Spinal Cord Injury Referrals data at Royal Derby Spinal Centre: Sources, Trends, and Outcomes

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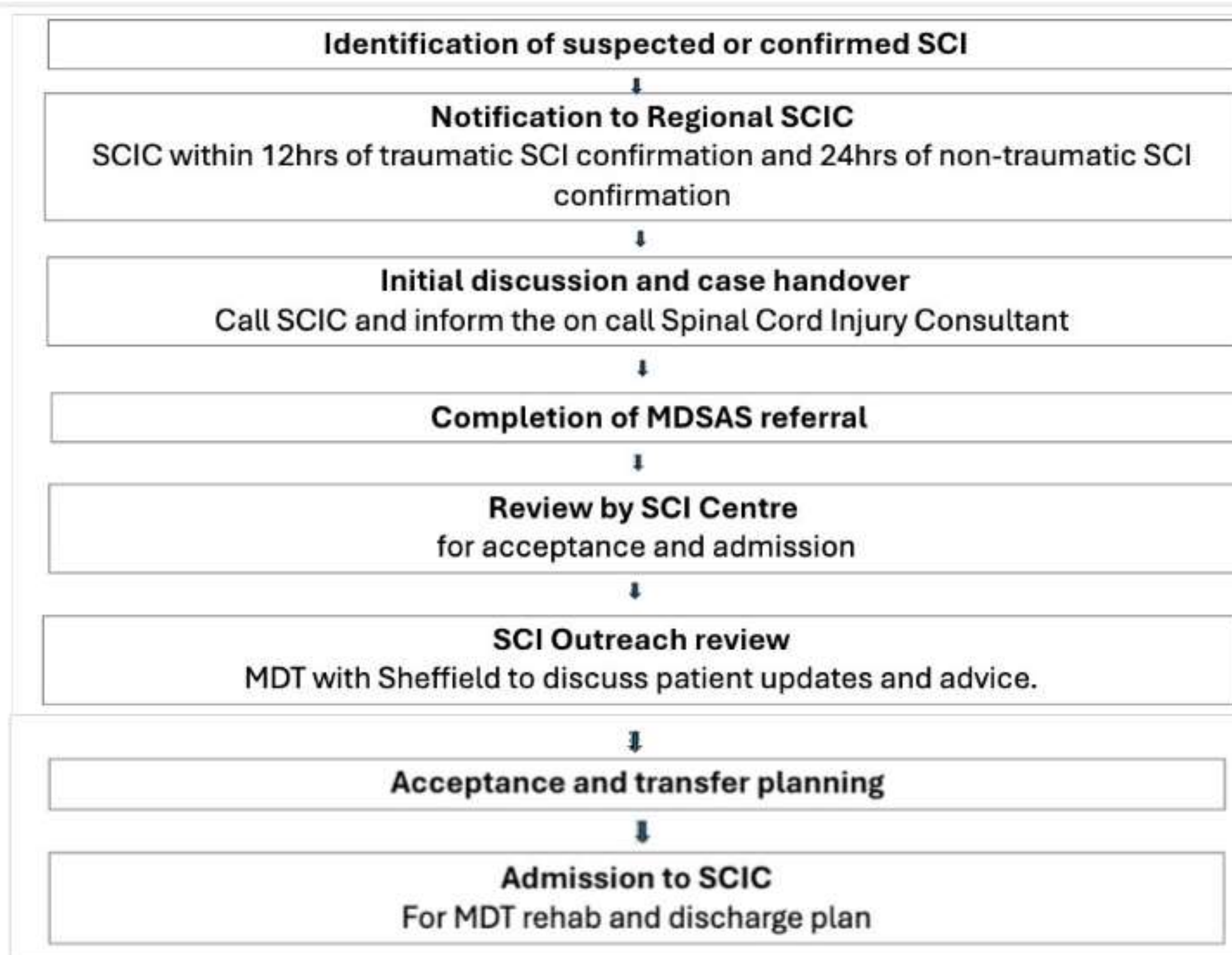
AIMS:

- Evaluate the timeliness, quality, and outcomes of SCI referrals
- Identify areas of system improvements

OBJECTIVES:

- Measure timeliness of SCI referrals
- Assess quality and completeness of referral documentation
- Identify missed or delayed recognition of SCI
- Evaluate patient outcomes and complications related to referral delays

SCI referral pathway:



Initial care management for patients with acute SCI

1. Prevent **secondary SCI** → proper alignment, immobilisation, bed rest.

2. Manage **Cardiovascular effects** of spinal shock & VTE prophylaxis.

3. Early enteral feeding and prevention of gastric ulcers.

4. Promote **chest drainage + ventilation/perfusion**.

5. Management of Bladder, bowel, skin and psychological wellbeing.

6. Prevent **pressure ulcers** and early **rehab**

7. Maintain **normothermia**.

- **According to the (NICE) guideline "Spinal injury: assessment and initial management"**
- For people who have a spinal cord injury, the specialist neurosurgical or spinal surgeon at the major trauma centre or trauma unit should contact the linked spinal consultant Surgeon at SCI centre **within 4 hours** of diagnosis to establish a partnership of care.
- **In service specifications for SCI services for all ages (via NHS England)**:
- Referral is made through the National Spinal Cord Injury Database **within 12 hours** of injury.
- **In more recent standards ("Standards for Specialist Rehabilitation of Spinal Cord Injury" 2022)**:
- All acute hospitals admitting someone with SCI should refer to the linked SCIC **within 24 hours** using the electronic referral system.

- **SCI definition:** Insult to spinal cord at any level → temporary or permanent loss/change in **motor, sensory, or autonomic** function.
- **Population:** Adults, young people, and children with **non-progressive SCI** (trauma, ischemia, inflammation, swelling) or C**auda equina** injury.
- **Types of SCI**:
  - **Traumatic** – from **physical trauma**.
  - **Non-traumatic** – from **disease or infection**

- **SCI services:** Provided by **8 Spinal Cord Injury Centres (SCICs)** in England.

Inclusion Criteria (NHS England):

- Confirmed spinal cord injury (traumatic or non-traumatic) under SCI consultant care
- SCI-related admissions or follow-ups.
- SCI dysfunction secondary to benign tumour after primary treatment

EXCLUSION CRITERIA:

- Spinal column injury with intact neurology
- Progressive neurological disease (non-SCI) like MS, MND, MSCC, Infections etc
- Non-SCI admissions (under non-SCI consultant)
- Patients with complex head injuries presenting with impaired cognition or background of dementia.

DATA COLLECTION:

A retrospective analysis of Derby SCI Database (**Jan 2024– Oct 2025**)

Variables: patient ID, location, Spine pathology type, ASIA/ISNCSCI documentation, Date of injury, surgery, referral date and outcome

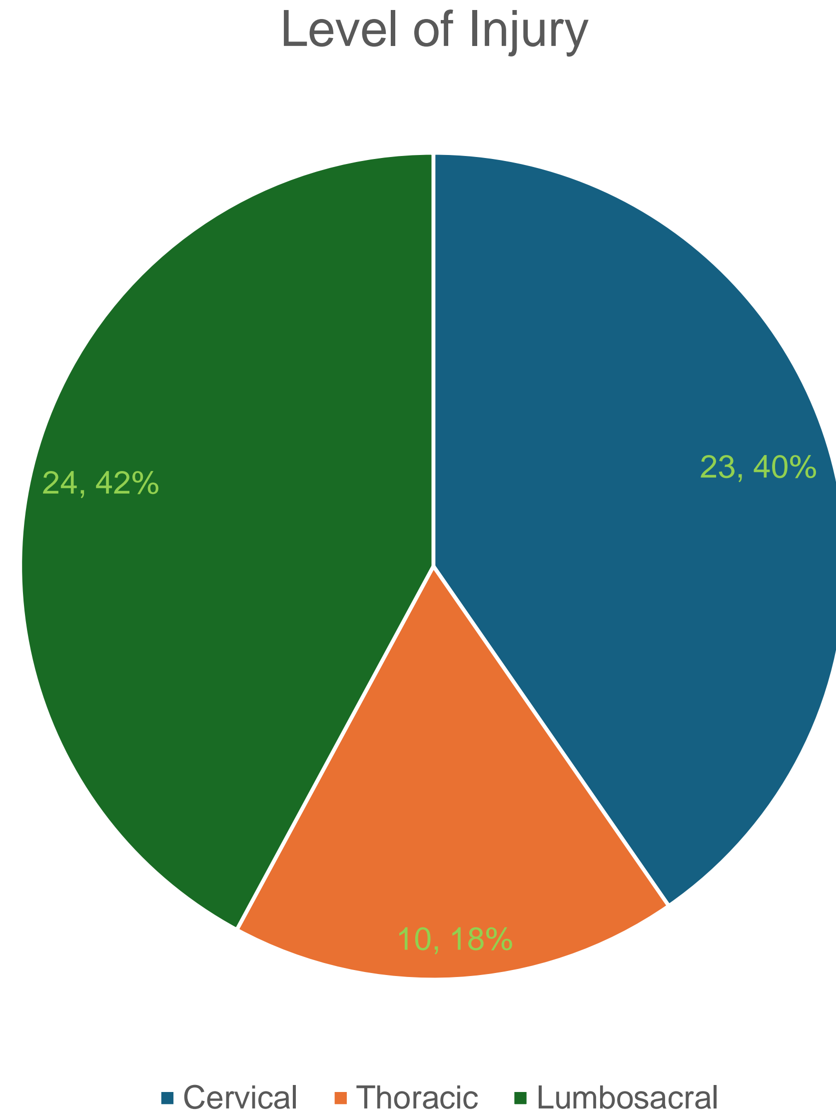
- Duration: **Jan 2024- Oct 2025.**

- Total number of SCI patients included in the data set: **57**

- **Traumatic SCI**: 11 patients **20%**
- **Non traumatic SCI**: 46 patients **80%**

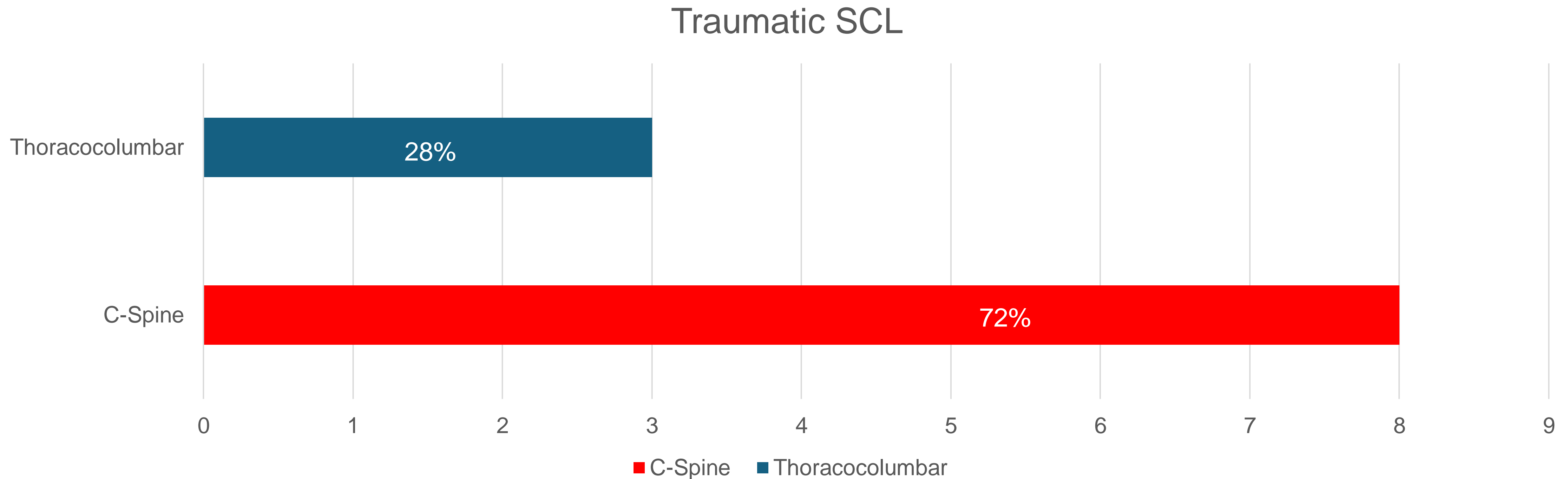
SCI based on the level:

- **Traumatic:**
  - Cervical : 8
  - Thoracic: 3
- **Non-Traumatic:**
  - Cervical: 15
  - Thoracic: 7
  - Lumbosacral: 24

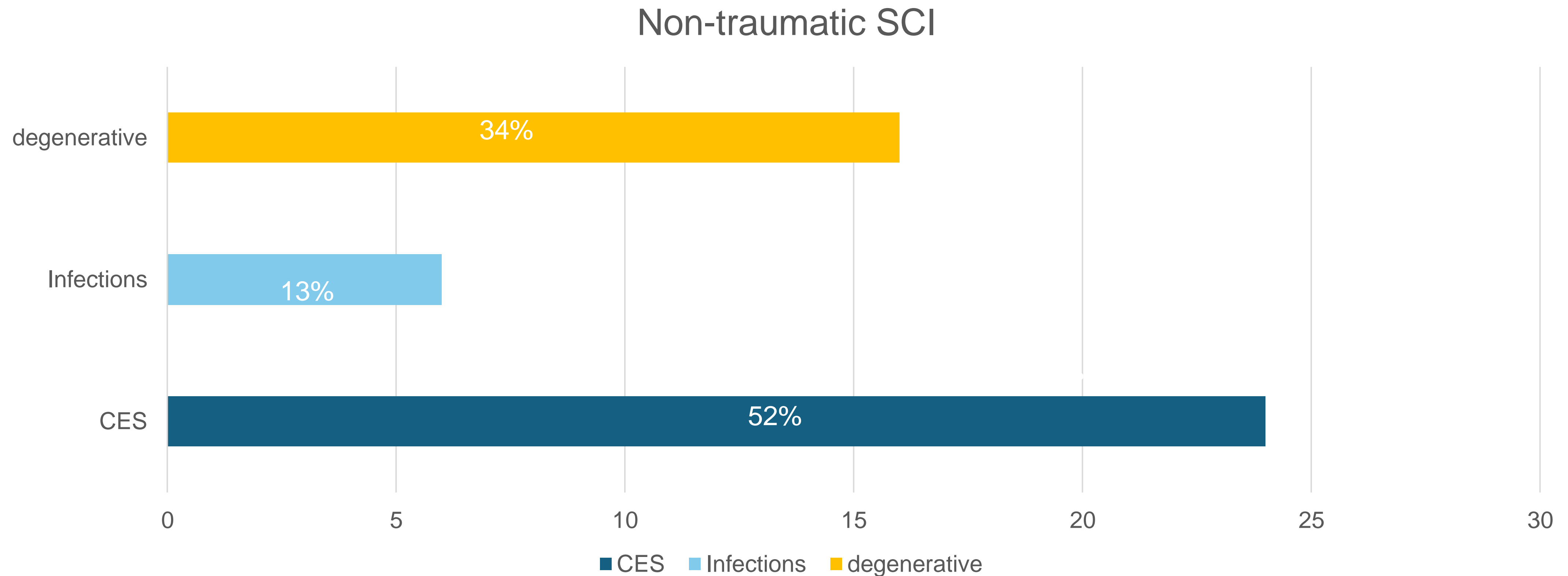


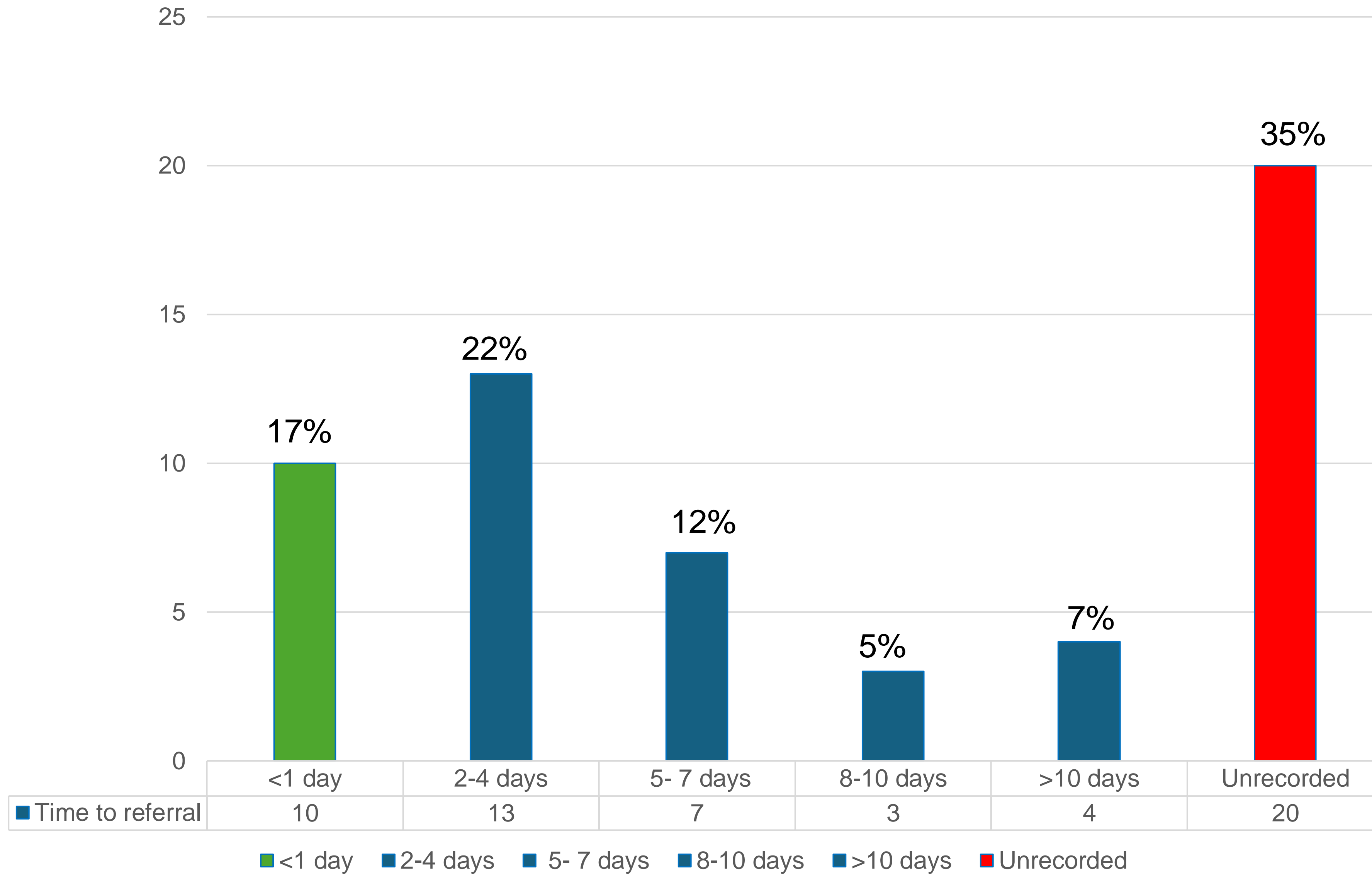
Mechanism of SCI Injury:

- Traumatic SCI: 11
  - C- Spine Fractures : 8
  - Thoracolumbar Fractures: 3



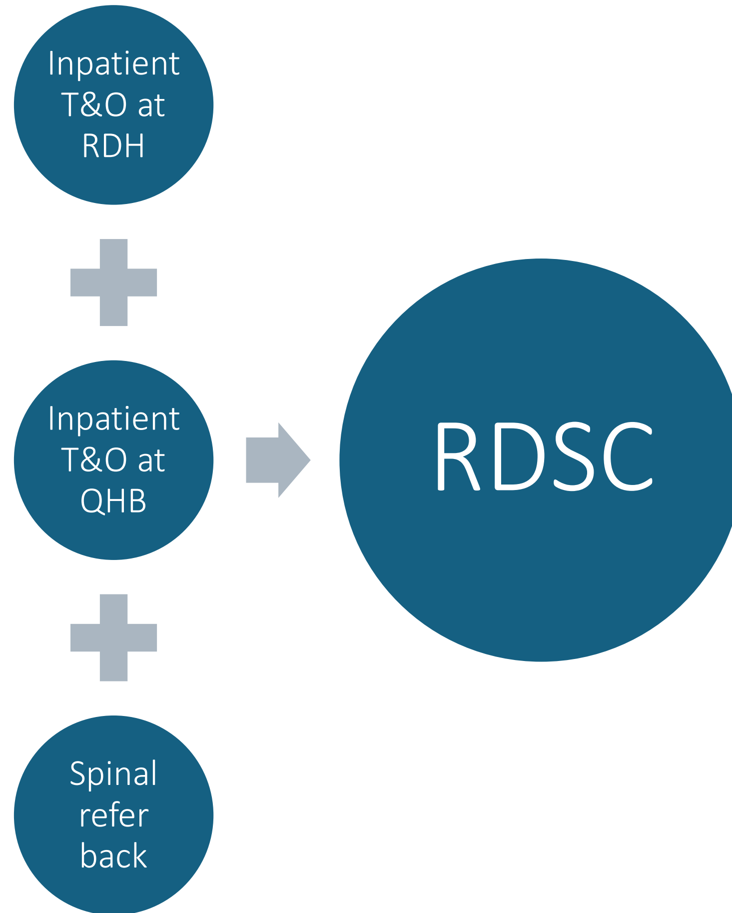
- Non-Traumatic SCI: 46
  - CES: 24
  - Infections: 6
  - Degenerative pathology: 16



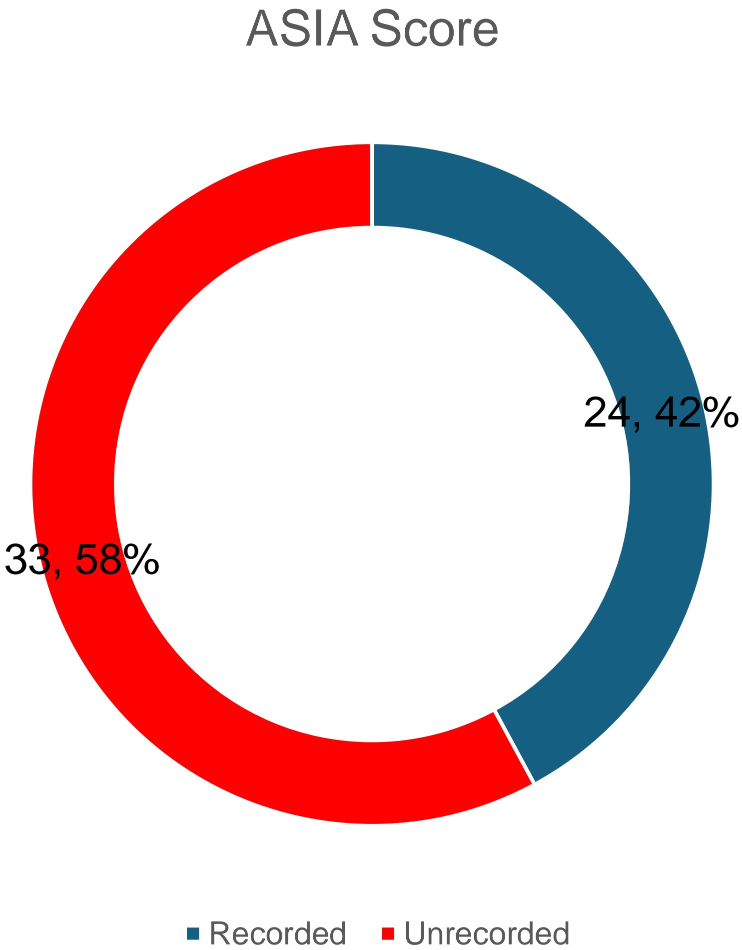


Time to referral
25
20
15
10
5
0
17%
22%
12%
5%
7%
35%
<1 day
2-4 days
5- 7 days
8-10 days
>10 days
Unrecorded
Time to referral
10
13
7
3
4
20
<1 day
2-4 days
5- 7 days
8-10 days
>10 days
Unrecorded

REFERRAL'S SOURCE:

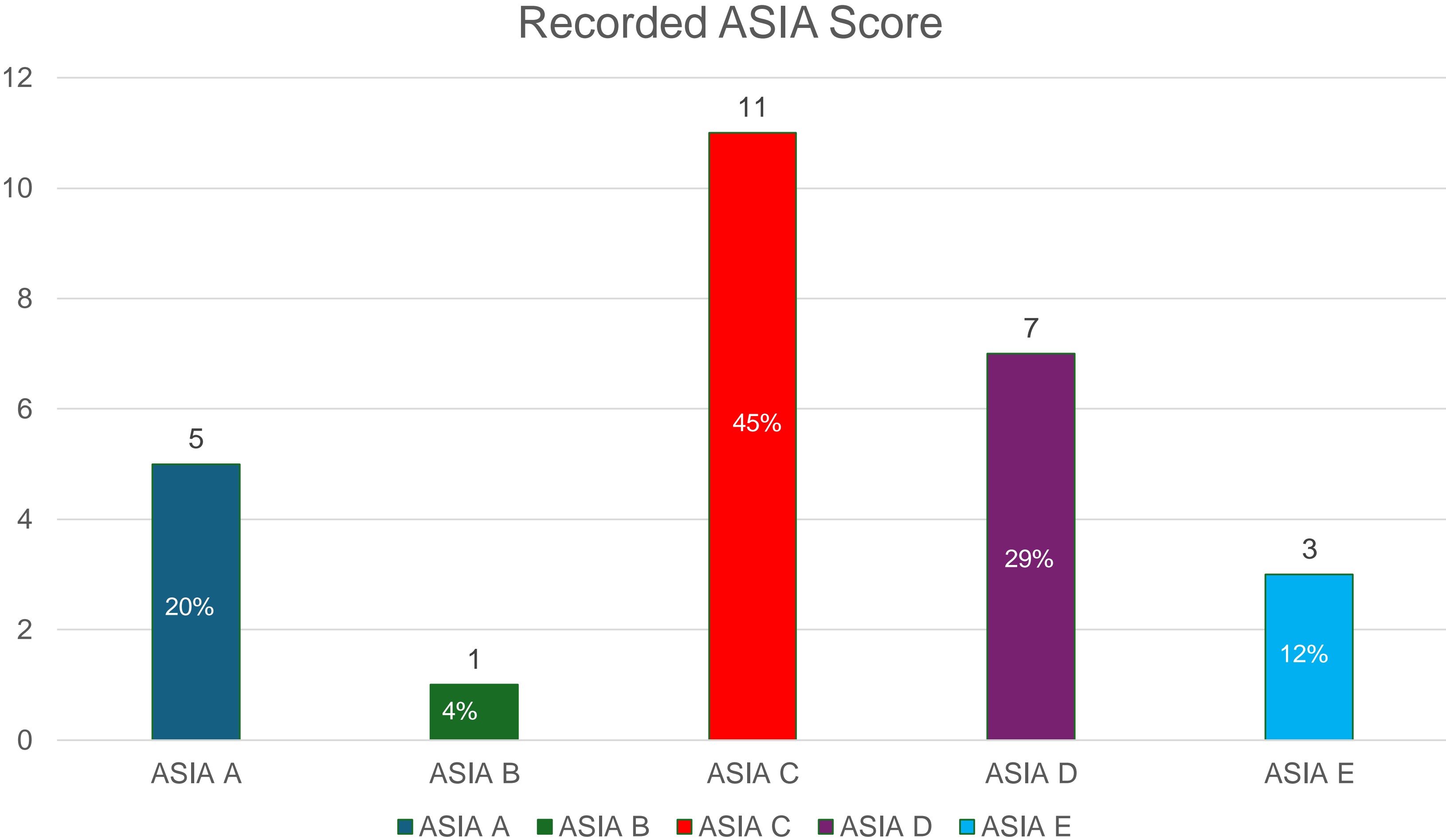


COMPLETENESS OF ASIA SCORE:

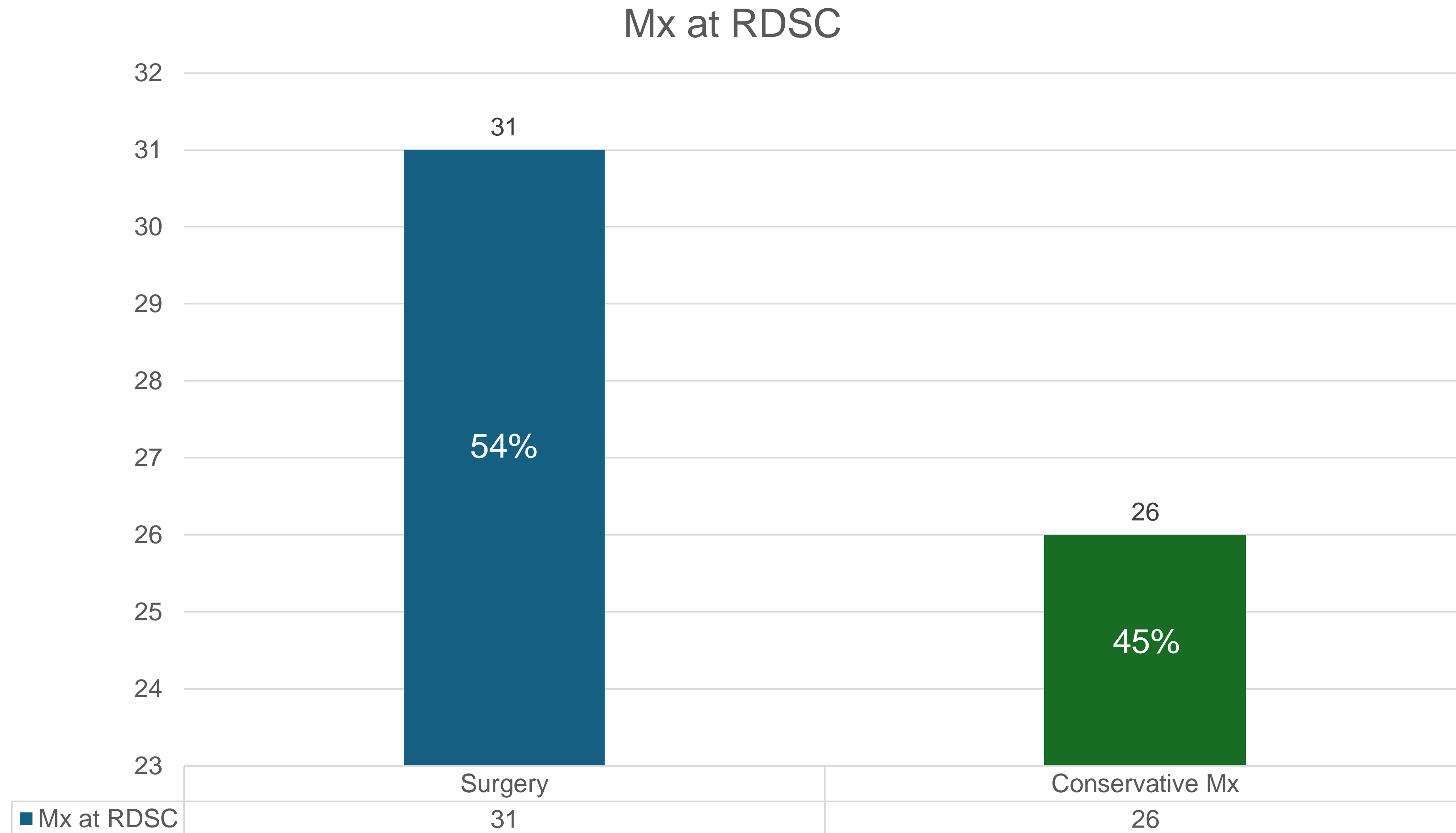


- No ASIA Score recorded on Discharge.

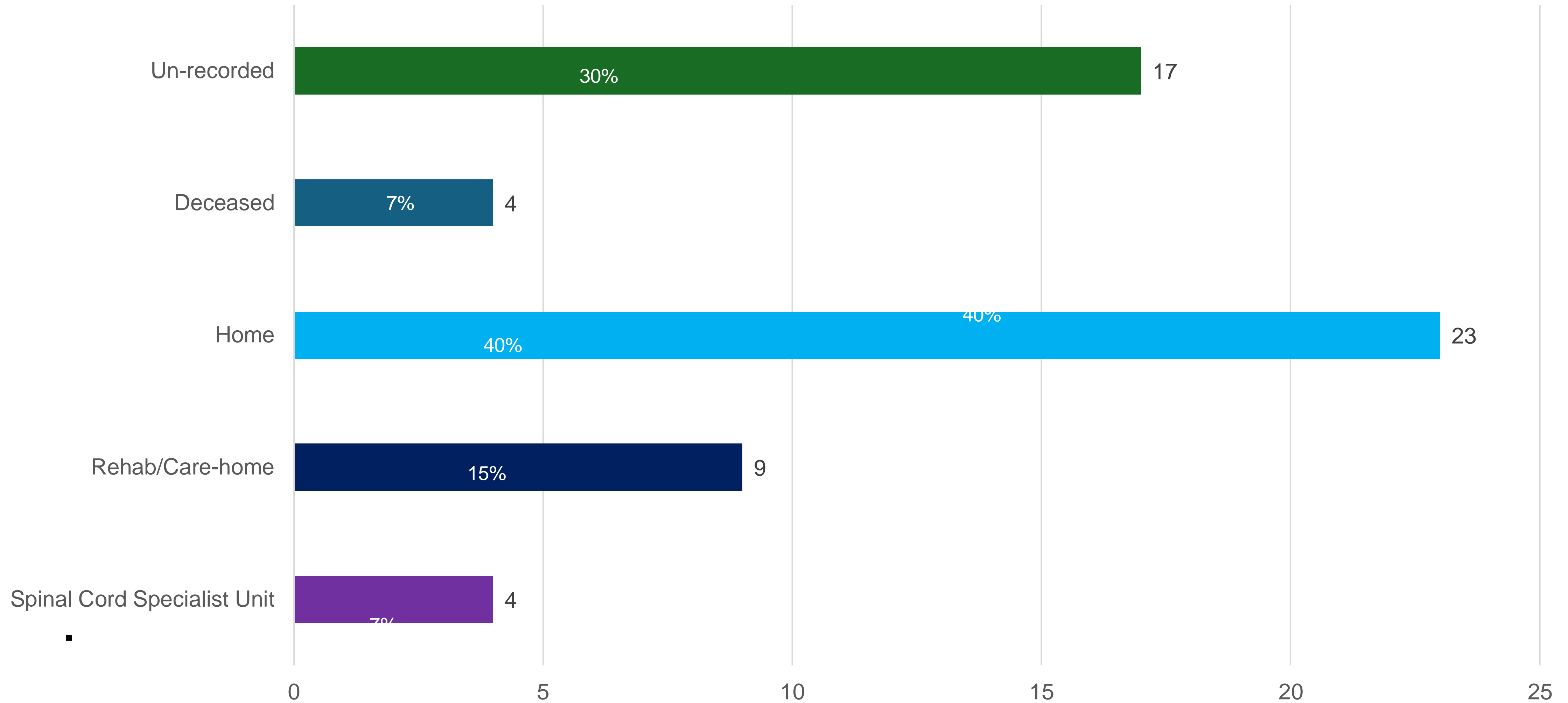
ASIA SCORE:



Management at RDSC



Outcomes



	Spinal Cord Specialist Unit	Rehab/Care-home	Home	Deceased	Un-recorded
Patient Outcomes	4	9	23	4	17

SUMMARY

- Only 17**% of SCI referrals** were made within the expected timeframe
- **30%** of referrals with **unrecorded outcome**
- **24%** of SCI patients had ASIA recorded on admission.
- No record of ASIA on discharge.
- Delayed referrals were associated with **longer admission** and delayed management.

CHALLENGES:

- Limited people familiar with referral pathway and guidelines to do the appropriate referral and ASIA recording.
- Challenges from Specialist Unit for accepting referrals
- Lack of clear communication between team members
- Logistical barriers i-e . Bed shortages, transport delays, patient medically unfit for transfer
- No clarity in referral pathway for primary spinal tumors

RECOMMENDATIONS:

1. Improve Communication & Documentation

2. Staff Training & Awareness

3. Strengthen Referral Pathway & Feedback Loop

4. System & Capacity Improvements

5. Sustainability & Evaluation

- Re-audit in 6–12 months to measure improvement and compliance

- THANKYOU