

# **RAIN**

Risk Adjustment In  
Neurocritical care

---

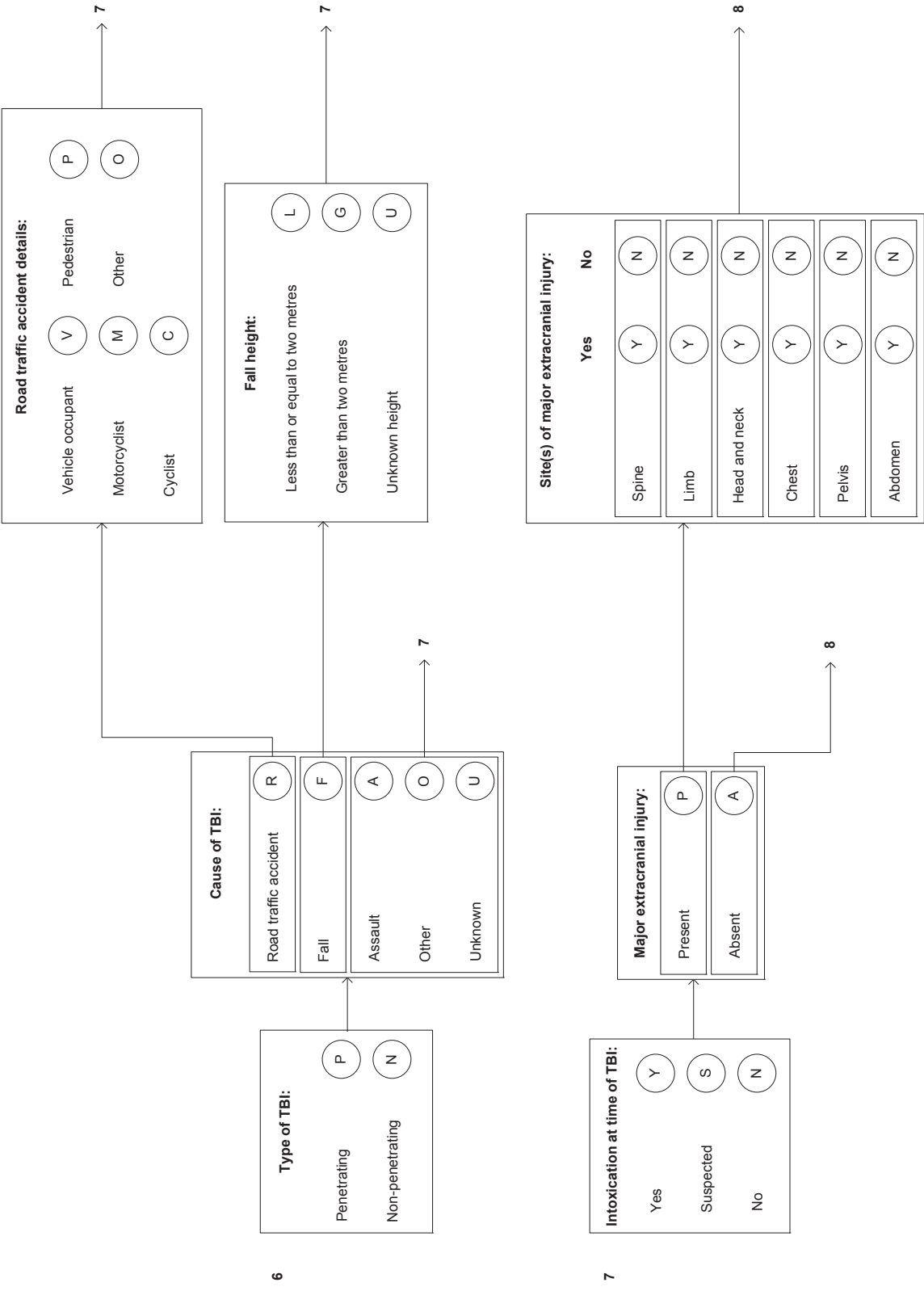
## **Data Collection Form** **(Version 1.4)**

Non-Case Mix Programme (Non-CMP) Units

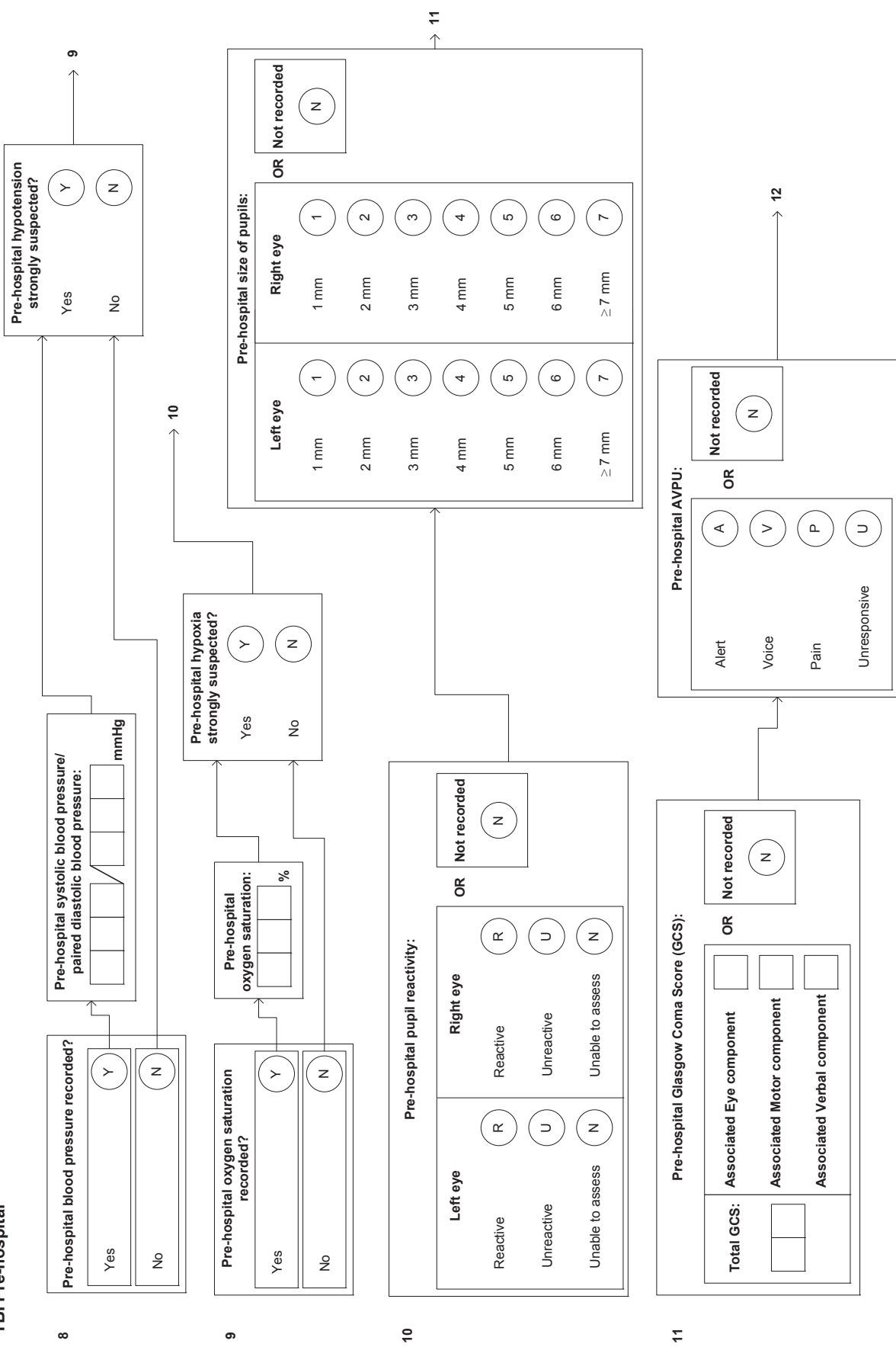
---



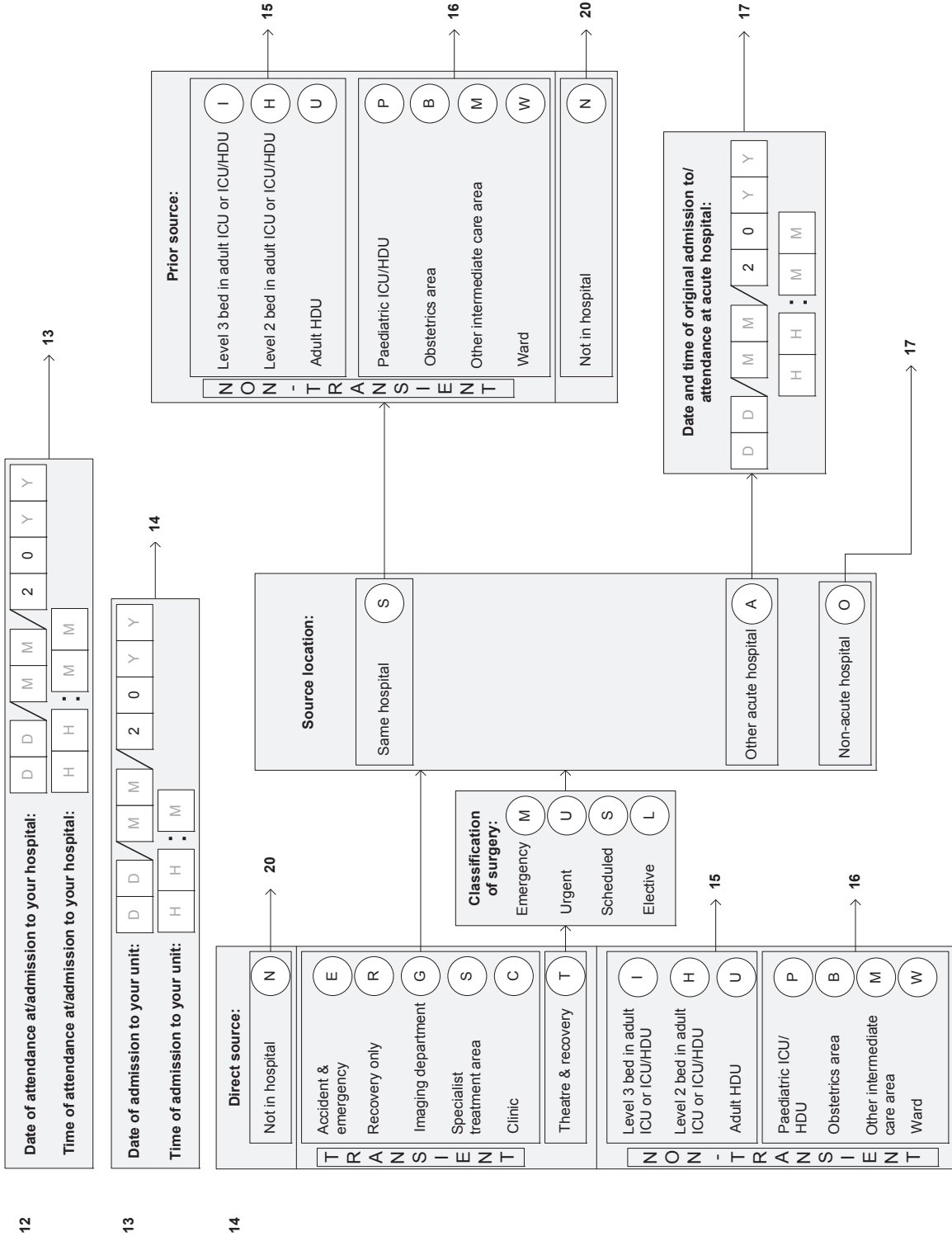
**TBI Pre-hospital**



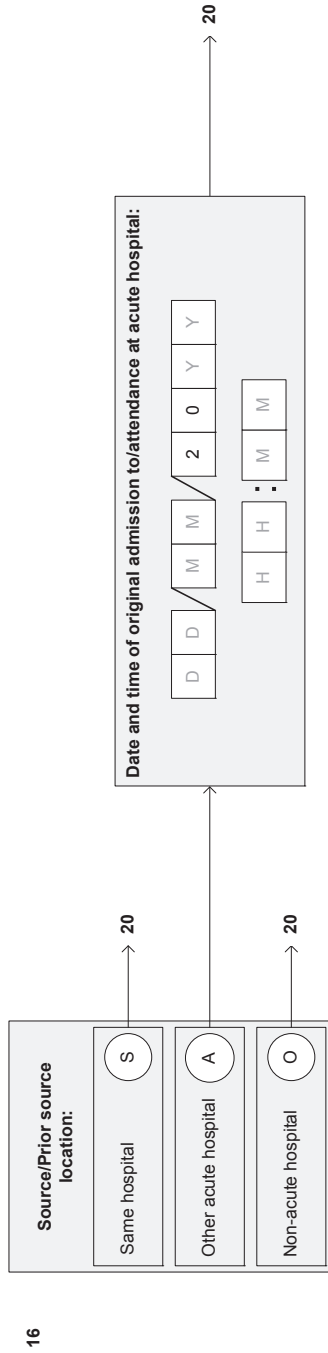
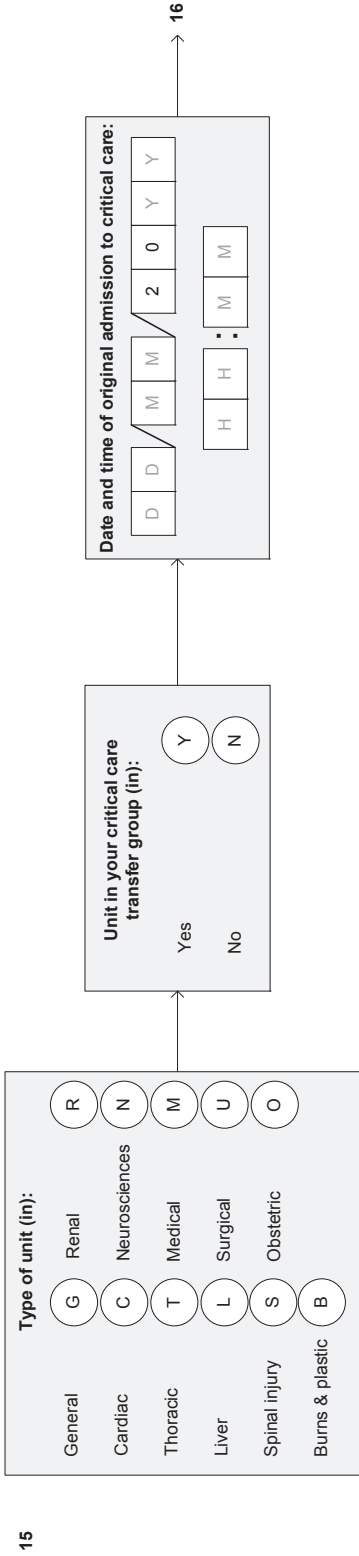
**TBI Pre-hospital**



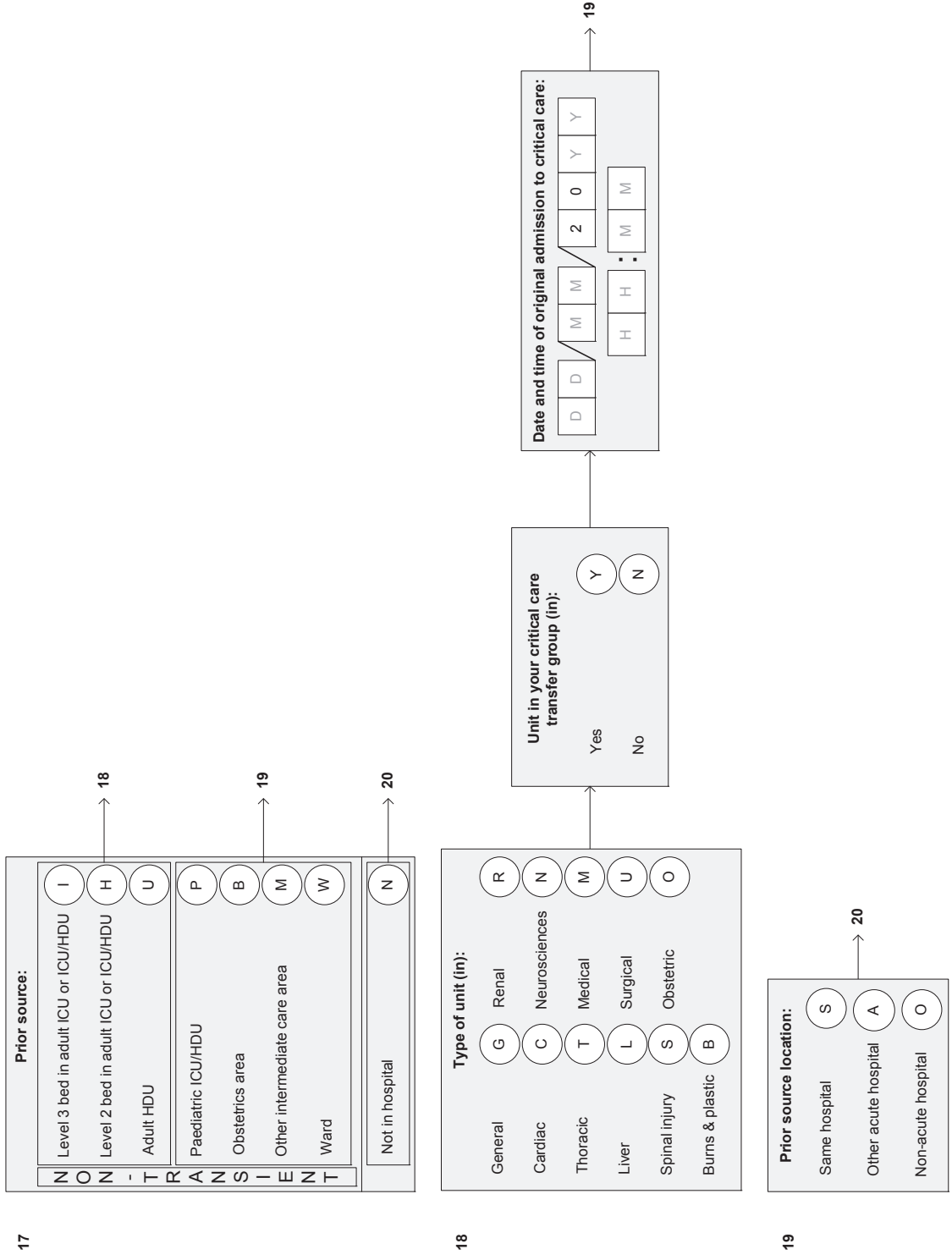
# Source



Source



**Source**



### TBI at hospital

20	First recorded at hospital temperature: <input type="text"/> <input type="text"/> . <input type="text"/> °C	Site: <input type="radio"/> Central (C) <input type="radio"/> Non-central (N)	21														
21	First recorded at hospital blood pressure: <input type="text"/> <input type="text"/> <input type="text"/> / <input type="text"/> <input type="text"/> mmHg		22														
22	First recorded at hospital heart rate: <input type="text"/> <input type="text"/> bpm		23														
23	First recorded at hospital oxygen saturation: <input type="text"/> <input type="text"/> %		24														
24	First recorded at hospital arterial blood gas: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">PaO<sub>2</sub> <input type="text"/> <input type="text"/> . <input type="text"/> kPa</td> <td style="width: 25%;">AND</td> <td style="width: 25%;">PaCO<sub>2</sub> <input type="text"/> <input type="text"/> . <input type="text"/> kPa</td> <td style="width: 25%;">AND</td> <td style="width: 25%;">pH/H<sup>+</sup> <input type="text"/> <input type="text"/> . <input type="text"/> pH</td> </tr> <tr> <td>OR</td> <td></td> <td>OR</td> <td></td> <td>OR</td> </tr> <tr> <td><input type="text"/> <input type="text"/> . <input type="text"/> mmHg</td> <td></td> <td><input type="text"/> <input type="text"/> . <input type="text"/> mmHg</td> <td></td> <td><input type="text"/> <input type="text"/> . <input type="text"/> mmol l<sup>-1</sup></td> </tr> </table>	PaO <sub>2</sub> <input type="text"/> <input type="text"/> . <input type="text"/> kPa	AND	PaCO <sub>2</sub> <input type="text"/> <input type="text"/> . <input type="text"/> kPa	AND	pH/H <sup>+</sup> <input type="text"/> <input type="text"/> . <input type="text"/> pH	OR		OR		OR	<input type="text"/> <input type="text"/> . <input type="text"/> mmHg		<input type="text"/> <input type="text"/> . <input type="text"/> mmHg		<input type="text"/> <input type="text"/> . <input type="text"/> mmol l <sup>-1</sup>	25
PaO <sub>2</sub> <input type="text"/> <input type="text"/> . <input type="text"/> kPa	AND	PaCO <sub>2</sub> <input type="text"/> <input type="text"/> . <input type="text"/> kPa	AND	pH/H <sup>+</sup> <input type="text"/> <input type="text"/> . <input type="text"/> pH													
OR		OR		OR													
<input type="text"/> <input type="text"/> . <input type="text"/> mmHg		<input type="text"/> <input type="text"/> . <input type="text"/> mmHg		<input type="text"/> <input type="text"/> . <input type="text"/> mmol l <sup>-1</sup>													
25	First recorded at hospital haemoglobin: <input type="text"/> <input type="text"/> . <input type="text"/> g dl <sup>-1</sup>	OR	Missing (M)	26													
26	First recorded at hospital platelet count: <input type="text"/> <input type="text"/> <input type="text"/> x 10 <sup>9</sup> l <sup>-1</sup>	OR	Missing (M)	27													
27	First recorded at hospital serum glucose: <input type="text"/> <input type="text"/> . <input type="text"/> mmol l <sup>-1</sup>	OR	Missing (M)	28													
28	First recorded at hospital prothrombin time (PT):	Ratio <input type="text"/> <input type="text"/> . <input type="text"/>	OR	Time <input type="text"/> <input type="text"/> s	AND	Control time <input type="text"/> <input type="text"/> s	OR	Missing (M)	29								
29	First recorded at hospital activated partial thromboplastin time (APTT):	Ratio <input type="text"/> <input type="text"/> . <input type="text"/>	OR	Time <input type="text"/> <input type="text"/> s	AND	Control time <input type="text"/> <input type="text"/> s	OR	Missing (M)	30								



**TBI at hospital**

**30**

First recorded at hospital pupil reactivity:

Left eye		Right eye	
Reactive	<input type="radio"/> R	Reactive	<input type="radio"/> R
Unreactive	<input type="radio"/> U	Unreactive	<input type="radio"/> U
Unable to assess	<input type="radio"/> N	Unable to assess	<input type="radio"/> N

OR

Not recorded  N

First recorded at hospital size of pupils:

Left eye		Right eye	
1 mm	<input type="radio"/> 1	1 mm	<input type="radio"/> 1
2 mm	<input type="radio"/> 2	2 mm	<input type="radio"/> 2
3 mm	<input type="radio"/> 3	3 mm	<input type="radio"/> 3
4 mm	<input type="radio"/> 4	4 mm	<input type="radio"/> 4
5 mm	<input type="radio"/> 5	5 mm	<input type="radio"/> 5
6 mm	<input type="radio"/> 6	6 mm	<input type="radio"/> 6
≥ 7 mm	<input type="radio"/> 7	≥ 7 mm	<input type="radio"/> 7

OR

Not recorded  N

→ 31

**31**

First recorded at hospital Glasgow Coma Score:

Total Glasgow Coma Score	<input type="text"/>	<input type="text"/>
Associated eye component	<input type="text"/>	<input type="text"/>
Associated motor component	<input type="text"/>	<input type="text"/>
Associated verbal component	<input type="text"/>	<input type="text"/>

OR

Not recorded  N

→ 33

Was this the last pre-sedation Glasgow Coma Score?

Yes  Y

No  N

→ 33

→ 32

**TBI at hospital**

32

Last pre-sedation Glasgow Coma Score:		
Total Glasgow Coma Score	Associated eye component	
	Associated motor component	
	Associated verbal component	

Pre-sedation Glasgow Coma Score location:	
A&E	(E)
Ward	(W)
Critical care	(C)
Acute assessment unit	(A)
Not in hospital	(N)

→ 33

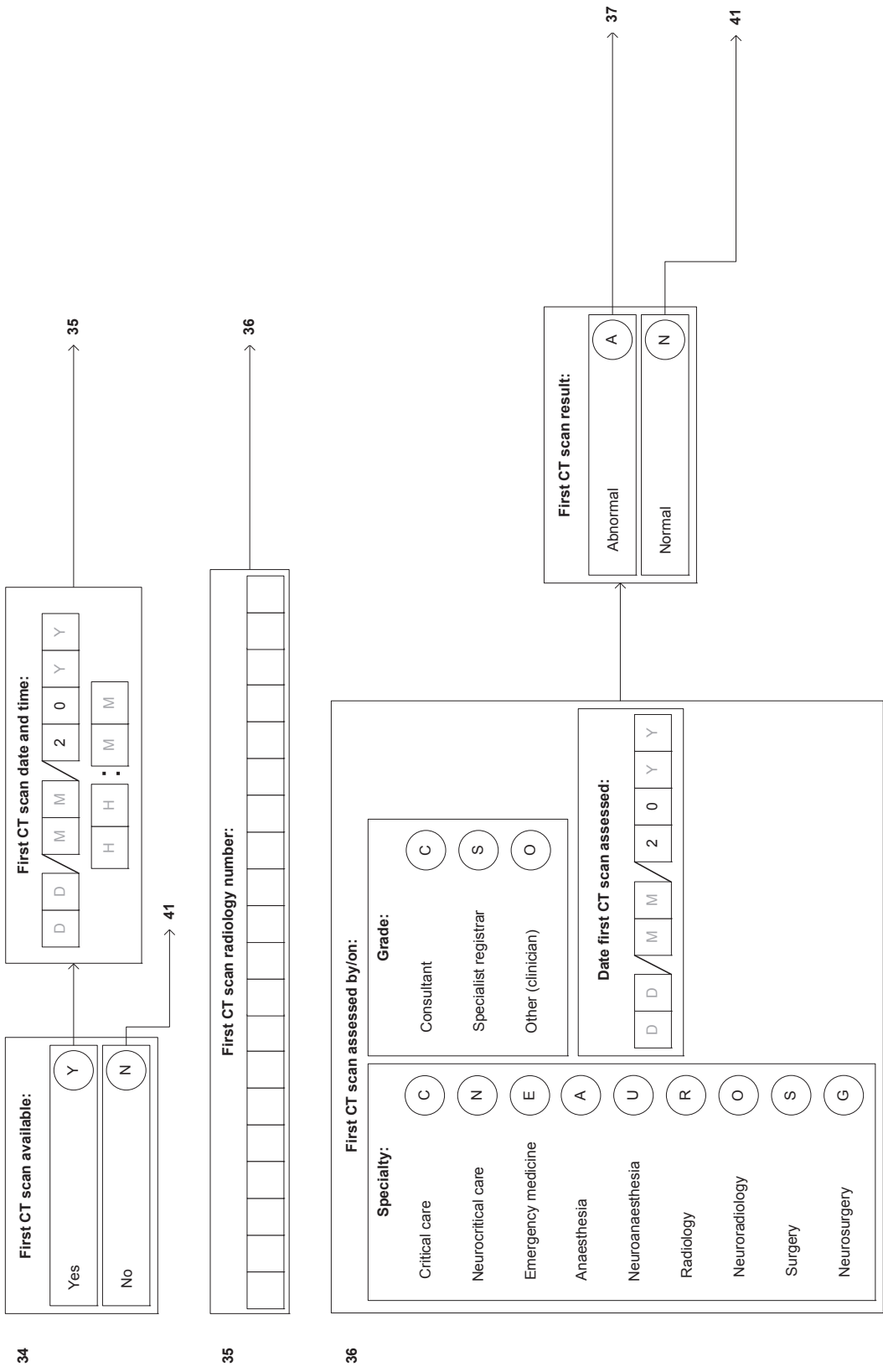
33

Pupil reactivity on admission to your unit:		
Left eye	Right eye	OR
Reactive (R)	Reactive (R)	Not recorded (N)
Unreactive (U)	Unreactive (U)	
Unable to assess (N)	Unable to assess (N)	

Size of pupils on admission to your unit:		
Left eye	Right eye	OR
1 mm (1)	1 mm (1)	Not recorded (N)
2 mm (2)	2 mm (2)	
3 mm (3)	3 mm (3)	
4 mm (4)	4 mm (4)	
5 mm (5)	5 mm (5)	
6 mm (6)	6 mm (6)	
≥ 7 mm (7)	≥ 7 mm (7)	

→ 34

# First CT



## First CT (findings)

37

**Traumatic subarachnoid haemorrhage present:**  Y  N

**Brainstem pathology present:**  Y  N

**Basal cisterns:**  A  C  P

**Third ventricle:**  O  P

38

**Midline shift present:**  Y  N

Yes – greater than 5 mm  
No – less than or equal to 5 mm

**Lesion(s) present:**  Y  N

**One or more small petechial haemorrhage(s) ≤ 1 ml present:**  Y  N

**High/mixed density lesion(s) > 1 ml present:**  Y  N

39

**Type of high/mixed density lesion(s) present:** Yes No

Extradural haematoma(s) present	<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N
Subdural haematoma(s) present	<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N
Intracerebral haematoma(s), haemorrhage(s) or contusion(s) present	<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N
Posterior fossa haematoma(s) present	<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N

**Main mass lesion:**  E  S  I  P

40

**Evacuation of haematoma:**  Y  N

**Date and time of evacuation of haematoma:**

D	D	M	M	2	0	Y	Y
H	H	M	M	:	M	M	

**Volume of largest high/mixed density lesion:**  G  L

Greater than 25 ml  
Less than or equal to 25 ml

41

**Outcome**

41

Calendar days of organ support while in your unit:	
Number of Basic respiratory support days:	<input type="text"/>
Number of Advanced respiratory support days:	<input type="text"/>
Number of Basic cardiovascular support days:	<input type="text"/>
Number of Advanced cardiovascular support days:	<input type="text"/>
Number of Renal support days:	<input type="text"/>
Number of Neurological support days:	<input type="text"/>
Number of Gastrointestinal support days:	<input type="text"/>
Number of Liver support days:	<input type="text"/>
Number of Dermatological support days:	<input type="text"/>

Levels of care:	
Number of Level 3 days:	<input type="text"/>
Number of Level 2 days:	<input type="text"/>
Number of Level 1 days:	<input type="text"/>
Number of Level 0 days:	<input type="text"/>

→ 42

42

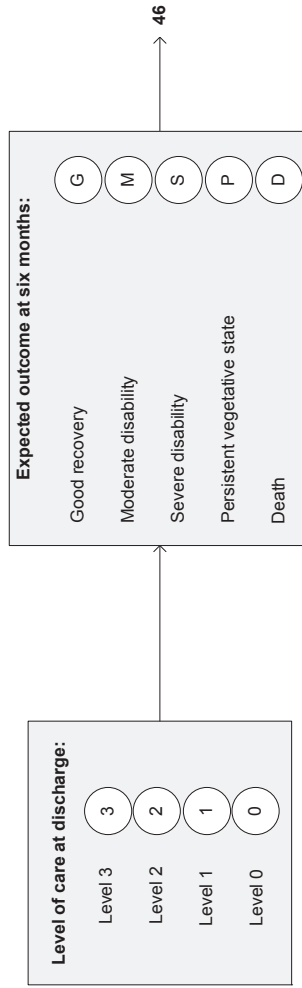
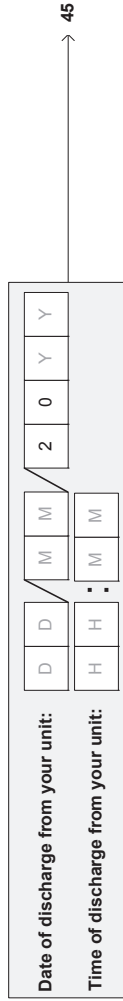
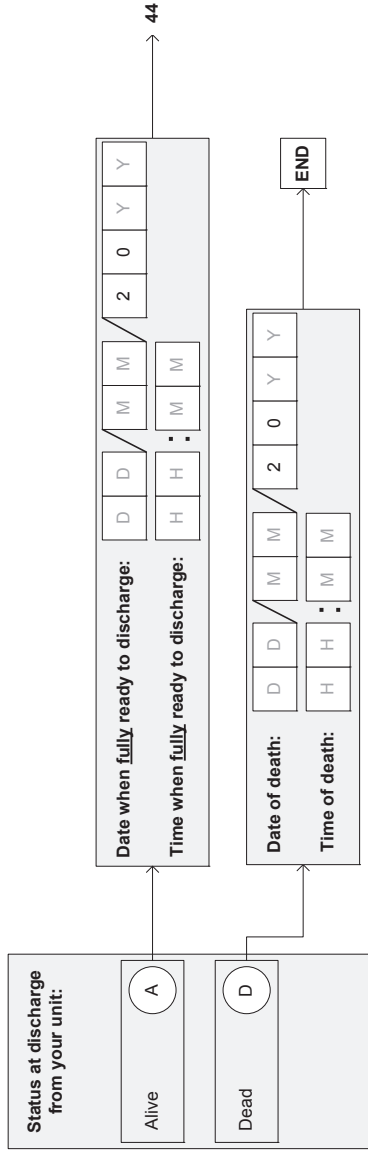
Diagnosis of TBI confirmed:	<input type="radio"/> Y	<input type="radio"/> N
Yes		
No		

Spinal cord injury present:	<input type="radio"/> Y	<input type="radio"/> N
Yes		
No		

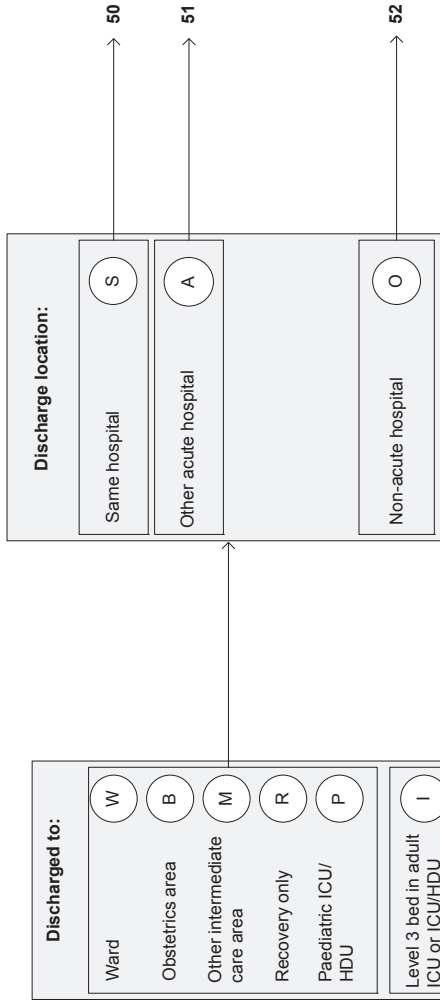
→ 43

# Outcome

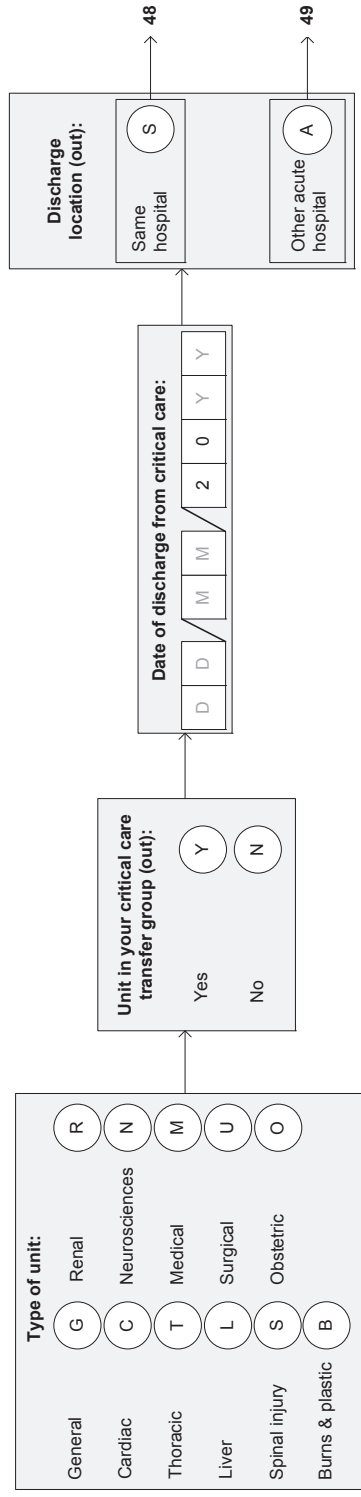


**Outcome**

46

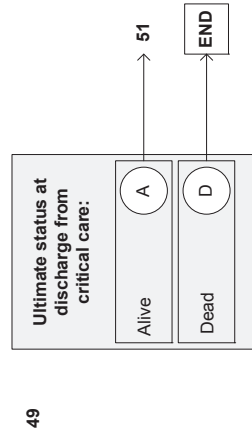
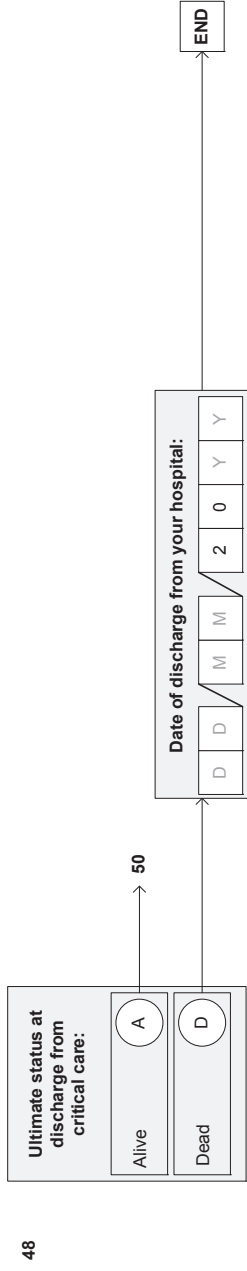


47



47

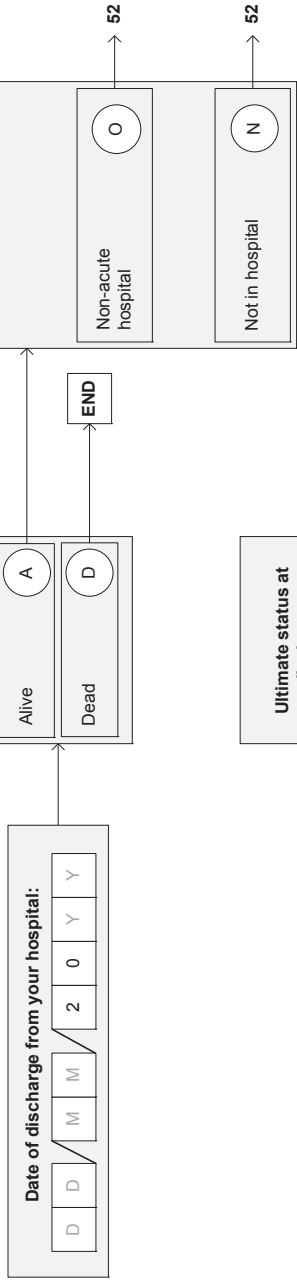
Outcome



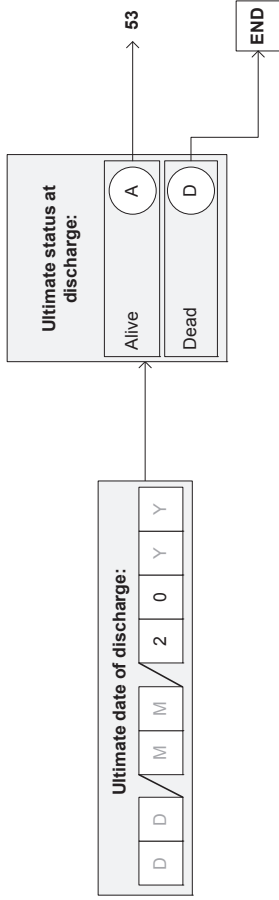


**Outcome**

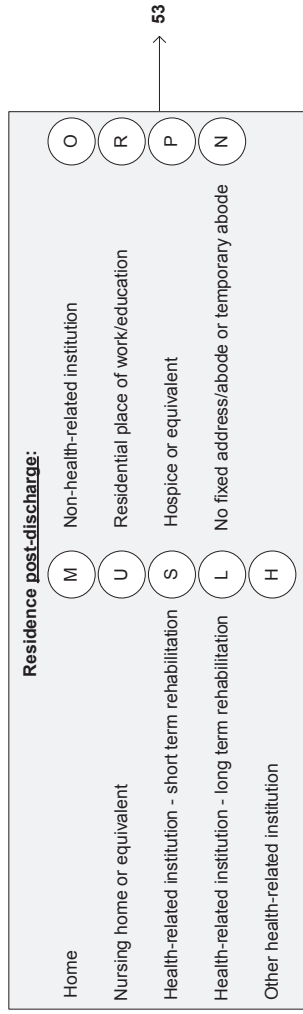
50



51



52





# RAIN

Risk Adjustment In  
Neurocritical care

---

## Flows

---

### Version 1.4

Non Case Mix Programme (Non-CMP) Units

© 2010

Intensive Care National Audit & Research Centre

All rights reserved

ICNARC disclaims any proprietary interest in any trademarks or tradenames other than its own

---

## Flows

---

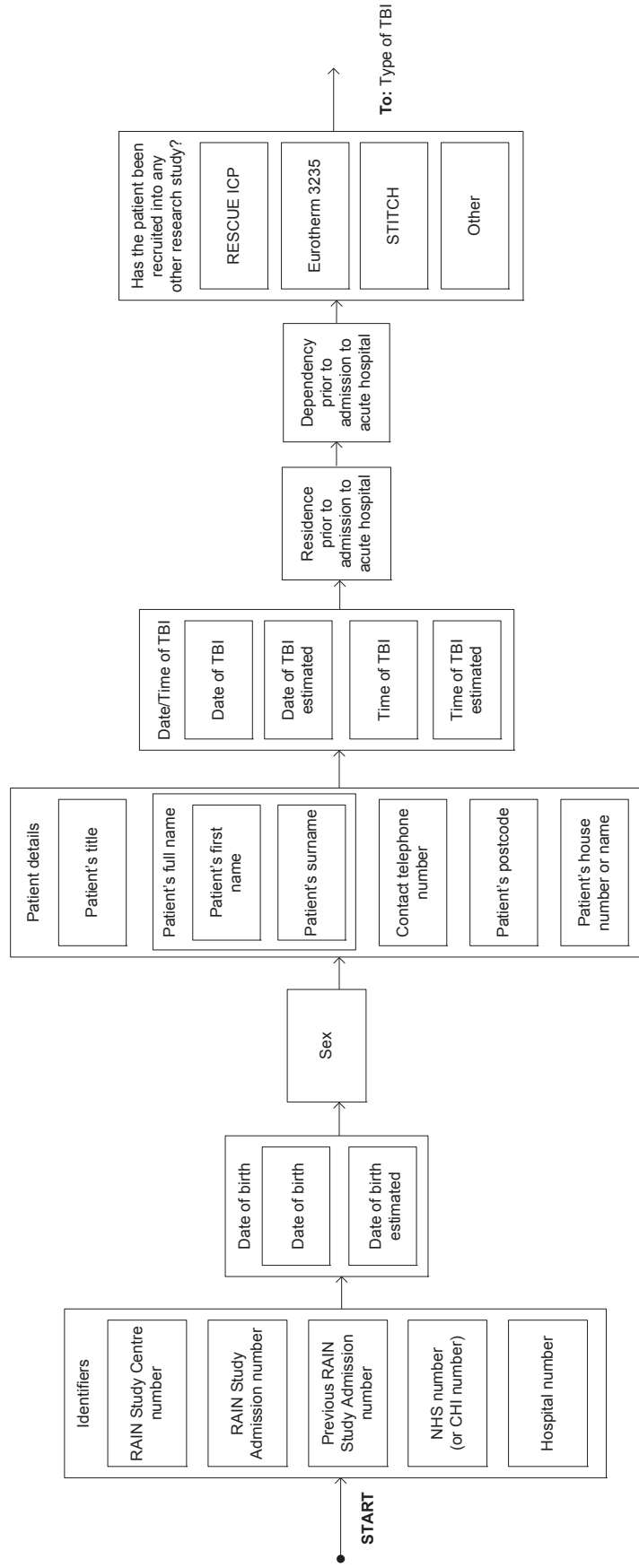
### Order

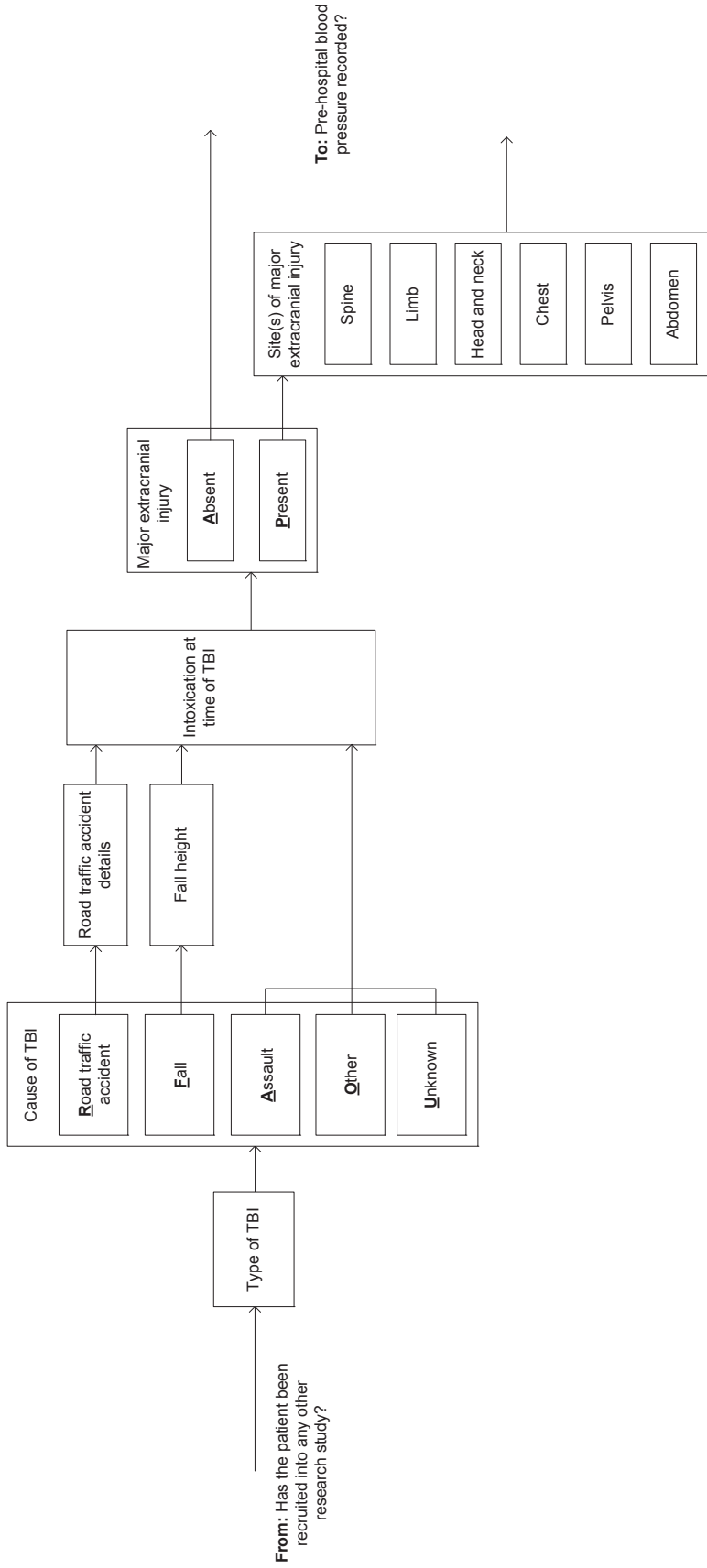
- the RAIN Dataset Specification (RAINDS) Version 1.4 contains the following sections, which appear in this order in the flows:
  - Patient
  - TBI pre-hospital
  - Source
  - TBI at hospital
  - CT
  - Outcome
  - GP

### Display

- flows run from left to right displaying the field
  - sections are indicated in the header of each page
-

**RAINDS, NON-CMP V1.4: Patient**





**From:** Has the patient been recruited into any other research study?

**Cause of TBI**

Road traffic accident

Fall

Assault

Other

Unknown

**Road traffic accident details**

**Fall height**

**Intoxication at time of TBI**

**Major extracranial injury**

Absent

Present

**Site(s) of major extracranial injury**

Spine

Limb

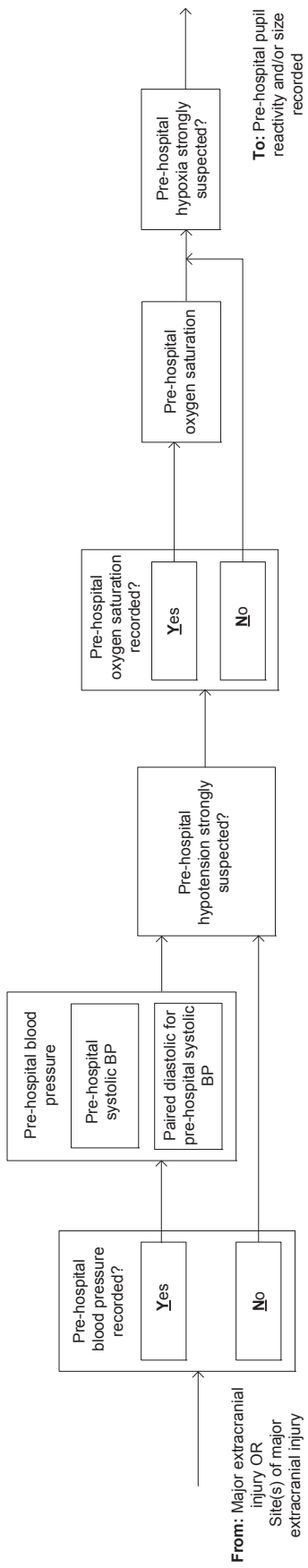
Head and neck

Chest

Pelvis

Abdomen

**To:** Pre-hospital blood pressure recorded?



**From:** Major extracranial injury OR Site(s) of major extracranial injury

Pre-hospital blood pressure recorded?  
 Yes  
 No

Pre-hospital blood pressure  
 Pre-hospital systolic BP  
 Paired diastolic for pre-hospital systolic BP

Pre-hospital hypotension strongly suspected?

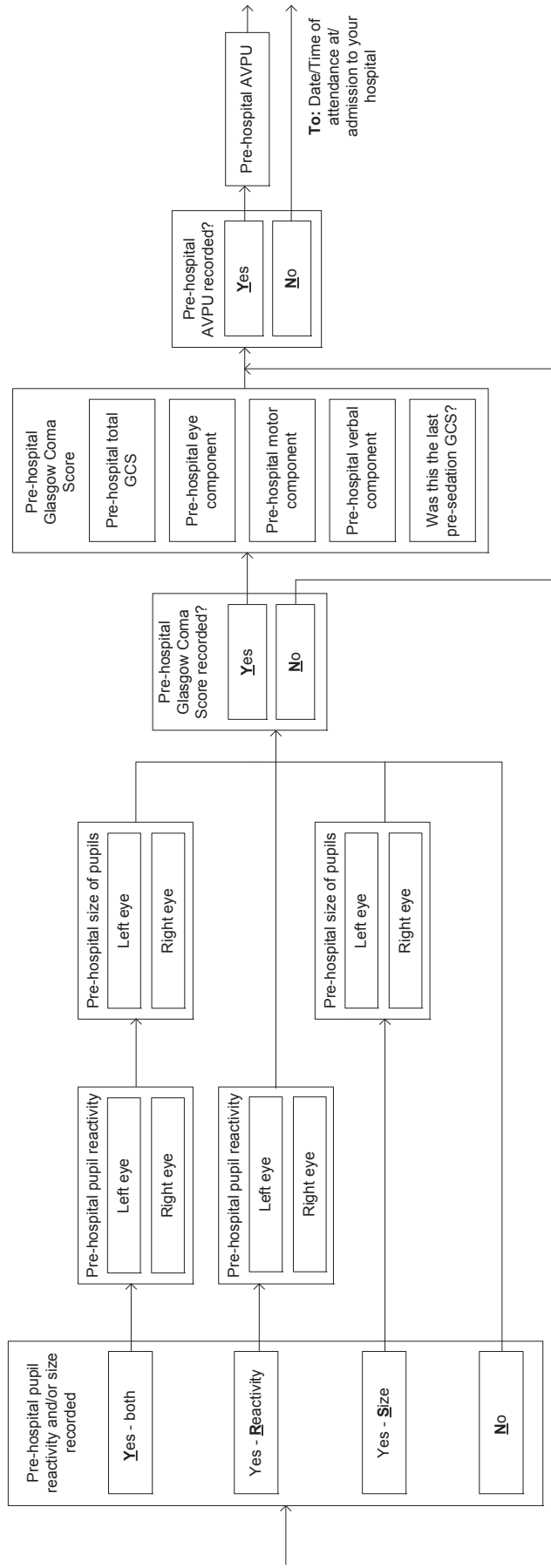
Pre-hospital oxygen saturation recorded?  
 Yes  
 No

Pre-hospital oxygen saturation

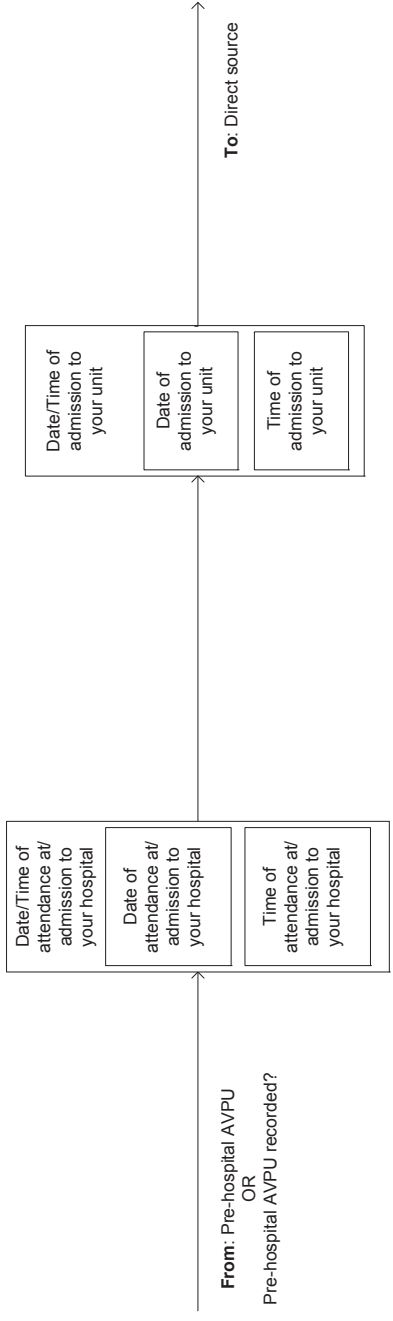
Pre-hospital hypoxia strongly suspected?

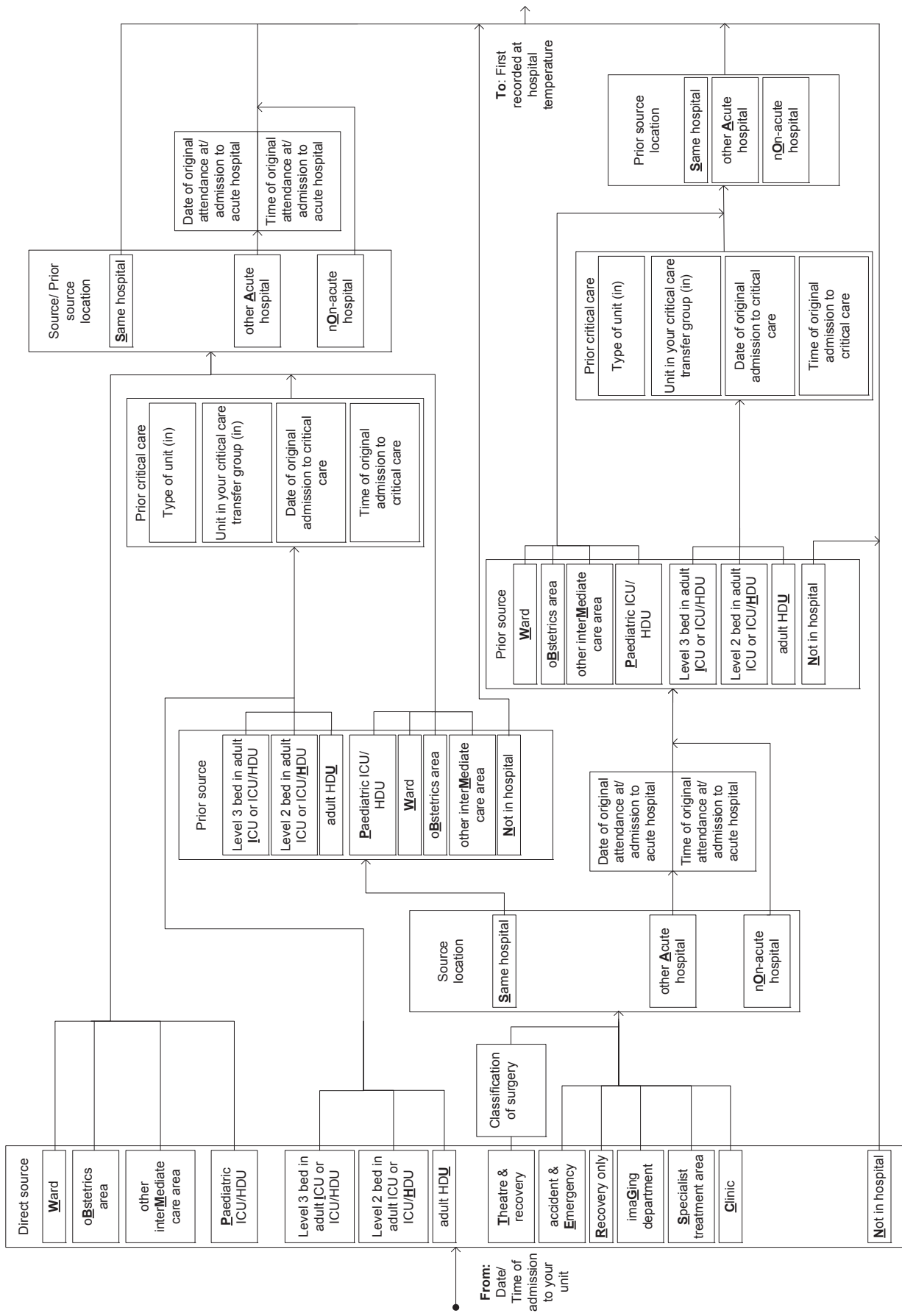
**To:** Pre-hospital pupil reactivity and/or size recorded

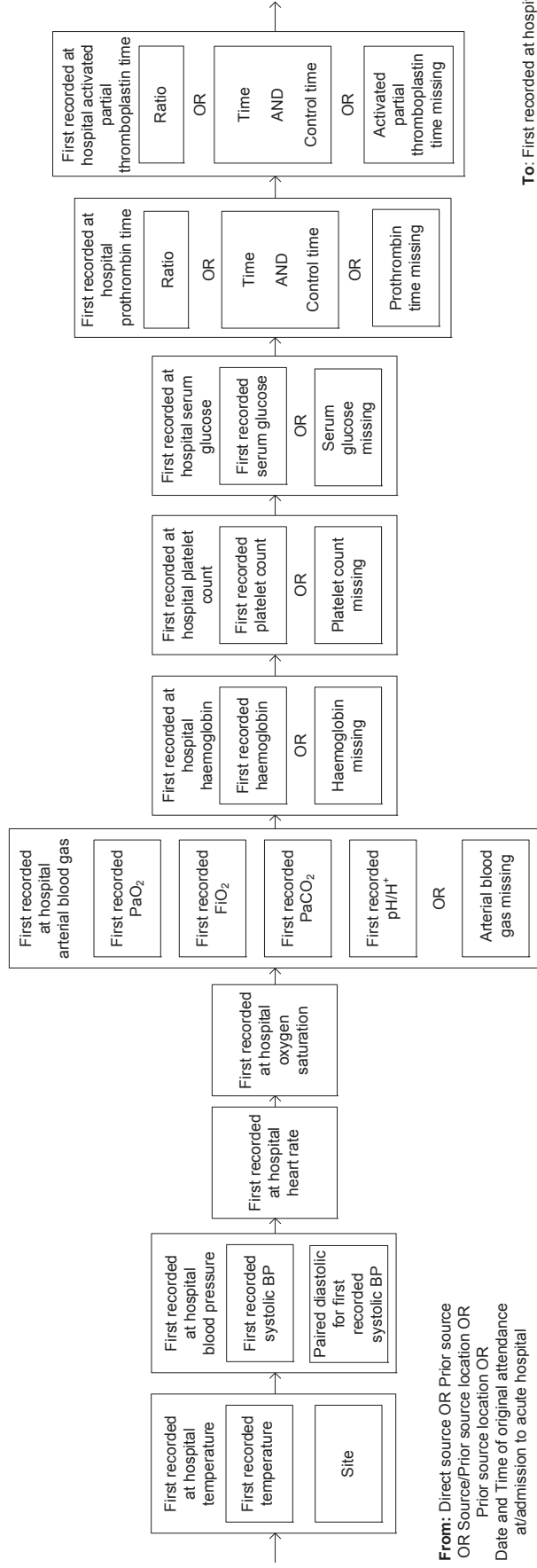




**From:** Pre-hospital hypoxia strongly suspected?

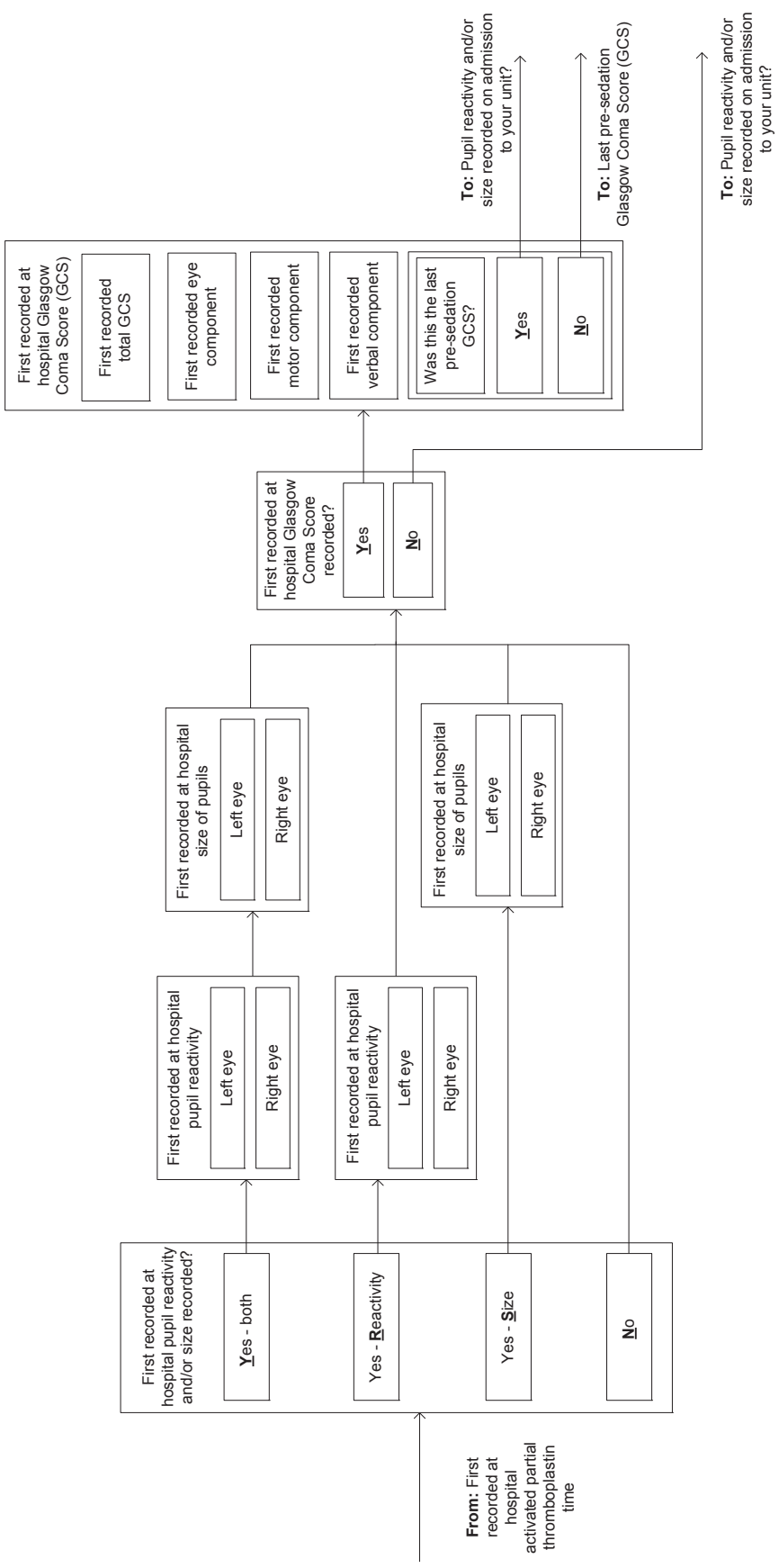






**From:** Direct source OR Prior source  
 OR Source/Prior source location OR  
 Prior source location OR  
 Date and Time of original attendance  
 at/admission to acute hospital

**To:** First recorded at hospital  
 pupil reactivity and/or size  
 recorded?



First recorded at hospital Glasgow Coma Score (GCS)

First recorded total GCS

First recorded eye component

First recorded motor component

First recorded verbal component

Was this the last pre-sedation GCS?

Yes

No

To: Pupil reactivity and/or size recorded on admission to your unit?

To: Last pre-sedation Glasgow Coma Score (GCS)

First recorded at hospital Glasgow Coma Score recorded?

Yes

No

First recorded at hospital size of pupils

Left eye

Right eye

First recorded at hospital size of pupils

Left eye

Right eye

First recorded at hospital pupil reactivity

Left eye

Right eye

First recorded at hospital pupil reactivity

Left eye

Right eye

First recorded at hospital pupil reactivity and/or size recorded?

Yes - both

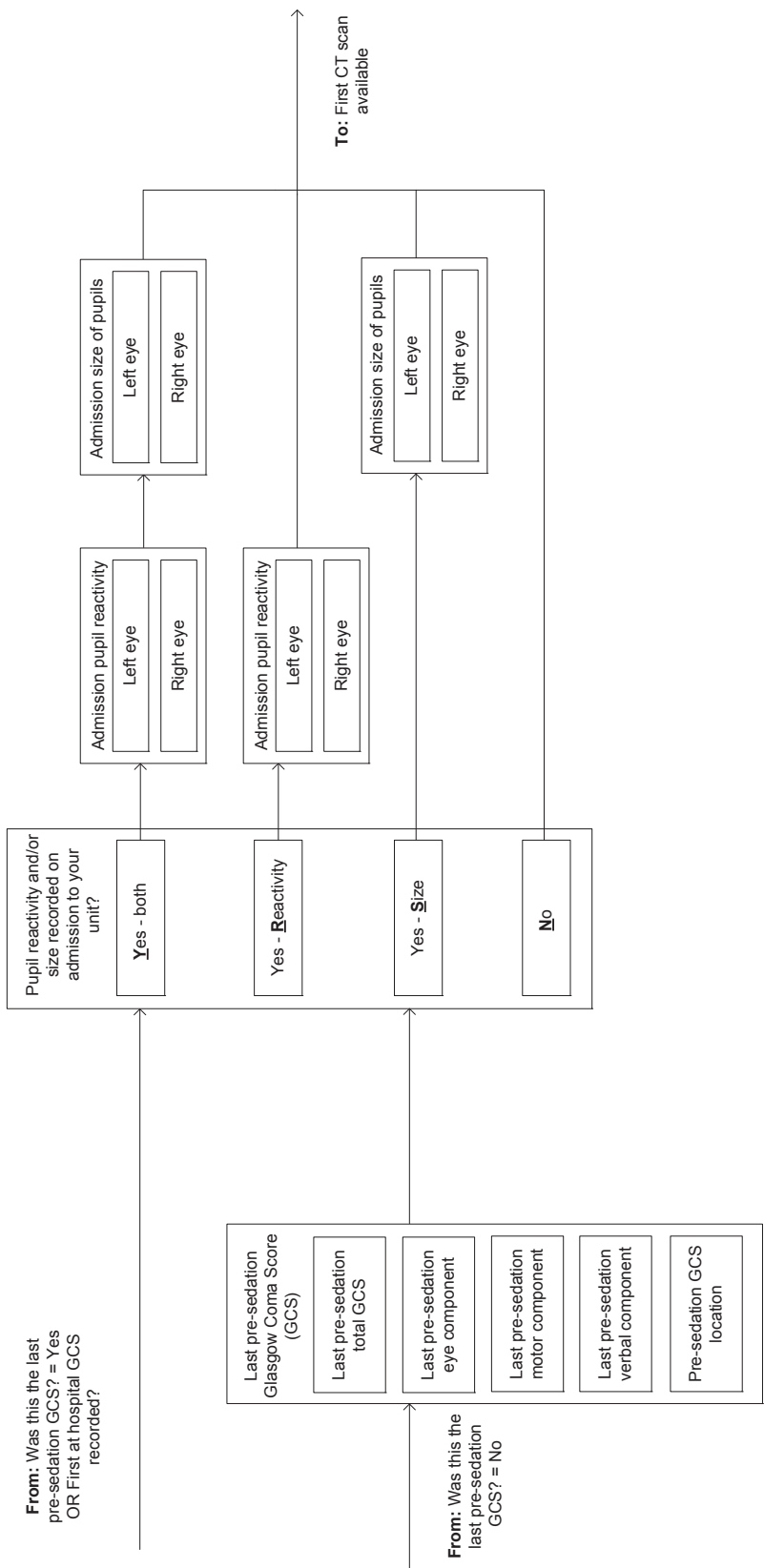
Yes - Reactivity

Yes - Size

No

From: First recorded at hospital activated partial thromboplastin time

To: Pupil reactivity and/or size recorded on admission to your unit?

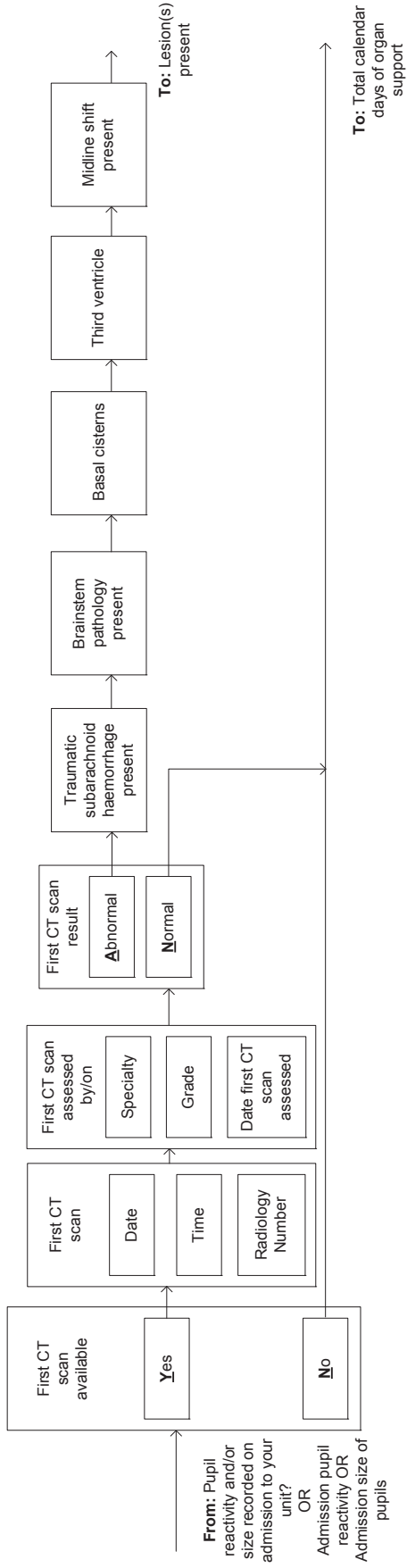


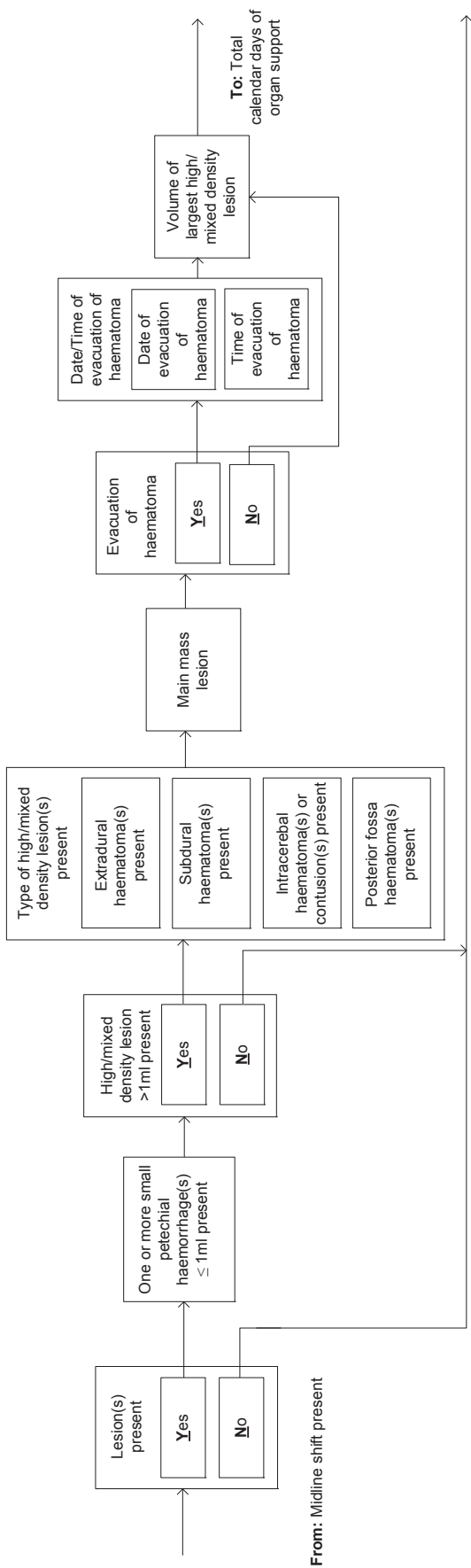
**From:** Was this the last pre-sedation GCS? = Yes OR First at hospital GCS recorded?

Last pre-sedation Glasgow Coma Score (GCS)
Last pre-sedation total GCS
Last pre-sedation eye component
Last pre-sedation motor component
Last pre-sedation verbal component
Pre-sedation GCS location

**From:** Was this the last pre-sedation GCS? = No

**To:** First CT scan available

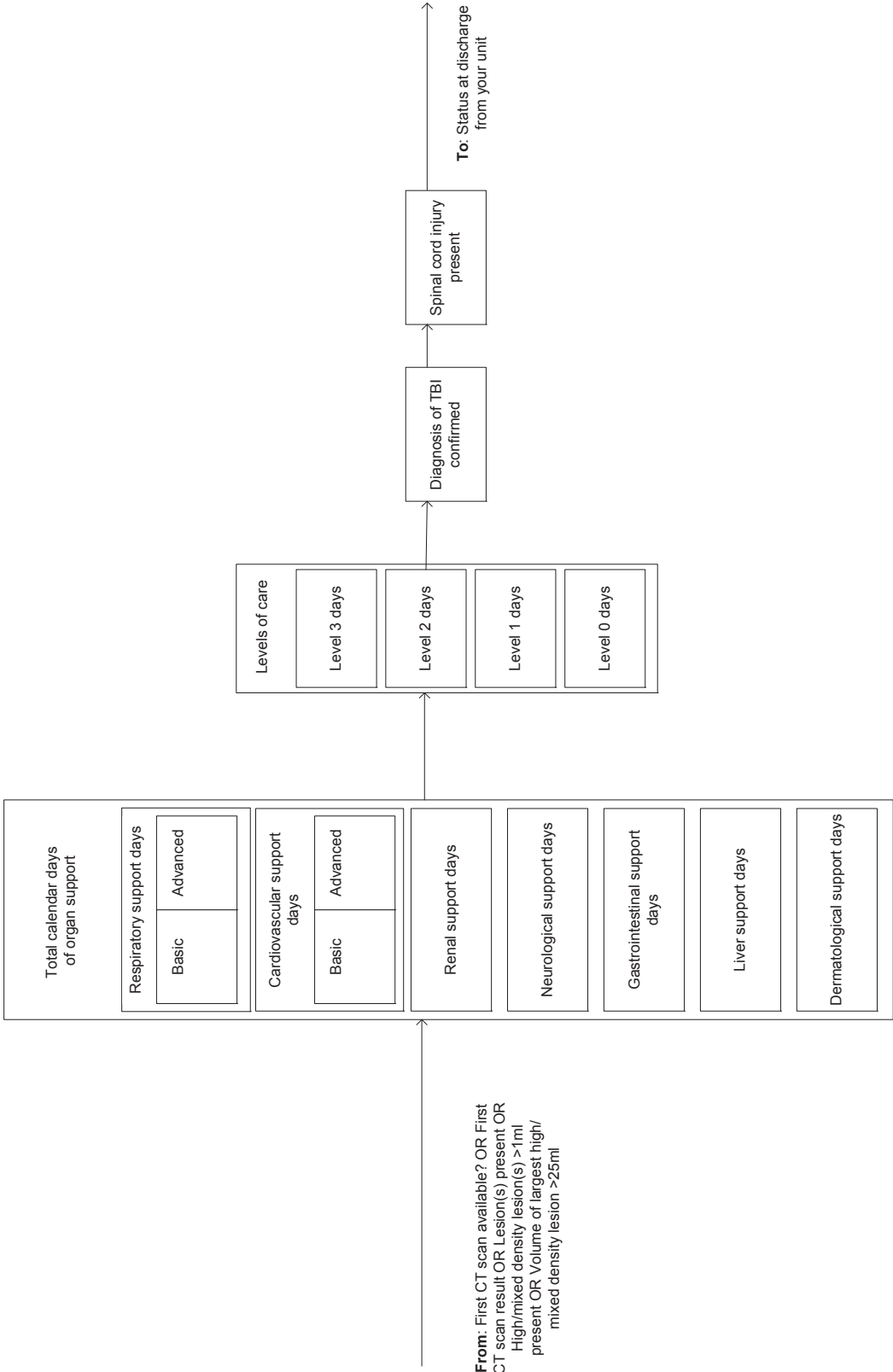


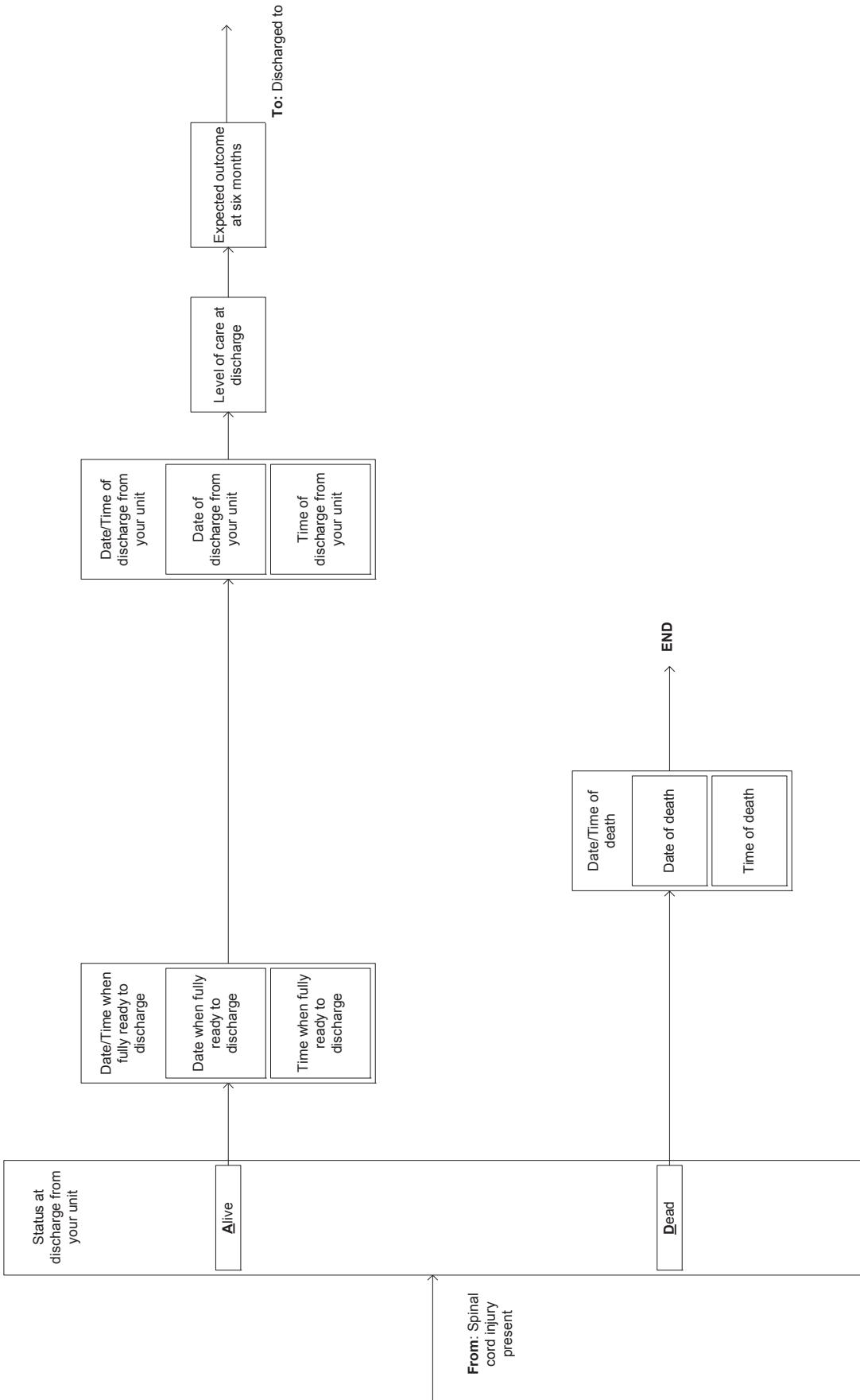


**To:** Total calendar days of organ support

**From:** Midline shift present







Status at discharge from your unit

Alive

Dead

Date/Time when fully ready to discharge

Date when fully ready to discharge

Time when fully ready to discharge

Date/Time of death

Date of death

Time of death

Date/Time of discharge from your unit

Date of discharge from your unit

Time of discharge from your unit

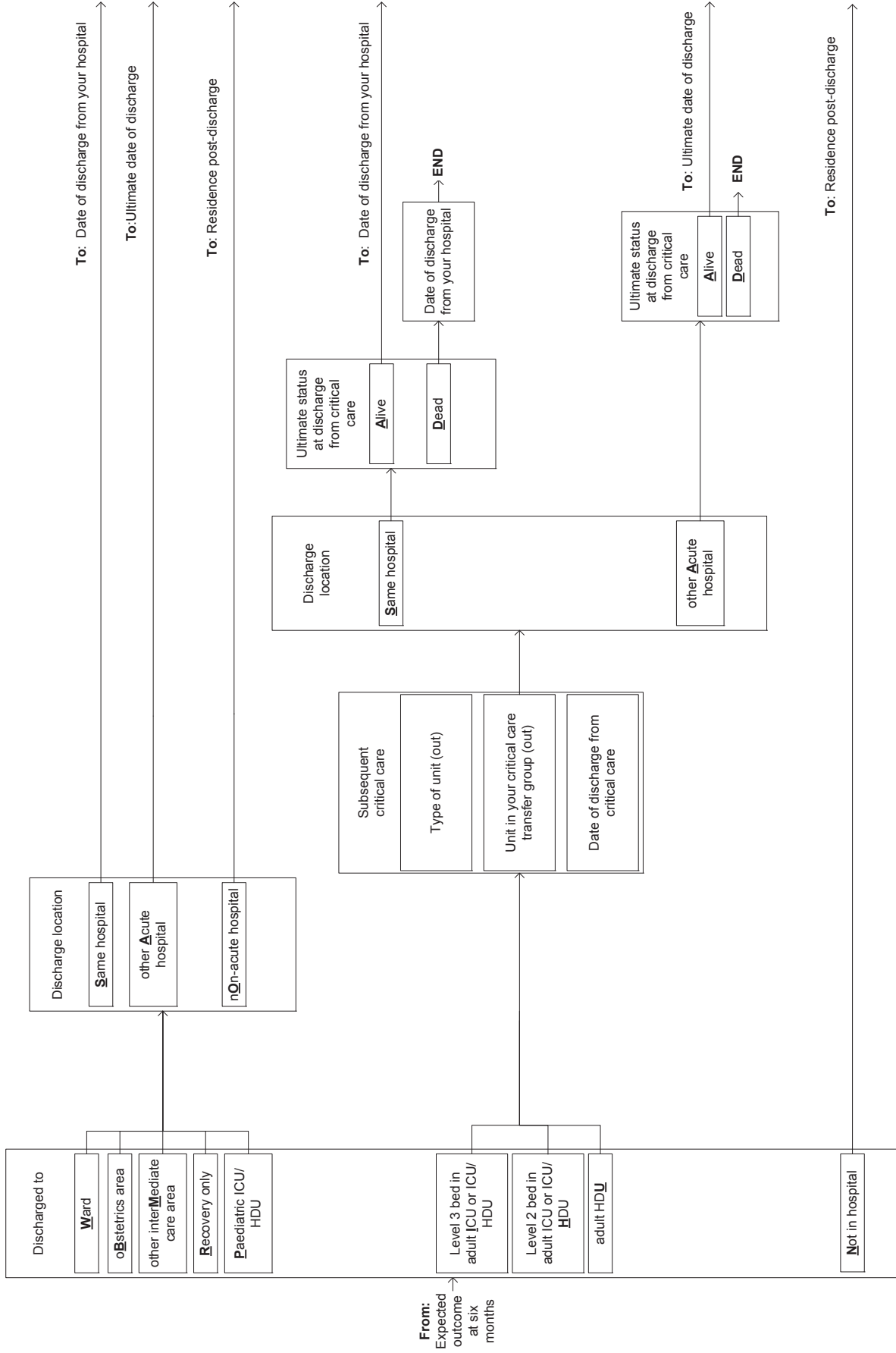
Level of care at discharge

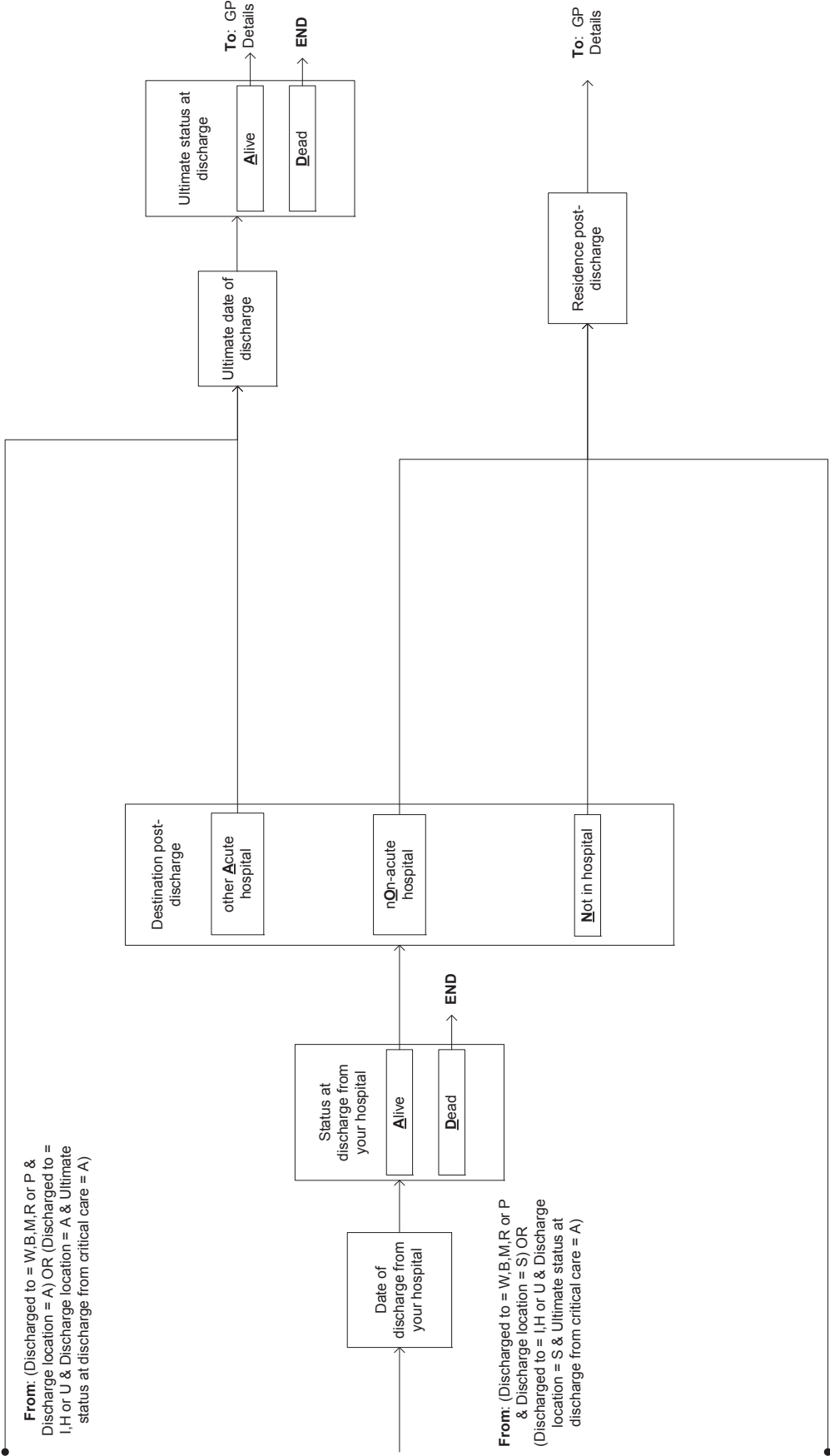
Expected outcome at six months

From: Spinal cord injury present

To: Discharged to

END





**From:** (Discharged to = W,B,M,R or P & Discharge location = A) OR (Discharged to = I,H or U & Discharge location = A & Ultimate status at discharge from critical care = A)

**From:** (Discharged to = W,B,M,R or P & Discharge location = S) OR (Discharged to = I,H or U & Discharge location = S & Ultimate status at discharge from critical care = A)

**From:** (Discharged to = W,B,M,R or P & Discharge location = O) OR (Discharged to = N)

