkbox"/> Other | |

| Dispatch Information | | |
|---------------------------------------|--|--|
| Time call received at dispatch center | <input type="text"/> : <input type="text"/> : <input type="text"/> | <input type="checkbox"/> <u>No</u> First Responder |
| Time First responder dispatched | <input type="text"/> : <input type="text"/> : <input type="text"/> | |
| Time Ambulance dispatched | <input type="text"/> : <input type="text"/> : <input type="text"/> | |
| Time First responder arrived at scene | <input type="text"/> : <input type="text"/> : <input type="text"/> | |
| Time Ambulance arrived at scene | <input type="text"/> : <input type="text"/> : <input type="text"/> | |
| Time EMS arrival at patient side | <input type="text"/> : <input type="text"/> : <input type="text"/> | |
| Time Ambulance left scene | <input type="text"/> : <input type="text"/> : <input type="text"/> | |
| Time Ambulance arrived at ED | <input type="text"/> : <input type="text"/> : <input type="text"/> | |

Electronic CRF – EMS case

EMS Event and Resuscitation Information

Estimated time of arrest

 : :

Arrest witnessed by

- Not witnessed EMS team/Ambulance crew
 Bystander - Family Bystander - Lay Person Bystander - Healthcare provider

First CPR initiated by

- First Responder Ambulance Crew
 Bystander - Family Bystander - Lay Person Bystander - Healthcare provider

Bystander AED applied

- Yes No

Resuscitation attempted by EMS

- Yes No

First arrest rhythm

- VF VT PEA Asystole
 Unknown Shockable Rhythm Unknown Unshockable Rhythm

Time CPR started by EMS

 : :

Time AED applied by EMS

 : :

Prehospital defibrillation

- Yes No

If 'Yes', time of first shock given

 : : Unknown

Defibrillation performed by

- First Responder Ambulance Crew
 Bystander - Family Bystander - Lay Person Bystander - Healthcare provider

Mechanical CPR device used by EMS

- Yes No

Advanced airway used by EMS

- Yes No

If 'Yes', please specify Oral ET Combitube/LMA/King airway Other

Drug administration by EMS

- Yes No

If 'Yes', select drugs given Epinephrine Atropine Amiodarone Bicarbonate

Lidocaine Dextrose Other

Electronic CRF – EMS case

5. Save record

Return of spontaneous circulation at scene/en-route Yes No
If 'Yes', specify time : :

CPR discontinued at scene Yes No
If 'Yes', please specify DNR ROSC Medical Control Order
 Obvious Signs of Death Protocol/Policy Requirements completed

Cause of arrest Trauma Non-Trauma
If 'Non-Trauma', please specify Presumed Cardiac Etiology Respiratory
 Electrocutation Drowning Other

Disposition

Final status at scene Conveyed to ED Pronounced dead at scene

Destination hospital

Patient's status at ED arrival ROSC Ongoing resuscitation

General Comments

Electronic CRF – EMS case

ED form

ED form has 2 additional sections:

1. ED Resuscitation Information

2. Patient Health and Quality of Life

| ED Resuscitation Information (Not Applicable for cases that were pronounced dead at scene) | |
|--|---|
| Date of arrival at ED | <input type="text"/> <input type="text"/> <input type="text"/> |
| Time of arrival at ED | <input type="text"/> : <input type="text"/> : <input type="text"/> |
| Patient status on arrival at ED | Breathing <input type="radio"/> Yes <input type="radio"/> No Pulse <input type="radio"/> Yes <input type="radio"/> No |
| Cardiac rhythm on arrival at ED | <input type="radio"/> VF <input type="radio"/> VT <input type="radio"/> PEA <input type="radio"/> Asystole <input type="radio"/> Sinus or other perfusing rhythm |
| ED Defibrillation | <input type="radio"/> Yes <input type="radio"/> No |
| Mechanical CPR device used at ED | <input type="radio"/> Yes <input type="radio"/> No |
| Advanced airway used at ED | <input type="radio"/> Yes <input type="radio"/> No If 'Yes', please specify <input type="radio"/> Oral ET <input type="radio"/> Combitube/LMA/King airway <input type="radio"/> Other |
| Drug administration at ED | <input type="radio"/> Yes <input type="radio"/> No If 'Yes', select drugs given <input type="checkbox"/> Epinephrine <input type="checkbox"/> Atropine <input type="checkbox"/> Amiodarone <input type="checkbox"/> Bicarbonate <input type="checkbox"/> Lidocaine <input type="checkbox"/> Dextrose <input type="checkbox"/> Other |
| Return of spontaneous circulation at ED | <input type="radio"/> Yes <input type="radio"/> No If 'Yes', specify time <input type="text"/> : <input type="text"/> : <input type="text"/> |
| Emergency PCI | <input type="radio"/> Yes <input type="radio"/> No |
| Emergency CABG | <input type="radio"/> Yes <input type="radio"/> No |
| Hypothermia therapy | <input type="radio"/> Yes <input type="radio"/> No |
| ECMO therapy | <input type="radio"/> Yes <input type="radio"/> No |
| Cause of arrest | <input type="radio"/> Trauma <input type="radio"/> Non-Trauma If 'Non-Trauma', please specify <input type="radio"/> Presumed Cardiac Etiology <input type="radio"/> Respiratory <input type="radio"/> Electrocutation <input type="radio"/> Drowning <input type="radio"/> Other |

Electronic CRF – ED Form

Outcome of patient

- Admitted
- Transferred to another hospital
- Patient died in ED

Patient status

- Discharged alive
- Remains in hospital at 30th day post arrest
- Died in hospital

Date of Discharge or Death

Patient neurological status on discharge or at 30th day post arrest

Cerebral Performance Category

Overall Performance Category

Patient Health and Quality of Life (For patient who is discharged alive or alive on 30th day post arrest)

ED-5D Health Dimensions

Mobility

- No problem
- Some problems
- Confined to bed

Self-care

- No problem
- Some problems
- Unable to wash or dress

Usual activities

- No problem
- Some problems
- Unable to perform

Pain/Discomfort

- None
- Moderate
- Extreme

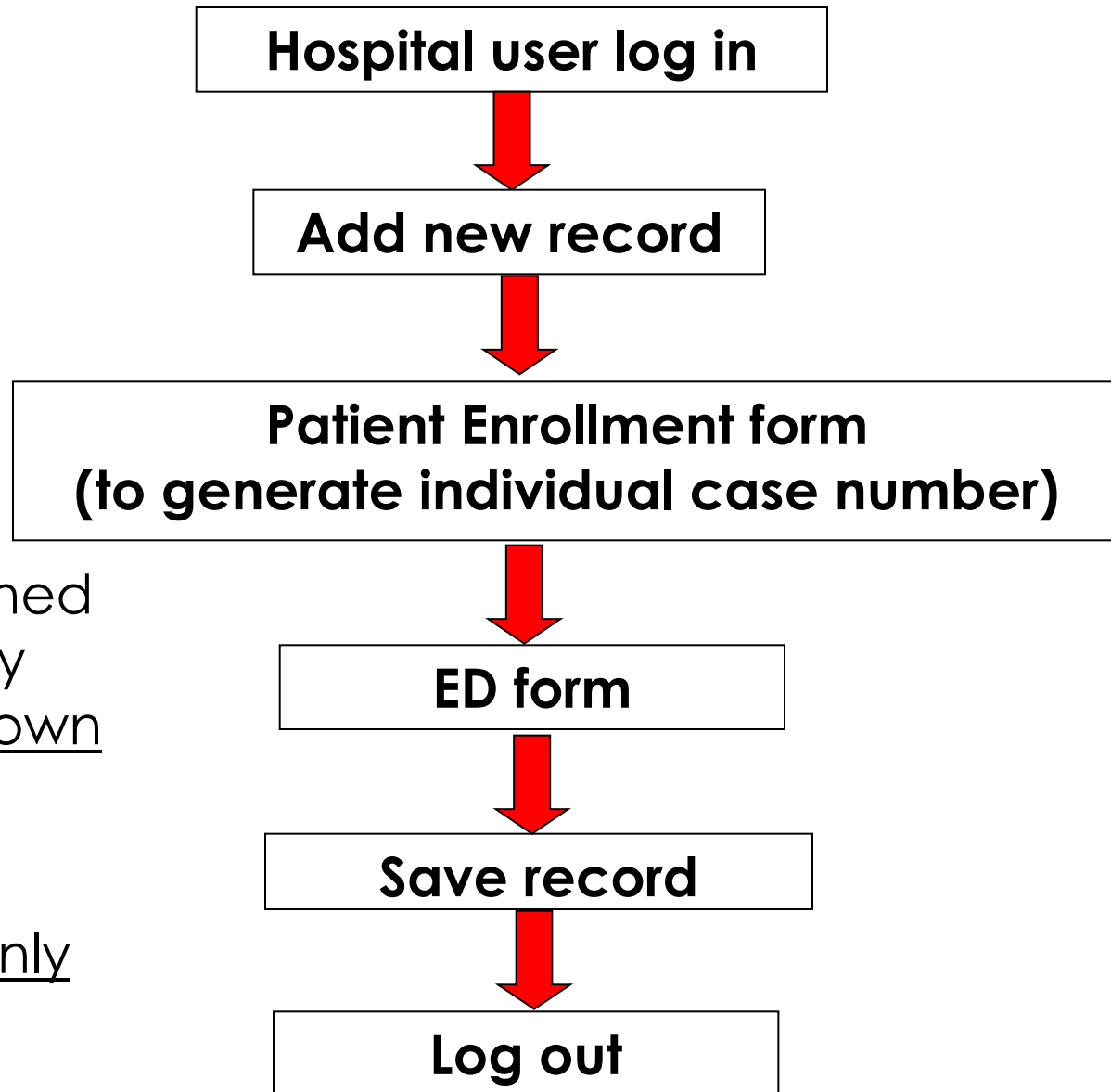
Anxiety/Depression

- None
- Moderate
- Extreme

ED-5D Visual Analog Scale (VAS)

*100 (best imaginable health state) and 0 (worst imaginable health state)

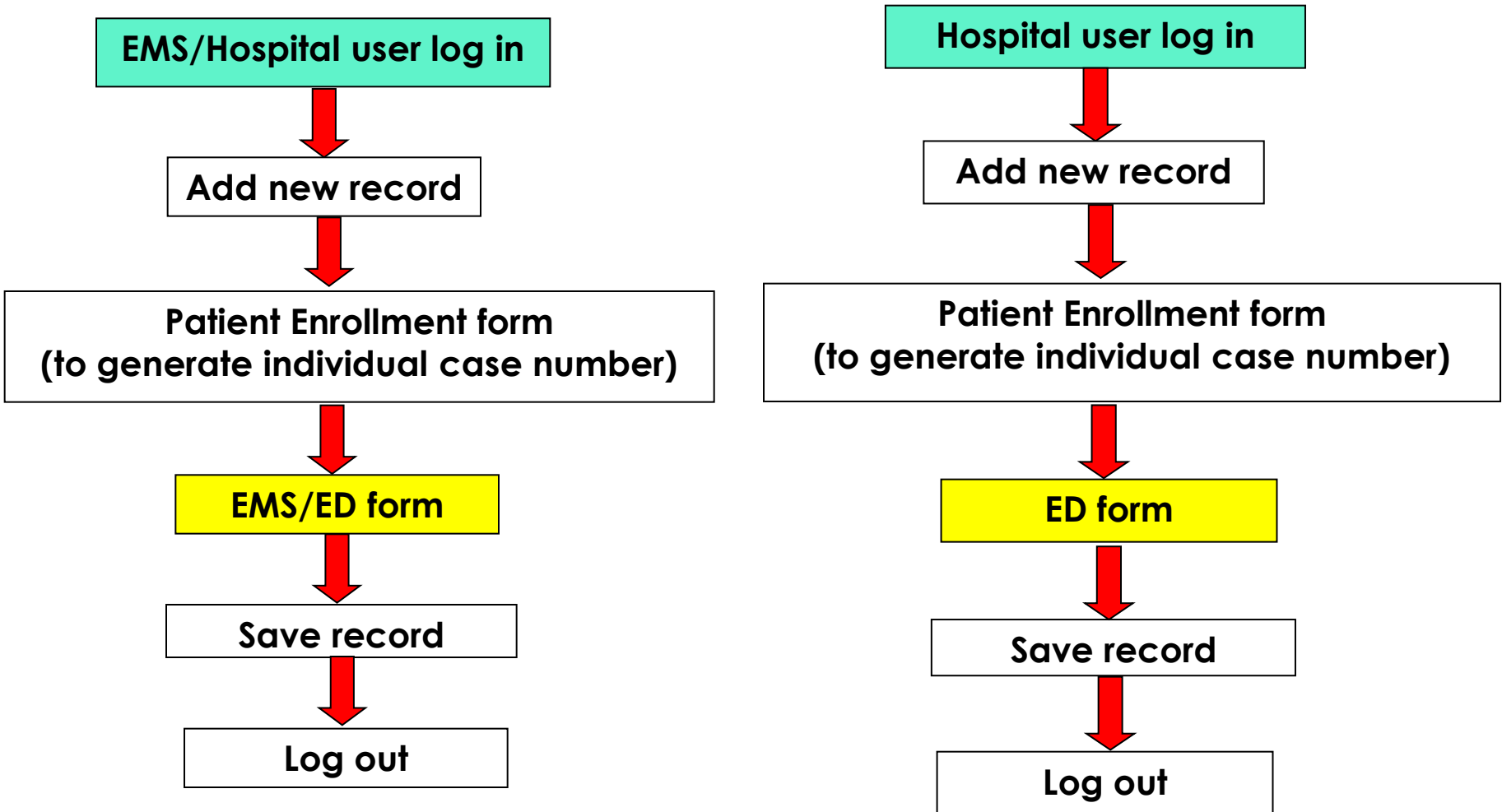
Data Flow – Non-EMS case



- Non-EMS case is defined as brought in to ED by private ambulance, own transport or public transport.
- For non-EMS cases, only hospital user log in is required.

EMS vs Non-EMS

The differences are highlighted.



Further Improvements

- ❖ To add in logics or validation rules to enhance the form and make it:
 - ➔ More user friendly
 - ➔ Logical flow
 - ➔ Reduce errors and double entry
- ❖ To include prompts or error message to prevent incorrect entry

Summary

- ❖ Give as complete and accurate information as you can at the time you are completing your PAROS report.
- ❖ Contact your country/PAROS coordinator if you have any questions regarding the PAROS data collection or project.
- ❖ Training session for country coordinators during ICEM 2010

THANK YOU