

## Activity Report for Spinal Cord Injuries during the 2019/20 Financial Year

This report presents statistics on spinal cord injury (SCI) cases for the 2019/20 financial year discharged from the acute and rehabilitation spinal cord injury units (SCIU) in the NSW SSCIS hospitals - the Royal North Shore Hospital (RNSH), the Prince of Wales Hospital (POWH) and Royal Rehab (RR), using data from the Spinal Cord Injury Database (SCID).

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➤ Readmissions with an established SCI .....	Pages 11 - 15
➤ Rehabilitation of new spinal cord injuries .....	Pages 16 – 23

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### DATA ANALYSIS OVERVIEW – ACUTE (NEW) SPINAL CORD INJURIES

Overall analysis of 2019/20 financial year data and comparison against previous financial year was:

- New (acute) cases:
  - A total of **138** new SCI cases were admitted to the SSCIS hospitals (RNSH and POWH) and a total of **152** were discharged.
  - There was an increase in the number of new SCI cases discharged from 141 to 152 patients,
- Traumatic versus non-traumatic: There was an increase in the percentage of traumatic cases compared to the previous financial years (57% to 67%), but non-traumatic one has decreased (43% to 33%).
- Male versus female: The percentage of male versus female with a new SCI was 66% vs. 34% compared to the previous financial years 72% vs. 28%.
- Neurological categories: There was an increase in the percentage of incomplete tetraplegia from 35.5% to 43%. There was a decrease in the percentage of incomplete paraplegia from 40% to 34% and complete paraplegia from 13.5% to 12%. But the proportion of complete tetraplegia remained the same 11%.
- Age group: Those aged 65 years and older accounted for 33% to all discharged patients in 2019/20, which was decreased from 37% in the previous financial years.
- Mechanism of injury - There was a decrease in the percentage of non-traumatic SCI from 43% to 33% and sport related from 13% to 7%. There was an increase in the percentage of transport related SCI from 20% to 22%, falls related from 22% to 28% and other causes of spinal injuries from 2% to 10%.
- Spinal management: The percentage of patients managed surgically was 84% versus 16% managed conservatively. Among patients managed surgically, 79% implemented in SSCIS hospitals and 21% in other referring hospitals.
- Admission entry point: There was an increase in the percentage of patients admitted through the Emergency Department (direct admission) from 22% to 36%, and those transferred from rural public hospitals from 15% to 18%. There was a decrease in those transferred from other metropolitan public hospitals, interstate hospitals and private hospitals.
- Discharge destination for patients leaving the acute SCI units:
  - Transfer to rehabilitation: 55% (down from 70%) of patients were transferred to the local rehabilitation spinal units at the Royal Rehab and Prince of Wales Hospital for rehabilitation. Transfer to SSCIS acute spinal units: 7% (up from 2%) of patients were transferred between the 2 acute SCIUs. Transfer to Royal Rehabilitation Private SCIU: 6% transferred to RR private.
- Length of stay (LOS) in the acute SCI Unit:
  - There was an increase in the average (from 40 days to 52 days) and the median (from 29 days to 34 days) LOS with outliers (\*). The acute LOS is calculated from the date a patient with a new SCI is admitted to one of the acute SCI units (RNSH & POWH) to the date they are discharged from the acute SCI Units.

## **NSW STATE SPINAL CORD INJURY SERVICE (SSCIS) FINANCIAL YEAR REPORT**

- Average length of stay without outliers increased from 39 days to 55 days and the median LOS from 31 days to 38 days.

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(\*) Outliers are patients who died, VQOs and patients with length of stay less than 7 and more than 365 days.

# NSW STATE SPINAL CORD INJURY SERVICE (SSCIS) FINANCIAL YEAR REPORT

## ACUTE SPINAL CORD INJURY ACTIVITY DATA IN FINANCIAL YEARS

	14/15		15/16		16/17		17/18		18/19		19/20	
<b>Acute Admitted patients</b>	<b>122</b>		<b>120</b>		<b>130</b>		<b>127</b>		<b>152</b>		<b>138</b>	
<b>Acute discharged patients</b>	<b>123</b>		<b>126</b>		<b>127</b>		<b>134</b>		<b>141</b>		<b>152</b>	
<b>Aetiology of Injury</b>												
Traumatic	91	74.0%	102	81.0%	88	69.3%	92	68.7%	80	56.7%	102	67.1%
Non Traumatic	32	26.0%	24	19.0%	39	30.7%	42	31.3%	61	43.3%	50	32.9%
<b>Gender</b>												
Male	85	69.1%	99	78.6%	88	69.3%	99	73.9%	102	72.3%	101	66.4%
Female	38	30.9%	27	21.4%	39	30.7%	35	26.1%	39	27.7%	51	33.6%
<b>Spinal Impairment on admission</b>												
Tetraplegia	65	52.8%	68	54.0%	58	45.7%	71	53.0%	65	46.1%	83	54.6%
Paraplegia	58	47.2%	58	46.0%	69	54.3%	63	47.0%	76	53.9%	69	45.4%
<b>Level of Injury on admission</b>												
Cervical	65	52.8%	68	54.0%	58	45.7%	71	53.0%	65	46.1%	83	54.6%
Thoracic	41	33.3%	42	33.3%	54	42.5%	52	38.8%	61	43.3%	45	29.6%
Lumbar	15	12.2%	14	11.1%	15	11.8%	11	8.2%	14	9.9%	23	15.1%
Sacral	2	1.6%	2	1.6%	0	0.0%	0	0.0%	1	0.7%	1	0.7%
<b>Extent of Injury on admission</b>												
Complete	39	31.7%	42	33.3%	39	30.7%	39	29.1%	34	24.1%	33	21.7%
Incomplete	84	68.3%	84	66.7%	88	69.3%	95	70.9%	107	75.9%	119	78.3%
<b>ASIA on admission</b>												
ASIA A	39	31.7%	42	33.3%	39	30.7%	39	29.1%	34	24.1%	33	21.7%
ASIA B	22	17.9%	12	9.5%	16	12.6%	21	15.7%	15	10.6%	16	10.5%
ASIA C	21	17.1%	24	19.0%	28	22.0%	28	20.9%	40	28.4%	38	25.0%
ASIA D	41	33.3%	48	38.1%	44	34.6%	46	34.3%	52	36.9%	65	42.8%
<b>Neurological categories on admission</b>												
Complete Tetraplegia	17	13.8%	17	13.5%	8	6.3%	10	7.5%	15	10.6%	17	11.2%
Incomplete Tetraplegia	48	39.0%	51	40.5%	50	39.4%	61	45.5%	50	35.5%	66	43.4%
Complete Paraplegia	22	17.9%	25	19.8%	31	24.4%	29	21.6%	19	13.5%	18	11.8%
Incomplete Paraplegia	36	29.3%	33	26.2%	38	29.9%	34	25.4%	57	40.4%	51	33.6%
<b>Age at Injury</b>												
15 - 24 yrs.	10	8.1%	14	11.1%	11	8.7%	13	9.7%	15	10.6%	13	8.6%
25 - 34 yrs.	11	8.9%	15	11.9%	12	9.4%	21	15.7%	20	14.2%	17	11.2%
35 - 44 yrs.	14	11.4%	19	15.1%	12	9.4%	13	9.7%	12	8.5%	22	14.5%
45 - 54 yrs.	21	17.1%	16	12.7%	26	20.5%	16	11.9%	15	10.6%	28	18.4%
55 - 64 yrs.	29	23.6%	21	16.7%	30	23.6%	19	14.2%	27	19.1%	22	14.5%
65 - 74 yrs.	18	14.6%	22	17.5%	19	15.0%	23	17.2%	29	20.6%	30	19.7%
75 - 84 yrs.	12	9.8%	15	11.9%	13	10.2%	23	17.2%	16	11.3%	18	11.8%
85 yrs. or more	8	6.5%	4	3.2%	4	3.1%	6	4.5%	7	5.0%	2	1.3%
<b>Cause of Injury <sup>(1)</sup></b>												
<b>Falls</b>	<b>43</b>	<b>35.0%</b>	<b>39</b>	<b>31.0%</b>	<b>40</b>	<b>31.5%</b>	<b>36</b>	<b>26.9%</b>	<b>31</b>	<b>22.0%</b>	<b>43</b>	<b>28.3%</b>
1 metre or more	14	32.6%	15	38.5%	18	45.0%	13	36.1%	10	32.3%	11	25.6%
Less than 1 metre	29	67.4%	24	61.5%	22	55.0%	23	63.9%	21	67.7%	32	74.4%
<b>Transport</b>	<b>32</b>	<b>26.0%</b>	<b>36</b>	<b>28.6%</b>	<b>28</b>	<b>22.0%</b>	<b>40</b>	<b>29.9%</b>	<b>28</b>	<b>19.9%</b>	<b>33</b>	<b>21.7%</b>
MVA	16	50.0%	10	27.8%	6	21.4%	11	27.5%	14	50.0%	14	42.4%
QBA	1	3.1%	0	0.0%	3	10.7%	4	10.0%	1	3.6%	0	0.0%
MBA	9	28.1%	13	36.1%	9	32.1%	13	32.5%	6	21.4%	7	21.2%
Bicycle	5	15.6%	9	25.0%	7	25.0%	9	22.5%	3	10.7%	10	30.3%

## NSW STATE SPINAL CORD INJURY SERVICE (SSCIS) FINANCIAL YEAR REPORT

	14/15		15/16		16/17		17/18		18/19		19/20	
<b>Acute discharged patients</b>	<b>123</b>		<b>126</b>		<b>127</b>		<b>134</b>		<b>141</b>		<b>152</b>	
Boat related	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	3.0%
Pedestrian	1	3.1%	2	5.6%	3	10.7%	1	2.5%	3	10.7%	1	3.0%
Aircraft	0	0.0%	1	2.8%	0	0.0%	2	5.0%	1	3.6%	0	0.0%
Railway	0	0.0%	1	2.8%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
<b>Sport</b>	<b>9</b>	<b>7.3%</b>	<b>19</b>	<b>15.1%</b>	<b>14</b>	<b>11.0%</b>	<b>11</b>	<b>8.2%</b>	<b>18</b>	<b>12.8%</b>	<b>10</b>	<b>6.6%</b>
Football	0	0.0%	2	10.5%	3	21.4%	2	18.2%	3	16.7%	0	0.0%
Water related	6	66.7%	10	52.6%	7	50.0%	6	54.5%	8	44.4%	9	90.0%
Sport Aerial	1	11.1%	1	5.3%	0	0.0%	0	0.0%	1	5.6%	0	0.0%
Sport Field	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sport Horse related	1	11.1%	3	15.8%	2	14.3%	1	9.1%	3	16.7%	1	10.0%
Sport Other	1	11.1%	1	5.3%	1	7.1%	2	18.2%	2	11.1%	0	0.0%
Sport Snow	0	0.0%	2	10.5%	1	7.1%	0	0.0%	1	5.6%	0	0.0%
<b>Other injuries</b>	<b>7</b>	<b>5.7%</b>	<b>8</b>	<b>6.3%</b>	<b>6</b>	<b>4.7%</b>	<b>5</b>	<b>3.7%</b>	<b>3</b>	<b>2.1%</b>	<b>16</b>	<b>10.5%</b>
Firearms	1	14.3%	0	0.0%	2	33.3%	0	0.0%	0	0.0%	0	0.0%
Struck by blunt object	2	28.6%	3	37.5%	1	16.7%	0	0.0%	1	33.3%	4	25.0%
Stuck by sharp object	0	0.0%	1	12.5%	0	0.0%	0	0.0%	1	33.3%	0	0.0%
Jumping	4	57.1%	3	37.5%	0	0.0%	3	60.0%	1	33.3%	10	62.5%
Other	0	0.0%	1	12.5%	3	50.0%	2	40.0%	0	0.0%	2	12.5%
<b>Non Traumatic</b>	<b>32</b>	<b>26.0%</b>	<b>24</b>	<b>19.0%</b>	<b>39</b>	<b>30.7%</b>	<b>42</b>	<b>31.3%</b>	<b>61</b>	<b>43.3%</b>	<b>50</b>	<b>32.9%</b>
Infectious & Inflammatory	7	21.9%	8	33.3%	6	15.4%	14	33.3%	20	32.8%	10	20.0%
Vascular disorders	10	31.3%	8	33.3%	14	35.9%	16	38.1%	12	19.7%	15	30.0%
Spinal Disc disorder	3	9.4%	1	4.2%	2	5.1%	0	0.0%	5	8.2%	7	14.0%
Spinal Stenosis	2	6.3%	1	4.2%	5	12.8%	1	2.4%	2	3.3%	2	4.0%
Spinal Neoplasm	2	6.3%	1	4.2%	6	15.4%	2	4.8%	6	9.8%	9	18.0%
Post spinal surgery	5	15.6%	3	12.5%	3	7.7%	6	14.3%	6	9.8%	4	8.0%
Other	3	9.4%	2	8.3%	3	7.7%	3	7.1%	10	16.4%	3	6.0%
<b>Spinal Management</b>												
Conservative Management	21	17.1%	22	17.5%	20	15.7%	20	14.9%	24	17.0%	24	15.8%
Spinal surgery	102	82.9%	104	82.5%	107	84.3%	114	85.1%	117	83.0%	128	84.2%
<b>Location of spinal surgery</b>												
SSCIS Hospitals	75	73.5%	77	74.0%	68	63.6%	81	71.1%	78	66.7%	101	78.9%
Other Hospitals	27	26.5%	27	26.0%	39	36.4%	33	28.9%	39	33.3%	27	21.1%
<b>Referral Times</b>												
Transfer less than 24 hrs	30	38.0%	37	42.0%	36	40.0%	39	41.5%	33	32.0%	45	50.6%
Transfer 24 hrs and more	49	62.0%	51	58.0%	54	60.0%	55	58.5%	70	68.0%	44	49.4%
<b>Referral admissions</b>												
Total transfers	79	64.2%	88	69.8%	90	70.9%	94	70.1%	103	73.0%	89	58.6%
Overseas & Home	9	7.3%	9	7.1%	4	3.1%	1	0.7%	7	5.0%	9	5.9%
Direct admission	35	28.5%	29	23.0%	33	26.0%	39	29.1%	31	22.0%	54	35.5%
<b>Referral Sources</b>												
Emergency Department	35	28.5%	29	23.0%	33	26.0%	39	29.1%	31	22.0%	54	35.5%
Metro Public Hospital	43	35.0%	43	34.1%	50	39.4%	46	34.3%	55	39.0%	43	28.3%
Rural Public Hospital	19	15.4%	24	19.0%	17	13.4%	29	21.6%	21	14.9%	28	18.4%
Interstate Hospital	9	7.3%	17	13.5%	16	12.6%	11	8.2%	13	9.2%	12	7.9%
Private Hospital	8	6.5%	4	3.2%	7	5.5%	8	6.0%	14	9.9%	6	3.9%
Overseas Hospital	5	4.1%	7	5.6%	4	3.1%	0	0.0%	5	3.5%	6	3.9%
Home	4	3.3%	2	1.6%	0	0.0%	1	0.7%	2	1.4%	3	2.0%

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	14/15		15/16		16/17		17/18		18/19		19/20	
<b>Acute discharged patients</b>	<b>123</b>		<b>126</b>		<b>127</b>		<b>134</b>		<b>141</b>		<b>152</b>	
<b>Discharge Destinations</b>												
Local Rehabilitation Centres	84	68.3%	74	58.7%	80	63.0%	91	67.9%	99	70.2%	84	55.3%
Local SSCIS Acute Hospital <sup>(3)</sup>	0	0.0%	16	12.7%	10	7.9%	6	4.5%	3	2.1%	11	7.2%
Royal Rehab Private	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	9	5.9%
Home	11	8.9%	11	8.7%	15	11.8%	8	6.0%	11	7.8%	15	9.9%
Metro Public Hospital	4	3.3%	4	3.2%	2	1.6%	2	1.5%	3	2.1%	10	6.6%
Rural Public Hospital	4	3.3%	3	2.4%	1	0.8%	6	4.5%	3	2.1%	7	4.6%
Interstate Hospital	1	0.8%	2	1.6%	2	1.6%	5	3.7%	5	3.5%	3	2.0%
Private Hospital	4	3.3%	4	3.2%	8	6.3%	3	2.2%	7	5.0%	3	2.0%
Overseas Hospital	4	3.3%	2	1.6%	1	0.8%	2	1.5%	2	1.4%	0	0.0%
Other accommodation	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other Health accommodation	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.7%	0	0.0%
Rehab facility other	0	0.0%	0	0.0%	0	0.0%	1	0.7%	1	0.7%	2	1.3%
Nursing Home	3	2.4%	4	3.2%	3	2.4%	3	2.2%	1	0.7%	4	2.6%
Died	8	6.5%	6	4.8%	5	3.9%	7	5.2%	5	3.5%	4	2.6%
<b>Length of stay with outliers<sup>(2)</sup></b>												
Total discharged	123		126		127		134		141		152	
Average in days	52		41		45		40		40		52	
Median in days	52		35		33		30		29		34	
Range in days	4 - 478		2 - 214		2 - 413		1 - 217		1 - 443		2 - 315	
<b>Length of stay without outliers<sup>(2)</sup></b>												
Total discharged	112		110		112		119		127		141	
Average in days	50		45		47		44		39		55	
Median in days	54		42		38		35		31		38	
Range in days	4 - 131		7 - 214		8 - 131		7 - 217		7 - 158		7 - 315	

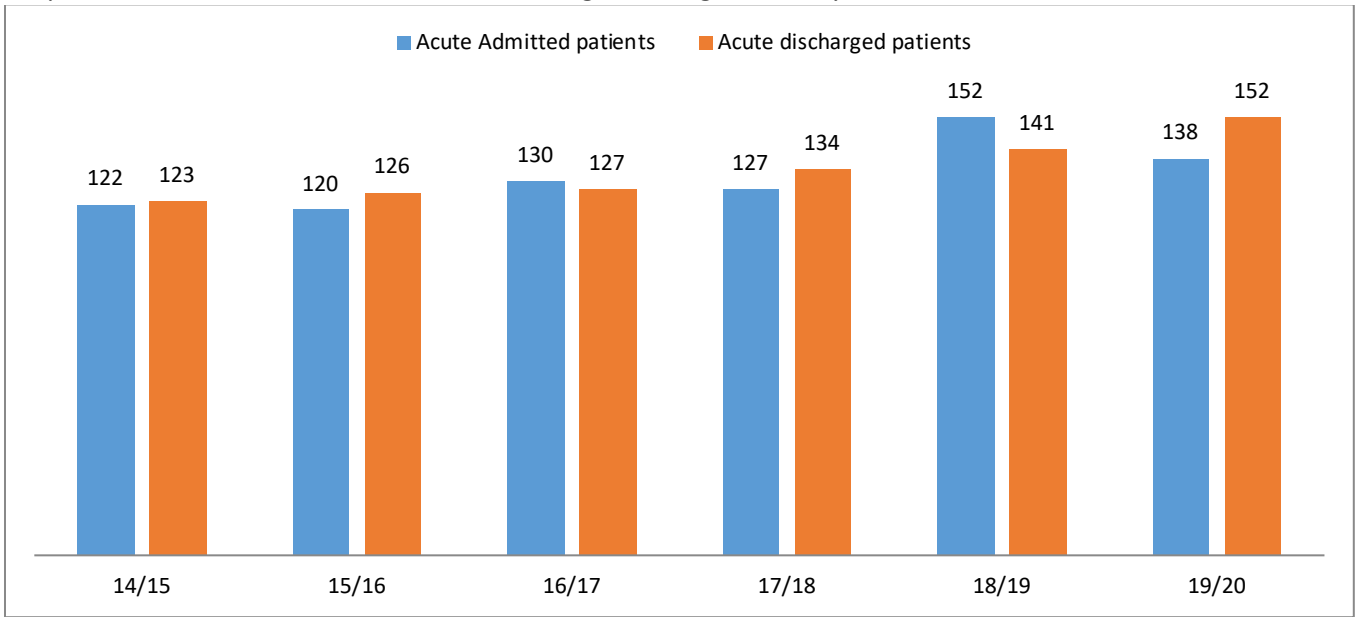
(1) For each cause of injury (e.g. transport, falls etc.) a number of sub-causes are listed. The % figure listed for the cause (e.g. Transport) represents the % of transport injuries out of the total injuries for that year. The % figure listed for the sub-cause (e.g. MVA etc.) represents the % of MVA injuries out of the total transport injuries for that year.

(2) Outliers are patients who died, VDQs and patients with length of stay less than 7 and more than 365 days.

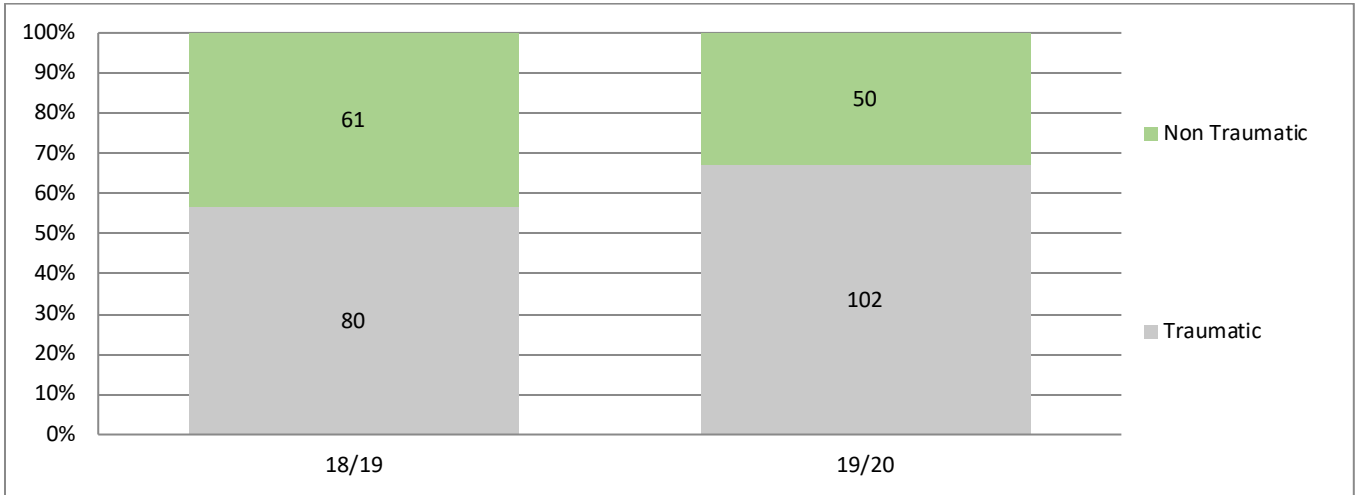
(3) Patients were transferred between SSCIS Acute SCIUs.

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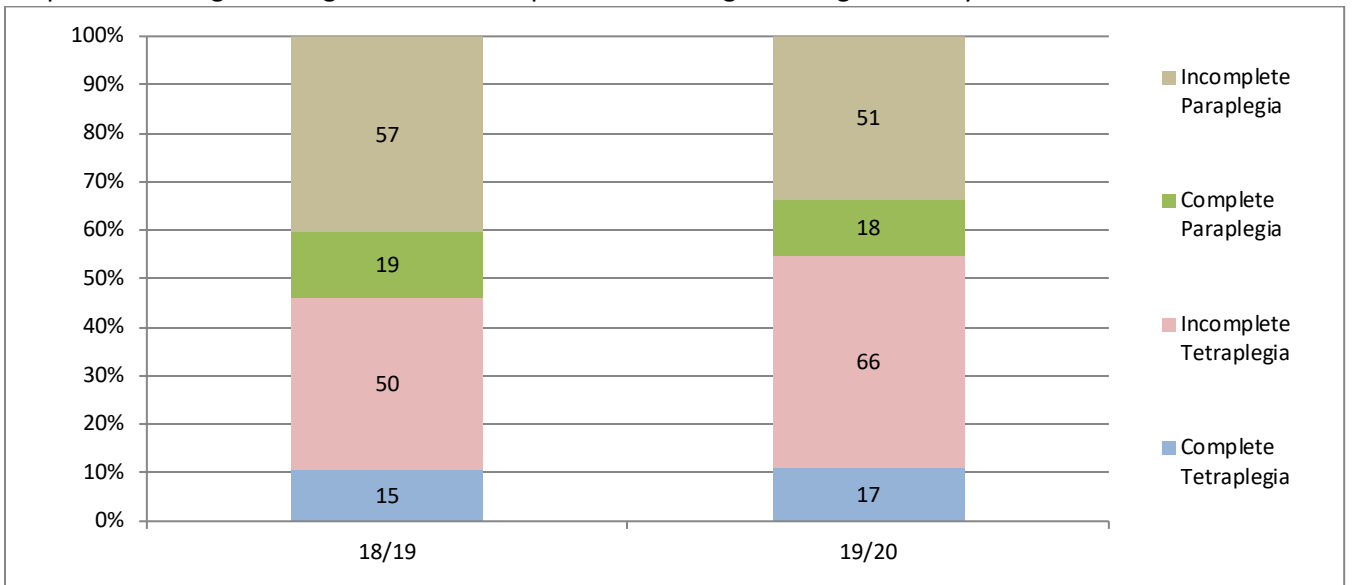
Graph-1 New cases of SCI admitted and discharged during financial years



Graph-2 Aetiology of new SCI patients discharged during financial years

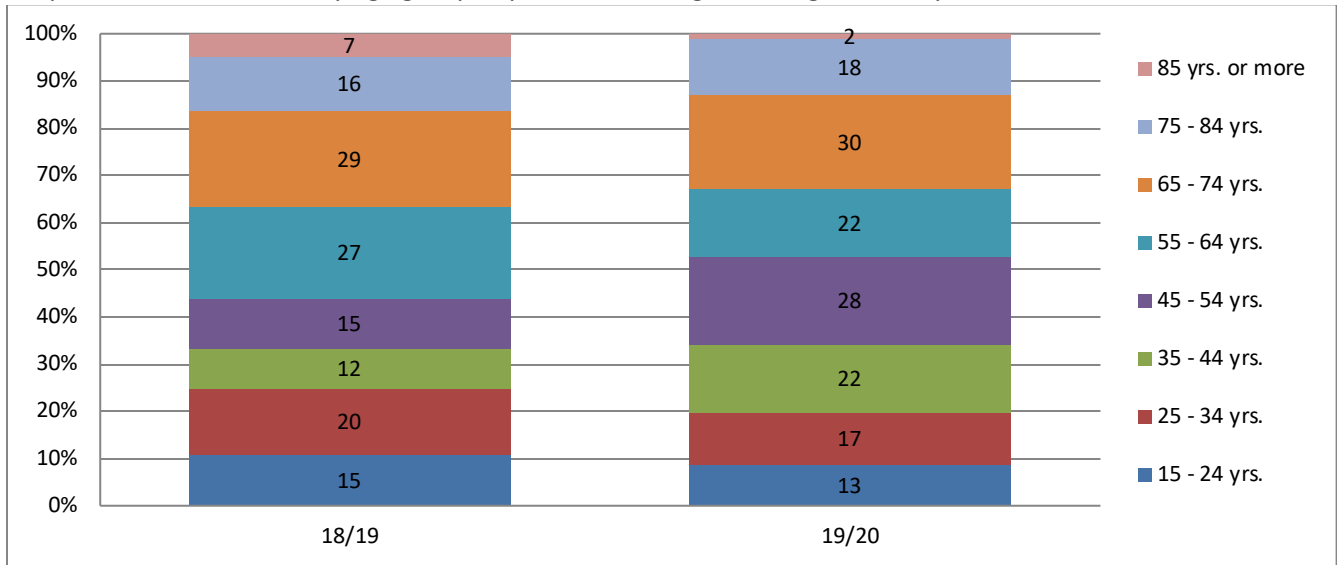


Graph-3 Neurological categories of new SCI patients discharged during financial years

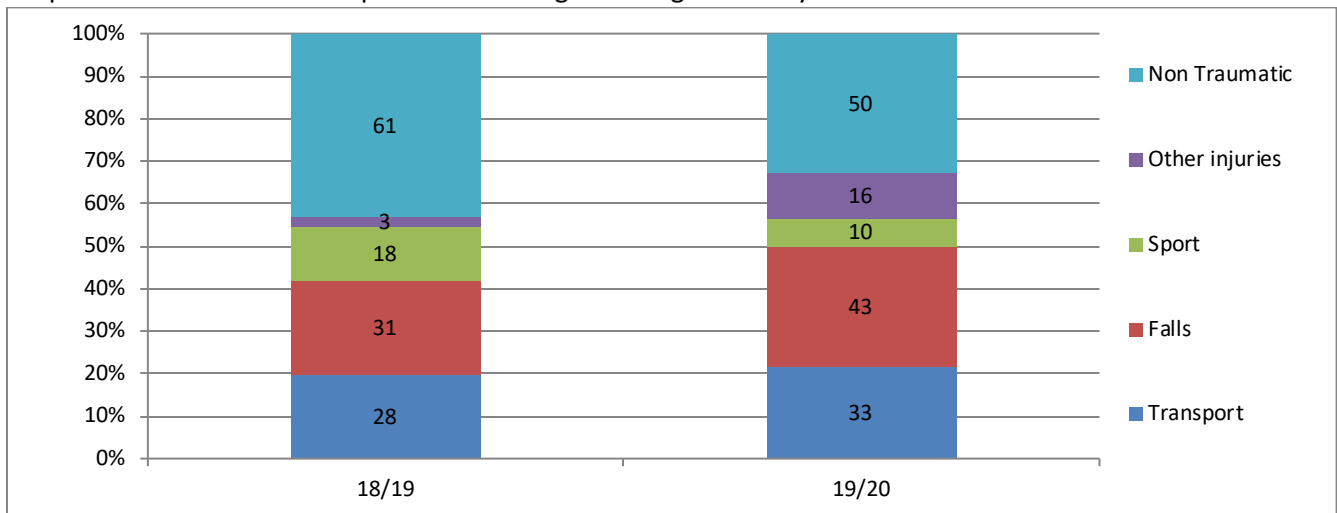


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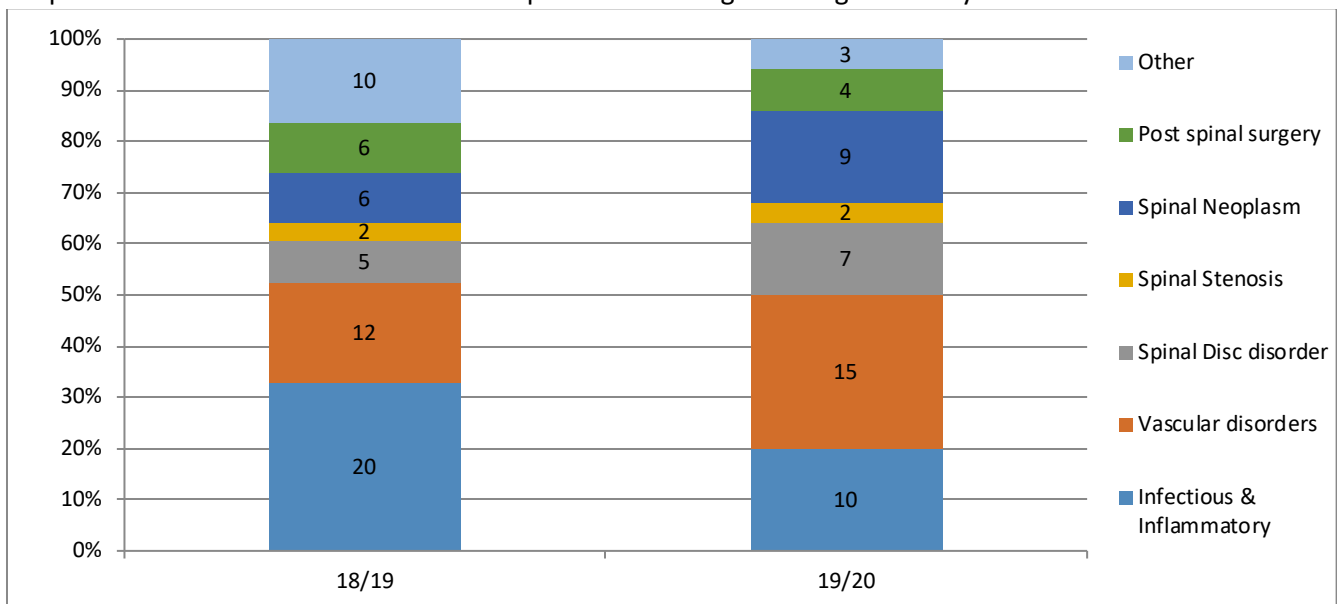
Graph-4 New cases of SCI by age group of patient discharged during financial years



Graph-5 Mechanism of SCI of patients discharged during financial years

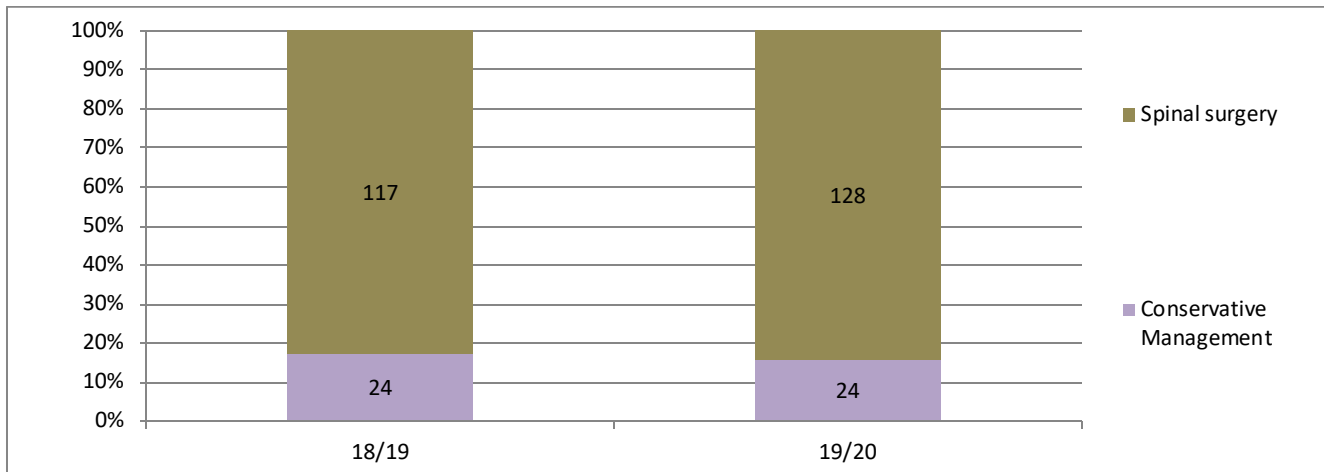


Graph-6 New cases of non-traumatic SCI of patients discharged during financial years

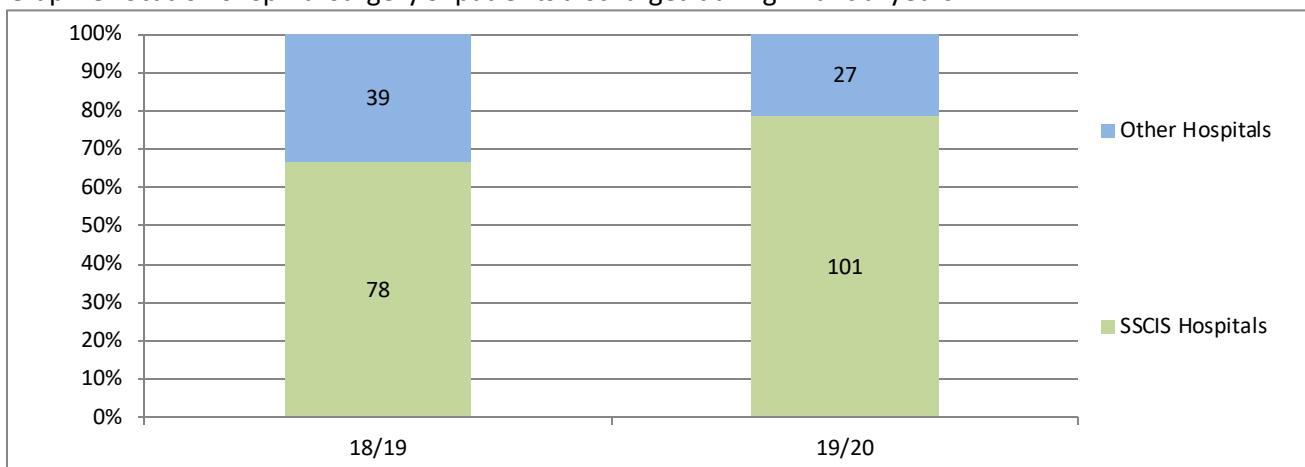


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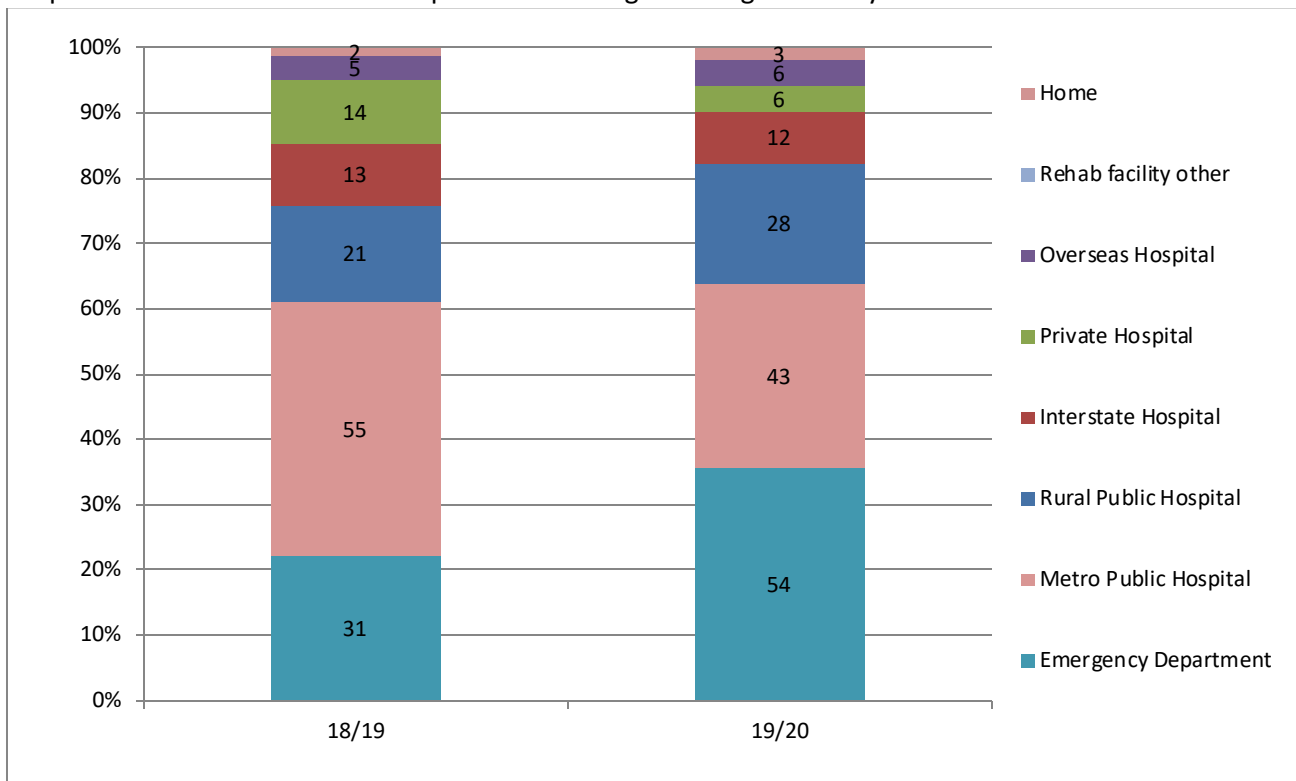
Graph-7 Spinal management of new SCI patients discharged during financial years



Graph-8 Location of spinal surgery of patients discharged during financial years



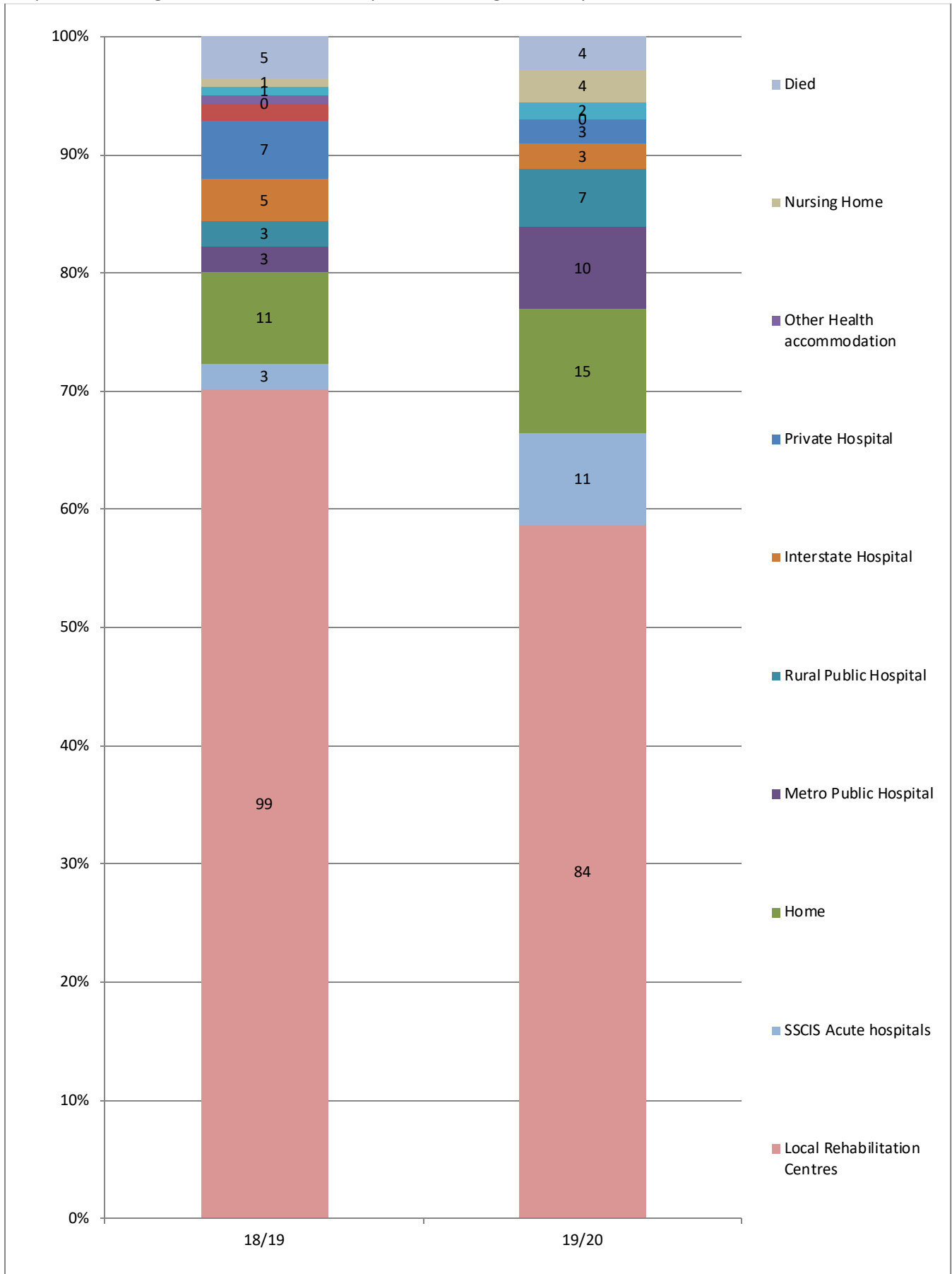
Graph-9 Referral source of new SCI patients discharged during financial years





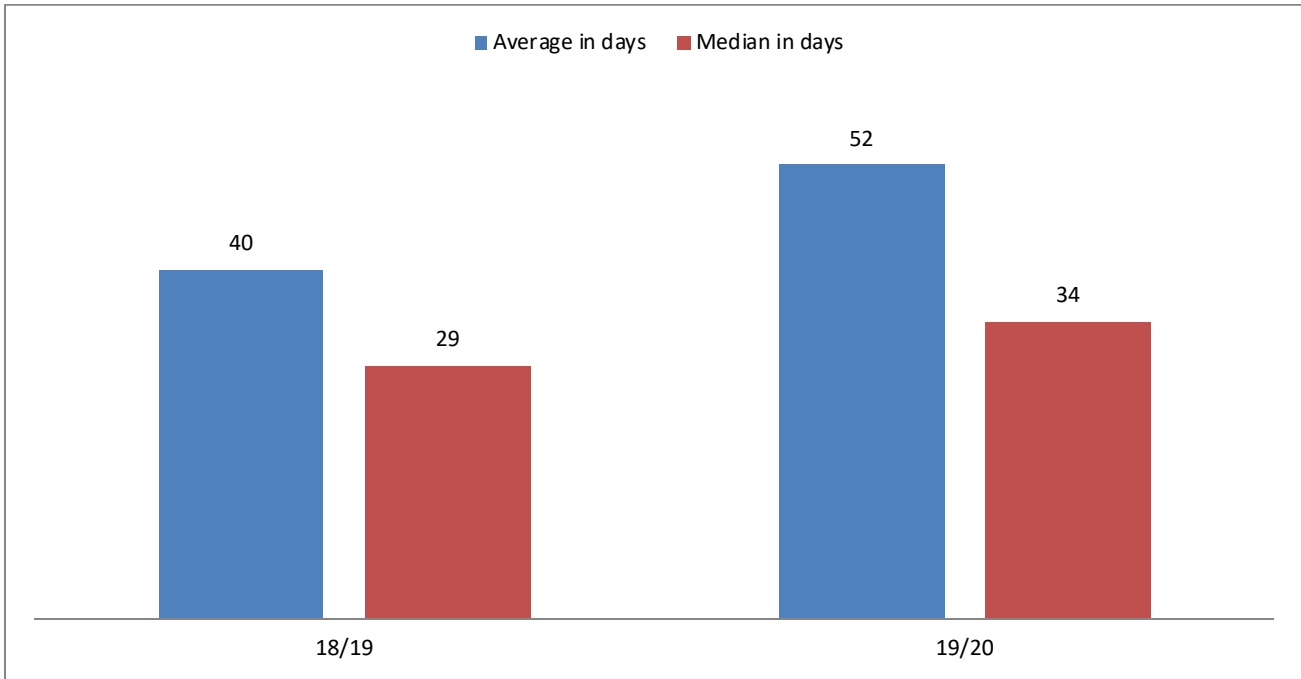
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Graph-10 Discharge destination of new SCI patients during financial years

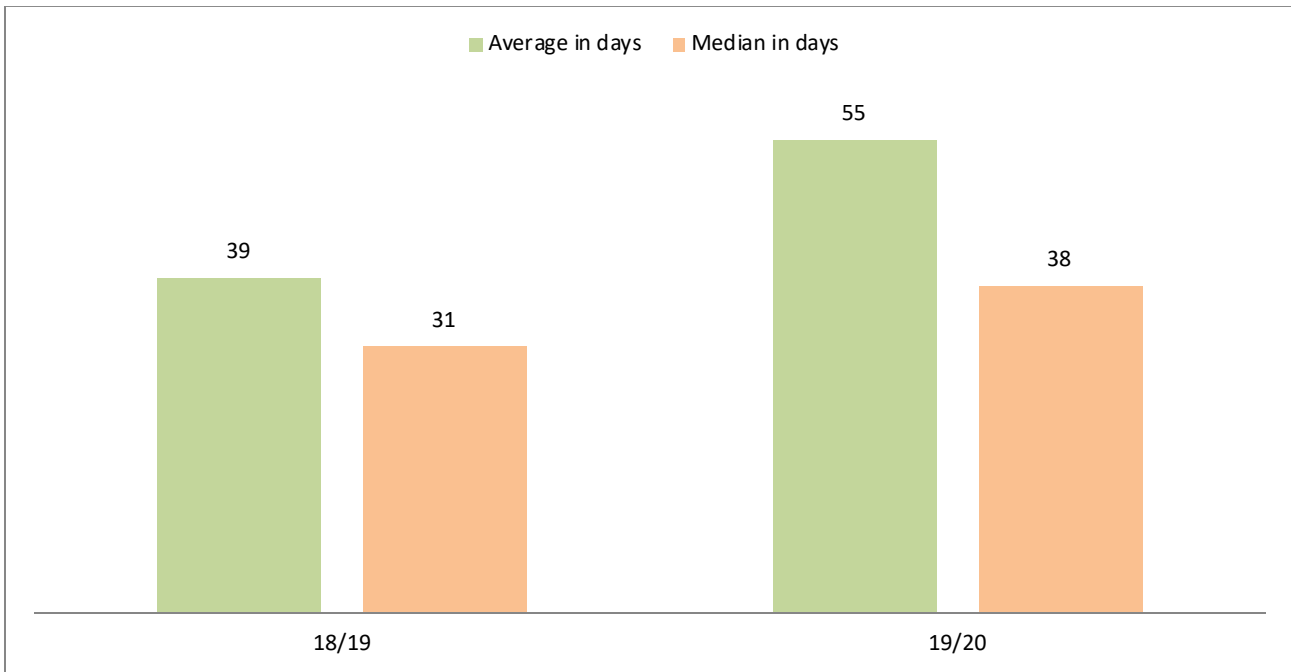


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Graph-11 Average and median Length of stay in days of patients discharged (With outliers\*)



Graph-12 Average and median Length of stay in days of patients discharged (Without outliers\*)



# NSW STATE SPINAL CORD INJURY SERVICE (SSCIS) FINANCIAL YEAR REPORT

## DATA ANALYSIS OVERVIEW – READMISSIONS OF ESTABLISHED SPINAL CORD INJURIES

In the 2019/2020 financial year a total of **299** patients with an established SCI were managed and discharged from the SSCIS hospitals. There was a decrease in the number from **337** to **299** compared to the previous financial years.

### Planned versus unplanned readmissions

Of the 299 patients 232 or 78% were unplanned and 67 or 22% of patients were planned admissions. There was an increase in the percentage of unplanned admission from 74% to 78% and a decrease in the percentage of planned admission from 26% to 22% compared with the previous financial year.

### Reason for admission – main principal diagnosis:

- Genitourinary diseases – remained the main reason of admission 19% - decrease form 24% of admissions.
- Neurologic & neuromuscular disease – decreased from 20% to 17% of admissions.
- Integumentary issues – decreased from 19% to 16% of admissions.
- Systemic diseases – increased from 9% to 12% of admissions.
- Digestive diseases – decreased from 12.5% to 11% of admissions.
- Pulmonary diseases – increased from 7% to 10% of admissions.
- Musculoskeletal diseases – increased from 5% to 6% of admissions.
- Cardiovascular diseases – increased from 1.5% to 5% of admissions

Admission entry point: There was an increase in the proportion of patients admitted through the Emergency Department (direct admission) from 61% to 63%, and the local rehabilitation centre from 4% to 8%, and rural public hospitals from 4% to 5%. There was a decrease in those admitted from home from 24% to 18% and metropolitan public hospitals from 3% to 1%.

Discharge destination following readmission with an established SCI: The majority of patients (81%) were discharged home (Down from 83%).

Length of stay (LOS): The average length of stay remained the same 22 days, but the median length of stay decreased from 10 days to 9 days.

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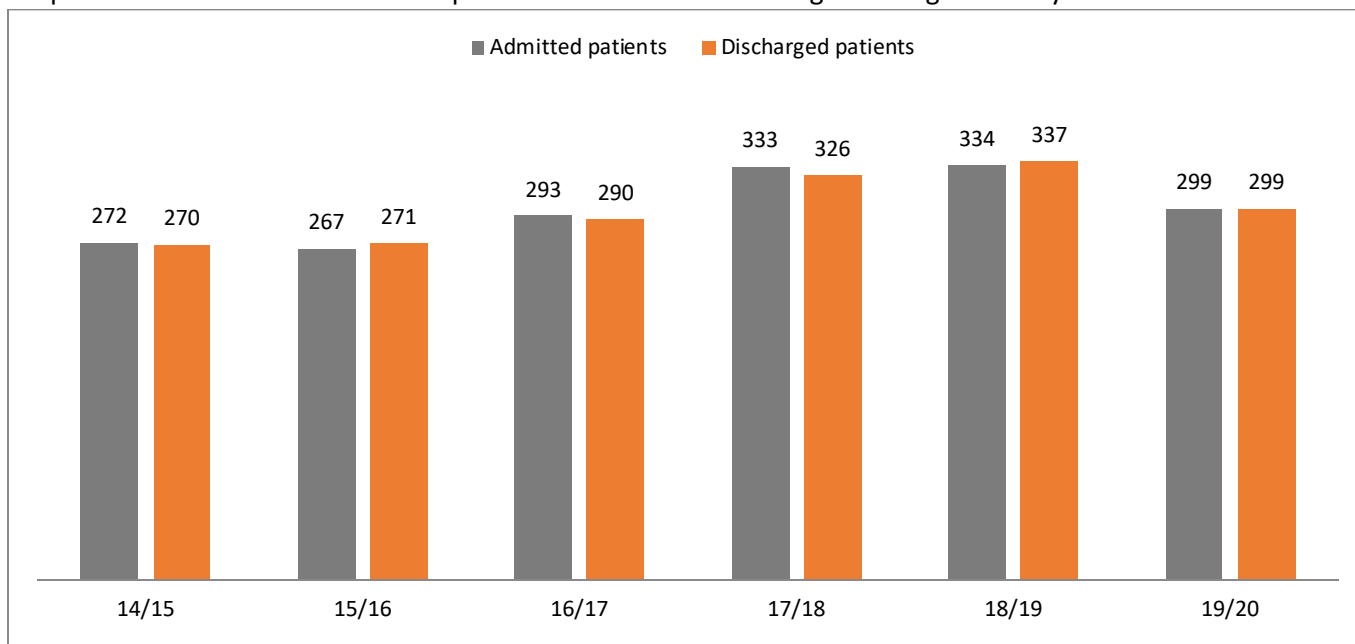
READMISSION OF ESTABLISHED SPINAL CORD INJURY ACTIVITY DATA IN FINANCIAL YEARS												
	14/15		15/16		16/17		17/18		18/19		19/20	
<b>Admitted patients</b>	272		267		293		333		334		299	
<b>Discharged patients</b>	270		271		290		326		337		299	
<b>Planned/ Unplanned</b>												
Planned	73	27.0%	69	25.5%	63	21.7%	65	19.9%	87	25.8%	67	22.4%
Unplanned	197	73.0%	202	74.5%	227	78.3%	261	80.1%	250	74.2%	232	77.6%
<b>Principal Diagnosis</b>												
Cardiovascular	10	3.7%	6	2.2%	16	5.5%	12	3.7%	5	1.5%	15	5.0%
Cognitive & Psychological	3	1.1%	0	0.0%	0	0.0%	7	2.1%	3	0.9%	4	1.3%
Gastrointestinal	37	13.7%	24	8.9%	28	9.7%	32	9.8%	42	12.5%	33	11.0%
Genitourinary	51	18.9%	64	23.6%	55	19.0%	56	17.2%	80	23.7%	57	19.1%
Integumentary	45	16.7%	50	18.5%	47	16.2%	62	19.0%	65	19.3%	47	15.7%
Musculoskeletal	18	6.7%	14	5.2%	18	6.2%	26	8.0%	17	5.0%	18	6.0%
Neurologic & Neuromuscular	45	16.7%	56	20.7%	61	21.0%	77	23.6%	67	19.9%	50	16.7%
Other	4	1.5%	3	1.1%	5	1.7%	3	0.9%	3	0.9%	6	2.0%
Pulmonary	29	10.7%	22	8.1%	26	9.0%	25	7.7%	23	6.8%	31	10.4%
Rehabilitation	2	0.7%	1	0.4%	1	0.3%	1	0.3%	3	0.9%	1	0.3%
Systemic	26	9.6%	31	11.4%	33	11.4%	25	7.7%	29	8.6%	37	12.4%
<b>Referral sources</b>												
ED	161	59.6%	175	64.6%	190	65.5%	221	67.8%	204	60.5%	188	62.9%
Home	62	23.0%	61	22.5%	43	14.8%	54	16.6%	80	23.7%	55	18.4%
Interstate Hospital	0	0.0%	1	0.4%	0	0.0%	0	0.0%	1	0.3%	0	0.0%
Metro Public Hospital	11	4.1%	10	3.7%	6	2.1%	11	3.4%	11	3.3%	3	1.0%
Nursing Home	3	1.1%	2	0.7%	2	0.7%	1	0.3%	0	0.0%	1	0.3%
Out Patient Department	3	1.1%	3	1.1%	3	1.0%	0	0.0%	1	0.3%	3	1.0%
Other Health accommodation	1	0.4%	0	0.0%	3	1.0%	2	0.6%	3	0.9%	3	1.0%
Overseas	1	0.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Private Hospital	1	0.4%	1	0.4%	11	3.8%	5	1.5%	8	2.4%	3	1.0%
Local Rehabilitation Centre	12	4.4%	9	3.3%	17	5.9%	17	5.2%	12	3.6%	24	8.0%
Rehab facility other	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	0.9%	4	1.3%
Rural Public Hospital	15	5.6%	9	3.3%	15	5.2%	15	4.6%	14	4.2%	15	5.0%
<b>Discharge Destinations</b>												
Home	221	81.9%	225	83.0%	229	79.0%	251	77.0%	281	83.4%	242	80.9%
Metro Public Hospital	1	0.4%	5	1.8%	1	0.3%	6	1.8%	1	0.3%	0	0.0%
Nursing Home	9	3.3%	13	4.8%	12	4.1%	6	1.8%	5	1.5%	8	2.7%
Other accommodation	0	0.0%	0	0.0%	0	0.0%	0	0.0%	4	1.2%	0	0.0%
Other Health accommodation	6	2.2%	3	1.1%	6	2.1%	10	3.1%	7	2.1%	7	2.3%
Overseas	1	0.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Private Hospital	4	1.5%	5	1.8%	14	4.8%	17	5.2%	3	0.9%	5	1.7%
Local Rehabilitation Centre	12	4.4%	9	3.3%	17	5.9%	16	4.9%	14	4.2%	23	7.7%
Rehab facility other	0	0.0%	0	0.0%	0	0.0%	1	0.3%	5	1.5%	2	0.7%
Rural Public Hospital	8	3.0%	7	2.6%	8	2.8%	14	4.3%	12	3.6%	6	2.0%
Died	8	3.0%	4	1.5%	3	1.0%	5	1.5%	5	1.5%	6	2.0%
<b>Length of stay with outliers<sup>(1)</sup></b>												
Total discharged	270		271		290		326		337		299	
Average in days	24		21		16		22		22		22	
Median in days	9		8		8		8		10		9	
Range in days	1 - 380		1 - 382		1 - 188		1 - 310		1 - 330		1 - 258	

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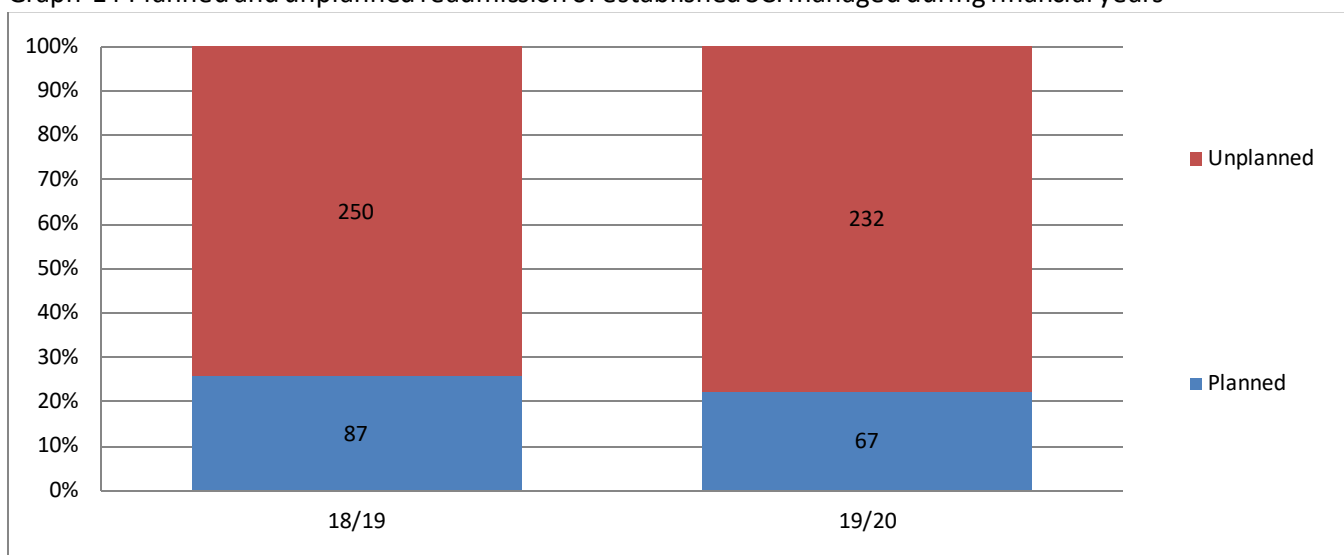
	14/15		15/16		16/17		17/18		18/19		19/20	
<b>Admitted patients</b>	272		267		293		333		334		299	
<b>Discharged patients</b>	270		271		290		326		337		299	
<b>Length of stay without outliers<sup>(1)</sup></b>												
Total discharged	260		266		287		321		332		293	
Average in days	21		19		16		22		21		22	
Median in days	9		8		8		8		10		9	
Range in days	1 - 279		1 - 297		1 - 188		1 - 310		1 - 237		1 - 258	

(1) Outliers are patients died, and patients with length of stay more than 365 days

Graph-13 Number of established SCI patients admitted and discharged during financial years

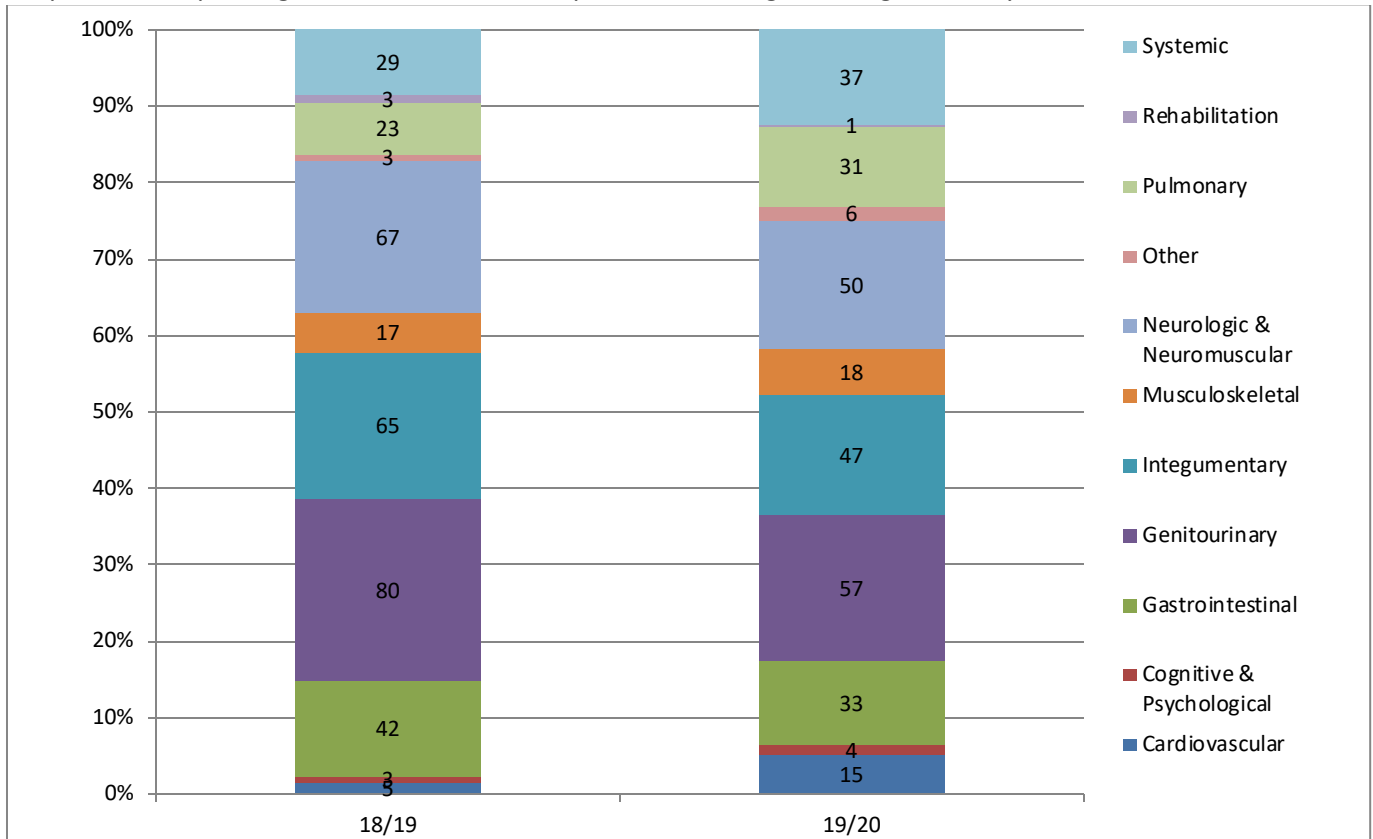


Graph-14 Planned and unplanned readmission of established SCI managed during financial years

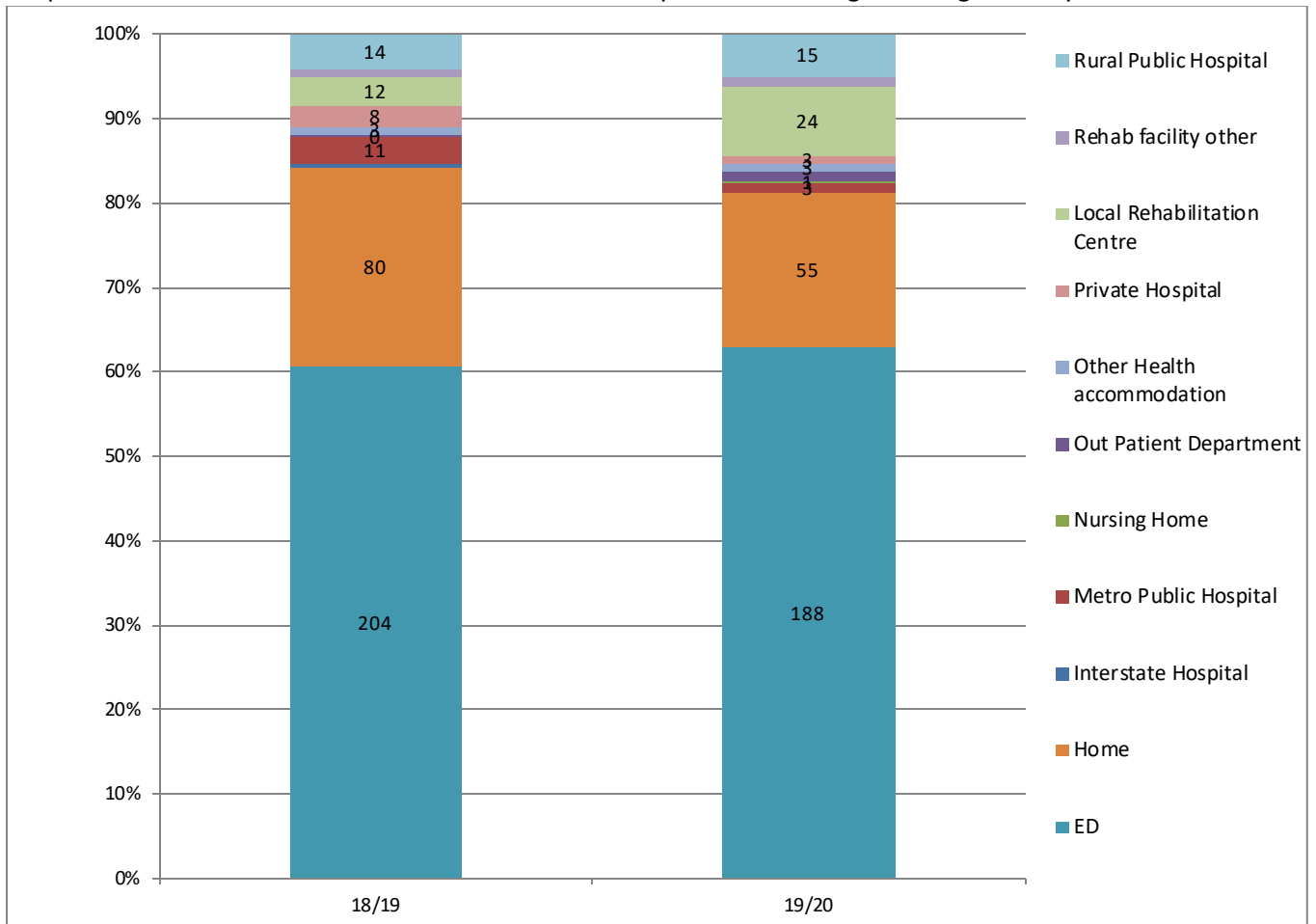


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Graph-15 Principal diagnosis of established SCI patients discharged during financial years

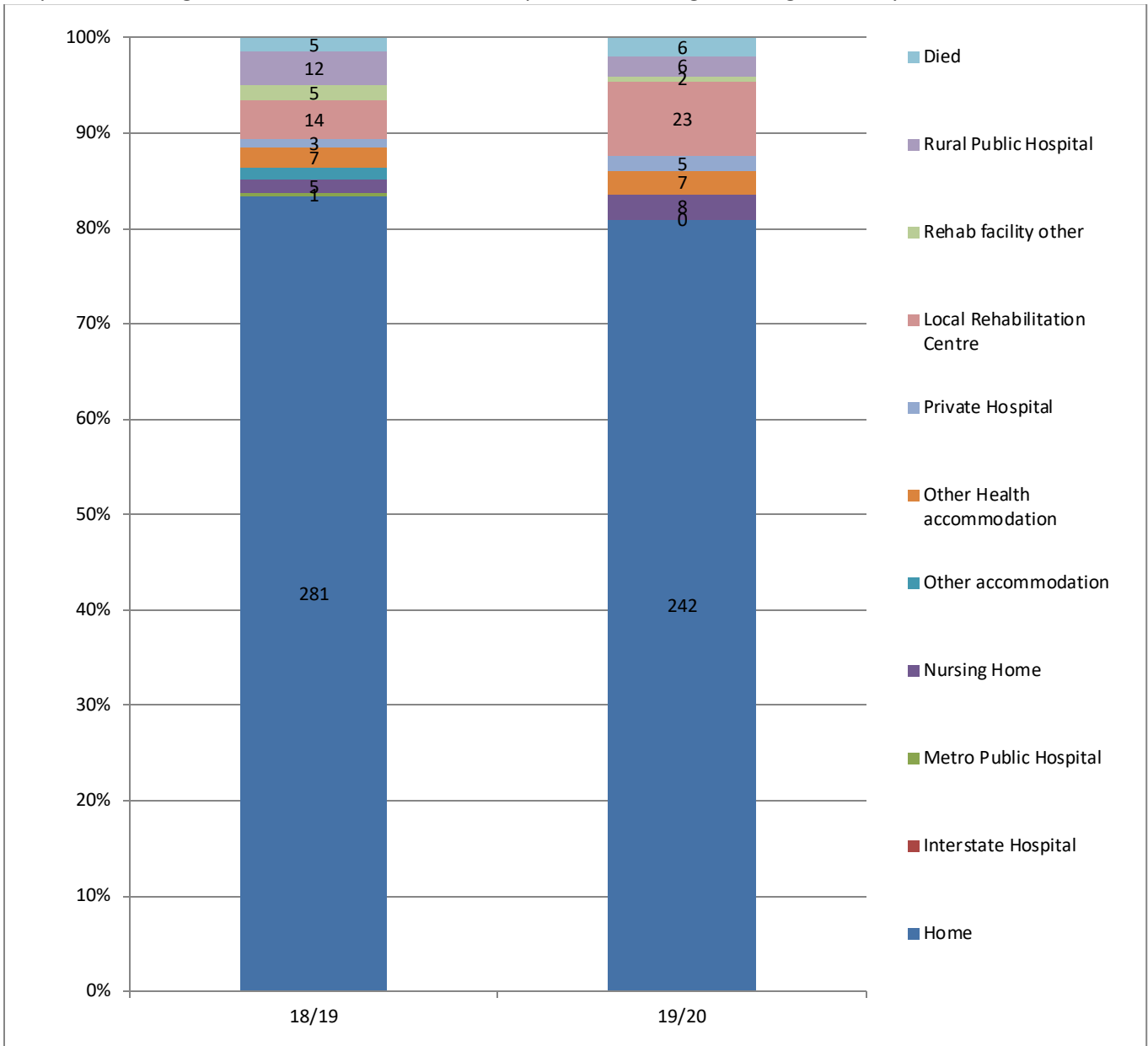


Graph-16 Referral source readmission of established SCI patients discharged during financial years

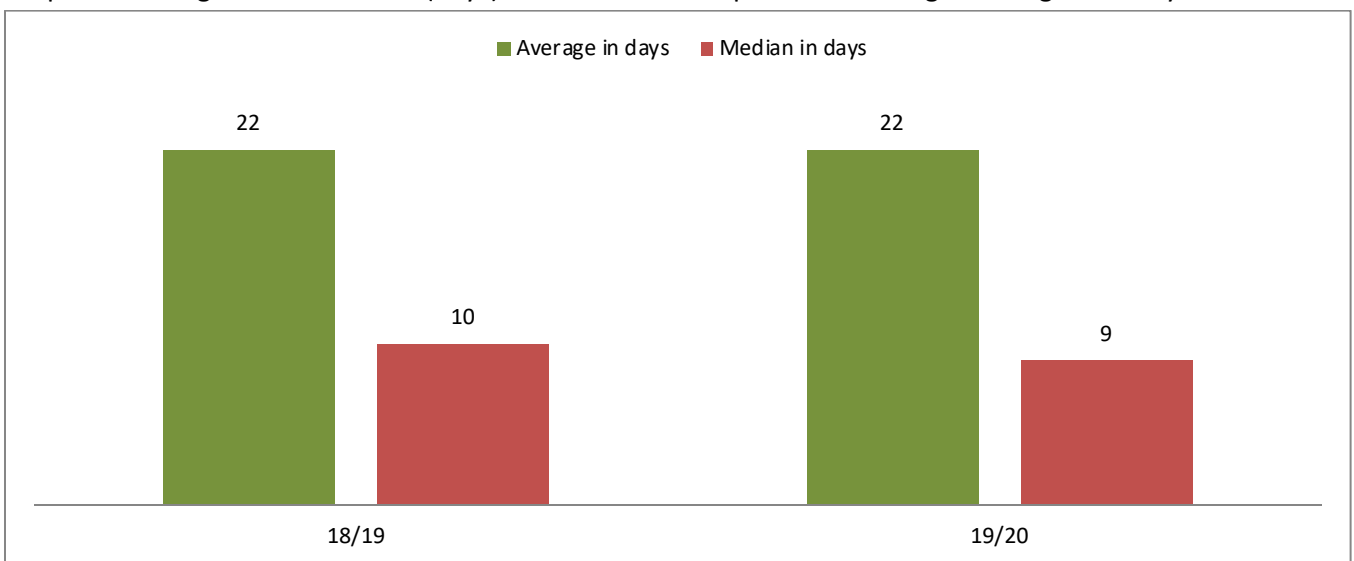


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Graph-17 Discharged destination of established SCI patients discharged during financial years



Graph-18 Average and median LoS (days) for established SCI patients discharged during financial years



## NSW STATE SPINAL CORD INJURY SERVICE (SSCIS) FINANCIAL YEAR REPORT

### DATA ANALYSIS OVERVIEW – REHABILITATION OF NEW SPINAL CORD INJURIES

In the financial year 2019/2020 a total of **121** patients with a new SCI were managed and discharged following rehabilitation from the SSCIS SCI Rehabilitation Units at the Prince of Wales Hospital and the Royal Rehabilitation Sydney. This was an increase in the number discharged patients, compared with the previous financial year (111 to 121).

- Traumatic versus non-traumatic: 64.5% (78 cases) were traumatic and 35.5% (43 cases) were non-traumatic. There was an increase in percentage of traumatic from 50.5% to 64.5% and a reduction in non-traumatic SCI from 49.5% to 35.5%.
- Male versus female: 70% of all new SCI patients were male and 30% female. This ratio of male versus female was almost the same compared to the previous financial years.
- Neurological level of injury on admission to rehabilitation:
  - Incomplete tetraplegia - n=58 or 47% - an increase from 38%
  - Incomplete paraplegia - n=40 or 33% - a decrease from 41%
  - Complete paraplegia - n=15 or 12% - a decrease from 14%
  - Complete tetraplegia - n=8 or 7% - same.
- Causes of injury:
  - Non-traumatic decreased from 49.5% to 36%
  - Falls related increased from 13% to 26%
  - Transport related decreased from 24% to 21%
  - Sports related decreased from 12% to 8%
  - Other causes of injury increased from 2% to 9%.
- Referral source:
  - 86% of referrals were from an acute SCI units in a SSCIS hospital (RNSH / POWH)
  - 5% (down from 8%) from other metropolitan hospitals
  - 3% (remained the same) from rural public hospitals and private hospitals each
  - 1% (remained the same) from interstate hospitals.
- Discharge destination for patients leaving the SCI rehabilitation units:
  - 71% (down from 79%) were discharge home as their final destination
  - 7% (up from 2%) to rural public hospitals
  - 4% (down from 8%) transferred to a nursing home
  - 4% (up from 3%) to private hospitals
  - 4% (remained the same) transferred to interstate hospitals
  - 3% (remained the same) metropolitan public hospitals
- Length of stay (LOS) in the SCI rehabilitation unit:
  - Average LOS was 122 days, there was an increase from 111 days.
  - Median LOS was 110 days, there was an increase from 91 days.
  - The LOS is calculated from the date a patient is admitted to the SCI rehabilitation unit to the date they are discharged from the unit.



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### SSCIS ACUTE REHABILITATION DATA IN FINANCIAL YEARS

	14/15		15/16		16/17		17/18		18/19		19/20	
	No	%	No	%	No	%	No	%	No	%	No	%
<b>Admitted patients</b>	<b>94</b>		<b>104</b>		<b>100</b>		<b>108</b>		<b>118</b>		<b>119</b>	
<b>Discharged patients</b>	<b>91</b>		<b>107</b>		<b>96</b>		<b>112</b>		<b>111</b>		<b>121</b>	
<b>Aetiology of injury</b>												
Traumatic	66	72.5%	82	76.6%	66	68.8%	69	61.6%	56	50.5%	78	64.5%
Non traumatic	25	27.5%	25	23.4%	30	31.3%	43	38.4%	55	49.5%	43	35.5%
<b>Gender</b>												
Male	68	74.7%	79	73.8%	73	76.0%	72	64.3%	77	69.4%	85	70.2%
Female	23	25.3%	28	26.2%	23	24.0%	40	35.7%	34	30.6%	36	29.8%
<b>Spinal impairment at rehab admission</b>												
Tetraplegia	45	49.5%	50	46.7%	45	46.9%	52	46.4%	50	45.0%	66	54.5%
Paraplegia	46	50.5%	57	53.3%	51	53.1%	60	53.6%	61	55.0%	55	45.5%
<b>Level of injury at rehab admission</b>												
Cervical	45	49.5%	50	46.7%	45	46.9%	52	46.4%	50	45.0%	66	54.5%
Thoracic	33	36.3%	46	43.0%	41	42.7%	51	45.5%	53	47.7%	44	36.4%
Lumbar	12	13.2%	10	9.3%	10	10.4%	9	8.0%	8	7.2%	10	8.3%
Sacral	1	1.1%	1	0.9%	0	0.0%	0	0.0%	0	0.0%	1	0.8%
<b>Extent of injury at rehab admission</b>												
Complete	33	36.3%	33	30.8%	33	34.4%	32	28.6%	24	21.6%	23	19.0%
Incomplete	58	63.7%	74	69.2%	63	65.6%	80	71.4%	87	78.4%	98	81.0%
<b>ASIA at rehab admission</b>												
ASIA A	33	36.3%	33	30.8%	33	34.4%	32	28.6%	24	21.6%	23	19.0%
ASIA B	13	14.3%	14	13.1%	13	13.5%	19	17.0%	13	11.7%	14	11.6%
ASIA C	20	22.0%	23	21.5%	23	24.0%	22	19.6%	31	27.9%	33	27.3%
ASIA D	25	27.5%	37	34.6%	27	28.1%	39	34.8%	43	38.7%	51	42.1%
<b>Neurological categories at rehab admission</b>												
Complete paraplegia	25	27.5%	27	25.2%	23	24.0%	26	23.2%	16	14.4%	15	12.4%
Incomplete paraplegia	21	23.1%	30	28.0%	28	29.2%	34	30.4%	45	40.5%	40	33.1%
Complete tetraplegia	8	8.8%	6	5.6%	10	10.4%	7	6.3%	8	7.2%	8	6.6%
Incomplete tetraplegia	37	40.7%	44	41.1%	35	36.5%	45	40.2%	42	37.8%	58	47.9%
<b>Spinal impairment at rehab discharge</b>												
Tetraplegia	42	46.2%	48	44.9%	43	44.8%	50	44.6%	51	45.9%	63	52.1%
Paraplegia	48	52.7%	58	54.2%	50	52.1%	60	53.6%	59	53.2%	57	47.1%
No deficit	1	1.1%	1	0.9%	3	3.1%	1	0.9%	1	0.9%	0	0.0%
No data	0	0.0%	0	0.0%	0	0.0%	1	0.9%	0	0.0%	1	0.8%
<b>Level of injury at rehab discharge</b>												
Cervical	42	46.2%	48	44.9%	43	44.8%	50	44.6%	51	45.9%	63	52.1%
Thoracic	34	37.4%	45	42.1%	41	42.7%	49	43.8%	48	43.2%	45	37.2%
Lumbar	13	14.3%	12	11.2%	7	7.3%	11	9.8%	11	9.9%	11	9.1%
Sacral	1	1.1%	1	0.9%	2	2.1%	0	0.0%	0	0.0%	1	0.8%
No deficit	1	1.1%	1	0.9%	3	3.1%	1	0.9%	1	0.9%	0	0.0%
No data	0	0.0%	0	0.0%	0	0.0%	1	0.9%	0	0.0%	1	0.8%
<b>Extent of injury at rehab discharge</b>												
Complete	32	35.2%	30	28.0%	27	28.1%	30	26.8%	18	16.2%	18	14.9%
Incomplete	58	63.7%	76	71.0%	66	68.8%	80	71.4%	92	82.9%	102	84.3%
No deficit	1	1.1%	1	0.9%	3	3.1%	1	0.9%	1	0.9%	0	0.0%
No data	0	0.0%	0	0.0%	0	0.0%	1	0.9%	0	0.0%	1	0.8%

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	14/15		15/16		16/17		17/18		18/19		19/20	
	No	%	No	%	No	%	No	%	No	%	No	%
<b>Discharged patients</b>	<b>91</b>		<b>107</b>		<b>96</b>		<b>112</b>		<b>111</b>		<b>121</b>	
<b>ASIA at rehab discharge</b>												
ASIA A	32	35.2%	30	28.0%	27	28.1%	30	26.8%	18	16.2%	18	14.9%
ASIA B	10	11.0%	11	10.3%	14	14.6%	15	13.4%	11	9.9%	14	11.6%
ASIA C	20	22.0%	18	16.8%	17	17.7%	18	16.1%	22	19.8%	27	22.3%
ASIA D	28	30.8%	47	43.9%	35	36.5%	47	42.0%	59	53.2%	61	50.4%
ASIA E	1	1.1%	1	0.9%	3	3.1%	1	0.9%	1	0.9%	0	0.0%
No data	0	0.0%	0	0.0%	0	0.0%	1	0.9%	0	0.0%	1	0.8%
<b>Neurological categories at rehab discharge</b>												
Complete paraplegia	24	26.4%	24	22.4%	20	20.8%	24	21.4%	11	9.9%	14	11.6%
Incomplete paraplegia	23	25.3%	34	31.8%	30	31.3%	36	32.1%	48	43.2%	43	35.5%
Complete tetraplegia	8	8.8%	6	5.6%	8	8.3%	6	5.4%	8	7.2%	5	4.1%
Incomplete tetraplegia	34	37.4%	42	39.3%	35	36.5%	44	39.3%	43	38.7%	58	47.9%
No Deficit	1	1.1%	1	0.9%	3	3.1%	1	0.9%	1	0.9%	0	0.0%
No data	0	0.0%	0	0.0%	0	0.0%	1	0.9%	0	0.0%	1	0.8%
<b>Age at spinal cord injury</b>												
15 - 24 yrs.	9	9.9%	11	10.3%	11	11.5%	10	8.9%	10	9.0%	10	8.3%
25 - 34 yrs.	14	15.4%	13	12.1%	6	6.3%	16	14.3%	16	14.4%	14	11.6%
35 - 44 yrs.	11	12.1%	10	9.3%	13	13.5%	16	14.3%	10	9.0%	18	14.9%
45 - 54 yrs.	15	16.5%	17	15.9%	18	18.8%	18	16.1%	21	18.9%	17	14.0%
55 - 64 yrs.	19	20.9%	19	17.8%	24	25.0%	19	17.0%	18	16.2%	23	19.0%
65 - 74 yrs.	17	18.7%	27	25.2%	10	10.4%	20	17.9%	19	17.1%	26	21.5%
75 - 84 yrs.	6	6.6%	10	9.3%	10	10.4%	11	9.8%	13	11.7%	12	9.9%
85 yrs. or more	0	0.0%	0	0.0%	4	4.2%	2	1.8%	4	3.6%	1	0.8%
<b>Cause of spinal cord injury <sup>(1)</sup></b>												
<b>Falls related</b>	<b>22</b>	<b>24.2%</b>	<b>31</b>	<b>29.0%</b>	<b>30</b>	<b>31.3%</b>	<b>27</b>	<b>24.1%</b>	<b>14</b>	<b>12.6%</b>	<b>32</b>	<b>26.4%</b>
1 metre and more	12	54.5%	14	45.2%	9	30.0%	15	55.6%	7	50.0%	8	25.0%
Less than 1 metre	10	45.5%	17	54.8%	21	70.0%	12	44.4%	7	50.0%	24	75.0%
<b>Transport</b>	<b>23</b>	<b>25.3%</b>	<b>36</b>	<b>33.6%</b>	<b>21</b>	<b>21.9%</b>	<b>28</b>	<b>25.0%</b>	<b>27</b>	<b>24.3%</b>	<b>25</b>	<b>20.7%</b>
Motor Vehicle Accident	10	43.5%	9	25.0%	6	28.6%	6	21.4%	10	37.0%	13	52.0%
Motor Bike Accident	8	34.8%	13	36.1%	8	38.1%	9	32.1%	8	29.6%	5	20.0%
Quad Bike Accident	1	4.3%	1	2.8%	0	0.0%	2	7.1%	3	11.1%	0	0.0%
Bicycle	4	17.4%	8	22.2%	5	23.8%	8	28.6%	3	11.1%	5	20.0%
Boat related	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	4.0%
Pedestrian	0	0.0%	3	8.3%	2	9.5%	2	7.1%	2	7.4%	1	4.0%
Aircraft	0	0.0%	1	2.8%	0	0.0%	1	3.6%	1	3.7%	0	0.0%
Railway	0	0.0%	1	2.8%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
<b>Sport related</b>	<b>12</b>	<b>13.2%</b>	<b>9</b>	<b>8.4%</b>	<b>13</b>	<b>13.5%</b>	<b>6</b>	<b>5.4%</b>	<b>13</b>	<b>11.7%</b>	<b>10</b>	<b>8.3%</b>
Sport-aerial	1	8.3%	1	11.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sport-football	3	25.0%	0	0.0%	5	38.5%	1	16.7%	3	23.1%	1	10.0%
Sport-horse related	1	8.3%	2	22.2%	1	7.7%	0	0.0%	1	7.7%	1	10.0%
Sport-water	6	50.0%	4	44.4%	5	38.5%	2	33.3%	8	61.5%	6	60.0%
Sport-other	0	0.0%	1	11.1%	1	7.7%	2	33.3%	0	0.0%	2	20.0%
Sport-snow	1	8.3%	1	11.1%	1	7.7%	1	16.7%	1	7.7%	0	0.0%
<b>Other type of injuries</b>	<b>9</b>	<b>9.9%</b>	<b>6</b>	<b>5.6%</b>	<b>2</b>	<b>2.1%</b>	<b>8</b>	<b>7.1%</b>	<b>2</b>	<b>1.8%</b>	<b>11</b>	<b>9.1%</b>
Firearms	2	22.2%	0	0.0%	1	50.0%	1	12.5%	0	0.0%	0	0.0%
Struck by blunt object	2	22.2%	1	16.7%	0	0.0%	1	12.5%	1	50.0%	3	27.3%
Stuck by sharp object	0	0.0%	1	16.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

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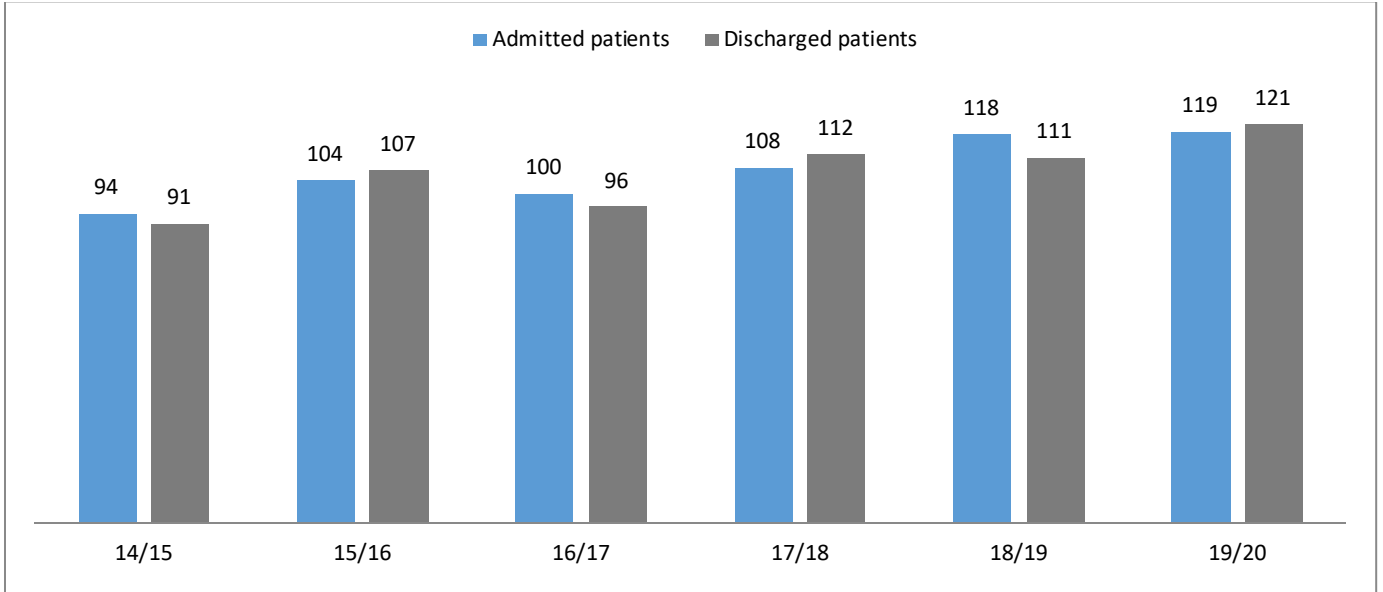
	14/15		15/16		16/17		17/18		18/19		19/20	
	No	%	No	%	No	%	No	%	No	%	No	%
<b>Discharged patients</b>	<b>91</b>		<b>107</b>		<b>96</b>		<b>112</b>		<b>111</b>		<b>121</b>	
Jumping	5	55.6%	4	66.7%	0	0.0%	3	37.5%	0	0.0%	6	54.5%
Other	0	0.0%	0	0.0%	1	50.0%	3	37.5%	1	50.0%	2	18.2%
<b>Non traumatic injury</b>	<b>25</b>	<b>27.5%</b>	<b>25</b>	<b>23.4%</b>	<b>30</b>	<b>31.3%</b>	<b>43</b>	<b>38.4%</b>	<b>55</b>	<b>49.5%</b>	<b>43</b>	<b>35.5%</b>
Infectious & inflammatory	6	24.0%	8	32.0%	7	23.3%	14	32.6%	19	34.5%	11	25.6%
Spinal vascular disorder	9	36.0%	10	40.0%	13	43.3%	17	39.5%	4	7.3%	16	37.2%
Spinal stenosis	1	4.0%	0	0.0%	2	6.7%	2	4.7%	3	5.5%	1	2.3%
Spinal disc disorder	2	8.0%	0	0.0%	1	3.3%	0	0.0%	3	5.5%	2	4.7%
Postop spinal cord injury	5	20.0%	2	8.0%	1	3.3%	6	14.0%	9	16.4%	5	11.6%
Spinal neoplasm	1	4.0%	3	12.0%	3	10.0%	2	4.7%	7	12.7%	6	14.0%
Spinal other	1	4.0%	2	8.0%	3	10.0%	2	4.7%	10	18.2%	2	4.7%
<b>Referral source</b>												
SSCIS Acute Hospitals	79	86.8%	92	86.0%	85	88.5%	98	87.5%	94	84.7%	104	86.0%
Metro public hospital (other)	5	5.5%	7	6.5%	4	4.2%	3	2.7%	9	8.1%	6	5.0%
Interstate hospital	2	2.2%	2	1.9%	1	1.0%	0	0.0%	1	0.9%	1	0.8%
Rural public hospital	1	1.1%	3	2.8%	5	5.2%	8	7.1%	3	2.7%	4	3.3%
Overseas hospital	1	1.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Nursing Home	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.8%
Private hospital	3	3.3%	2	1.9%	1	1.0%	2	1.8%	3	2.7%	4	3.3%
Rehab facility other	0	0.0%	0	0.0%	0	0.0%	1	0.9%	0	0.0%	1	0.8%
Home	0	0.0%	1	0.9%	0	0.0%	0	0.0%	1	0.9%	0	0.0%
<b>Discharge destination</b>												
Home	67	73.6%	91	85.0%	69	71.9%	85	75.9%	88	79.3%	86	71.1%
Interstate hospital	3	3.3%	1	0.9%	5	5.2%	3	2.7%	5	4.5%	5	4.1%
Metro public hospital	3	3.3%	1	0.9%	4	4.2%	0	0.0%	3	2.7%	3	2.5%
Nursing home	4	4.4%	8	7.5%	6	6.3%	9	8.0%	9	8.1%	5	4.1%
Other accommodation	7	7.7%	0	0.0%	1	1.0%	2	1.8%	0	0.0%	3	2.5%
Other health accommodation	2	2.2%	1	0.9%	2	2.1%	2	1.8%	0	0.0%	1	0.8%
Overseas hospital	0	0.0%	2	1.9%	2	2.1%	2	1.8%	1	0.9%	1	0.8%
Private hospital	0	0.0%	0	0.0%	1	1.0%	3	2.7%	3	2.7%	5	4.1%
Royal Rehab Private	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.7%
Rural public hospital	5	5.5%	2	1.9%	5	5.2%	2	1.8%	2	1.8%	9	7.4%
Died	0	0.0%	1	0.9%	1	1.0%	2	1.8%	0	0.0%	1	0.8%
<b>Length of stay with outliers<sup>(2)</sup></b>												
No of discharged patient	91		107		96		110		111		121	
Average in days	126		127		126		128		111		122	
Median in days	109		111		106		104		91		110	
Range in days	6 - 464		3 - 370		3 - 441		9 - 511		4 - 502		5 - 546	
<b>Length of stay without outliers<sup>(2)</sup></b>												
No of discharged patient	89		104		91		102		108		118	
Average in days	123		126		118		111		106		120	
Median in days	109		111		103		101		91		110	
Range in days	8 - 341		13 - 322		7 - 357		9 - 364		7 - 321		21 - 351	

(1)- For each cause of injury (e.g. Transport, falls etc.) number of sub-categories are listed. The % figure listed for the cause (e.g. Transport) represents the % of transport injuries out of the total injuries for that year. The % figure listed for sub-category (e.g. MVA etc.) Represents the % of MVA injuries out of the total transport injuries for that year.

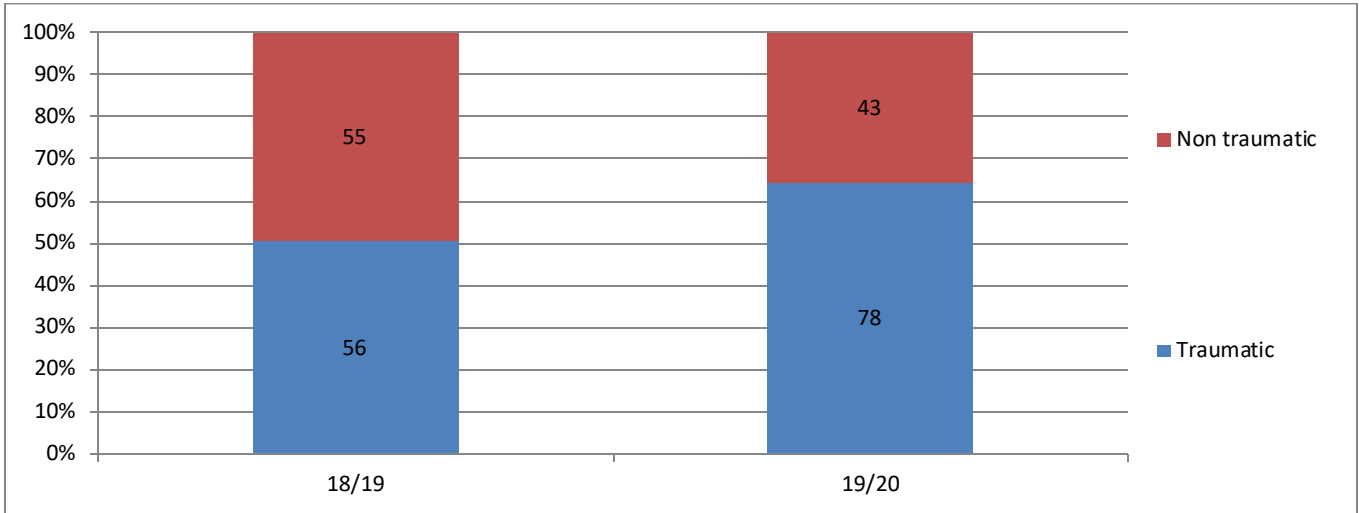
(2)- Outliers are patients who died and patients with Loss less than 7 and more than 365 days.

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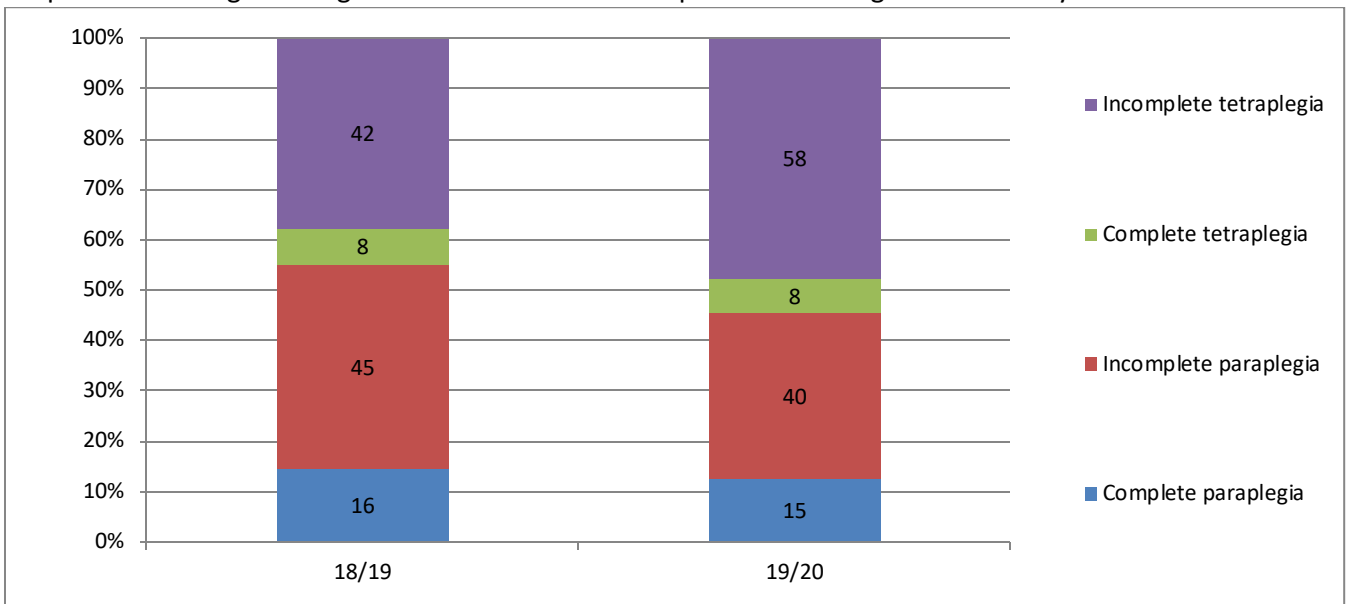
Graph-19 Total admitted and discharged patients in SSCIS Rehabilitation SCI Units in financial years



Graph-20 Aetiology of new SCI patients discharged from rehabilitation SCIU in financial years

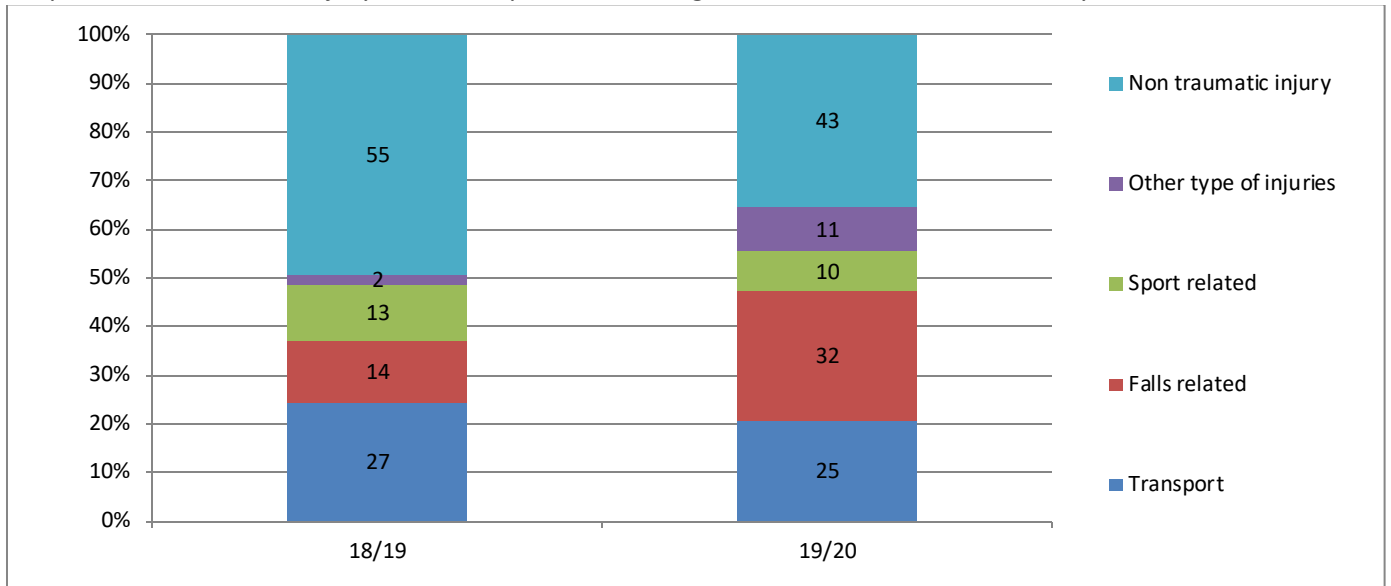


Graph-21 Neurological categories at rehab admission of patients discharged in financial years

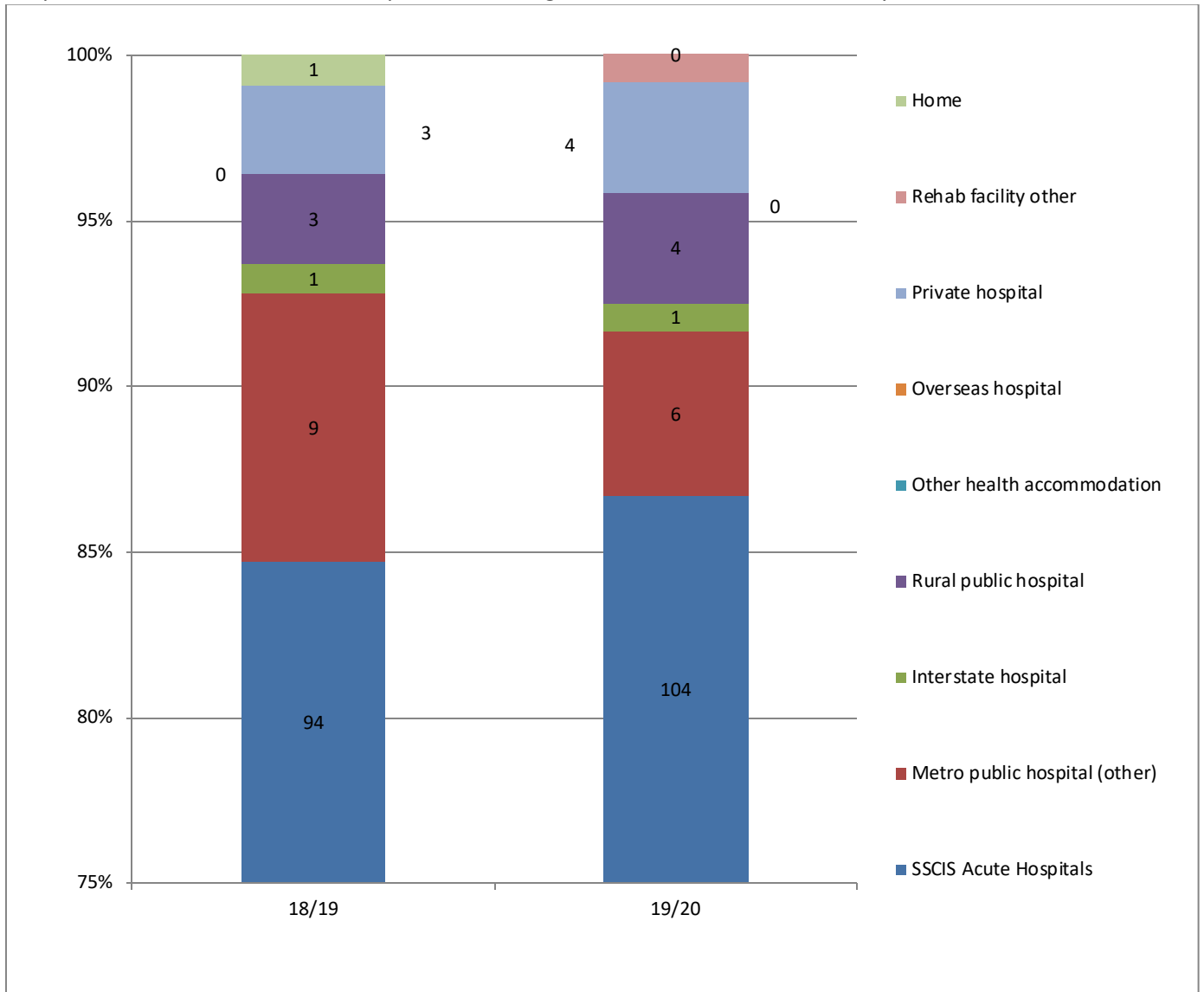


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Graph-22 Mechanism of injury of new SCI patient discharged from rehab SCIU in financial years

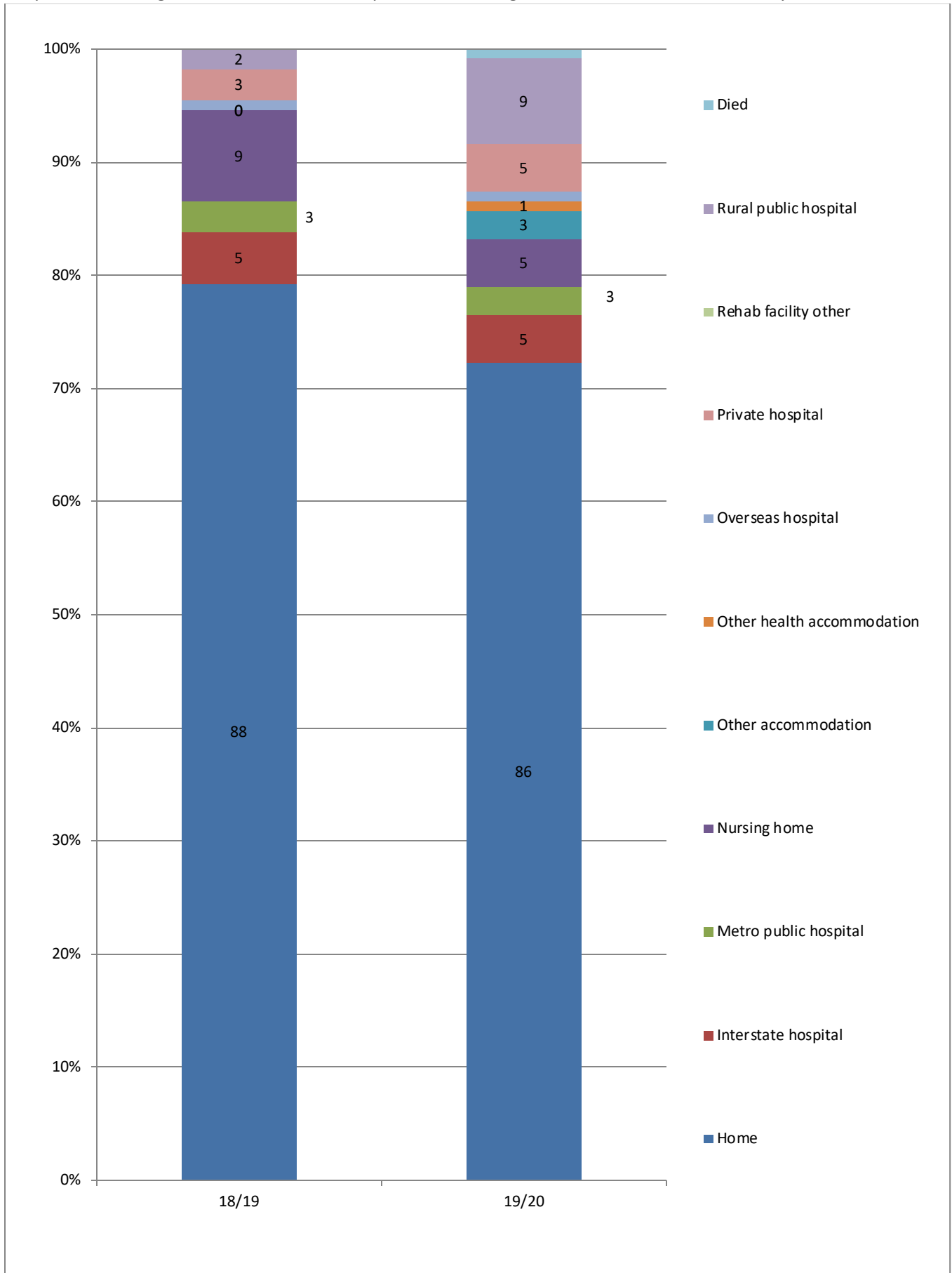


Graph-23 Referral source of new SCI patient discharged from rehab SCIU in financial years



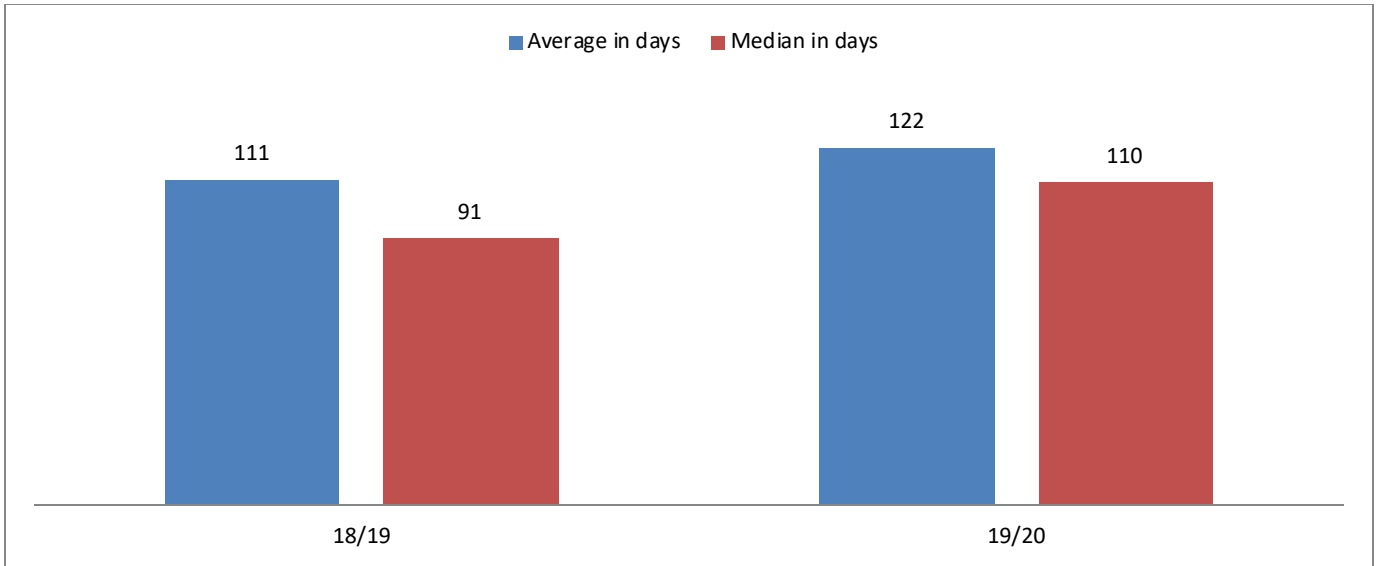
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Graph- 24 Discharge destination of new SCI patients discharged from rehab SCIU in financial years



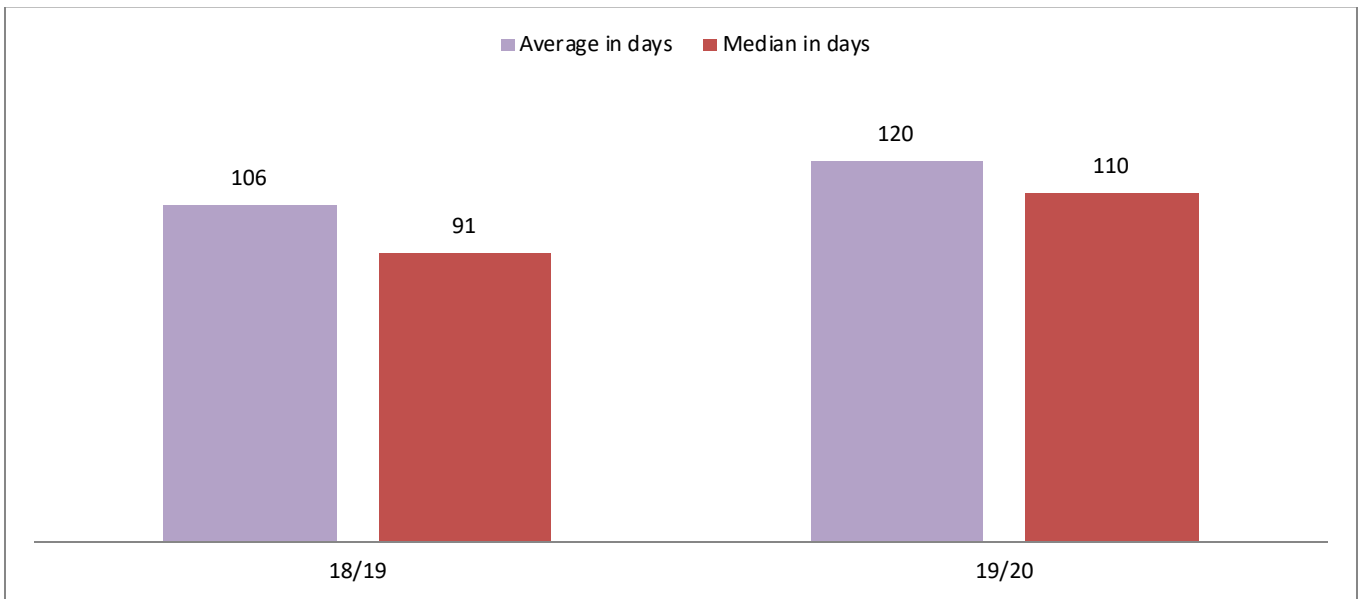
## NSW STATE SPINAL CORD INJURY SERVICE (SSCIS) FINANCIAL YEAR REPORT

Graph-25 Average and median length of stays of discharged patients from Rehab SCIUs in financial years with outliers (\*)



(\*)- Outliers are patients who died and patients with length of stay (LOS) less than 7 and more than 365 days.

Graph-26 Average and median length of stays of discharged patients from Rehab SCIUs in financial years without outliers (\*)



(\*)- Outliers are patients who died and patients with length of stay (LOS) less than 7 and more than 365 days.