



AROC Ambulatory National Report

January 2011 – December 2011



**Australasian Faculty
of Rehabilitation
Medicine**



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Why ambulatory benchmarking?

- Ambulatory setting is integral to provision of high quality rehabilitation across the sector
- Services have/are developing innovative models of service delivery that place less reliance on traditional inpatient care while continuing to offer quality patient outcomes
- It is important that benchmarking initiatives mirror service provision – thus AROC’s extension to ambulatory data collection
- Benchmarking within the ambulatory setting will allow services to monitor comparative effectiveness of their model of ambulatory care against other models
- Stand alone ambulatory providers have not had opportunity to access national benchmarking previously
- Payer/funder focus has shifted to acknowledge relevance and importance of ambulatory rehabilitation services
- National Partnership Agreements require a commitment to participate in work with national data collection agencies to collect and evaluate data on subacute care

Definition of ambulatory rehabilitation

- Starts with a multi-disciplinary assessment
- Is multi-disciplinary, but all therapies may not be delivered concurrently
- Is goal oriented - includes goal setting and review
- The program of care is time limited
- Is delivered in an ambulatory setting, either centre or community based
- Ambulatory rehabilitation may occur as:
 - The continuation of an inpatient episode of rehabilitation
 - A rehabilitation program provided solely in an ambulatory setting

Data collection

- The ambulatory dataset (Version 1) is based on the AROC inpatient dataset, modified to include items that relate specifically to evaluating the efficacy of ambulatory rehabilitation programs
- The dataset consists of 38 items, and includes demographic, clinical and episode specific information
- Data is collected to reflect the program of rehabilitation, thus an 'episode' is defined by the initial and the final service contact
- The collection covers a range of diverse care models - centre based, same day admitted, coordinated outpatient, rehabilitation in the home, inreach/outreach, early discharge therapy, preventative management, etc
- The range of models is matched by equally diverse impairment groups; amputee, stroke, brain injury, orthopaedic, reconditioning
- The challenge in developing the data set was to include an outcome tool that could best address the diverse range of service models and impairment groups represented in ambulatory rehabilitation, with a minimum burden on resources.
- The over-arching outcome tool included in the dataset is the Australian Modified Lawton's Instrumental Activities of Daily Living (IADL) scale
- It is thought that over time, other impairment or discipline specific outcomes tools will be added to the dataset to provide more outcome specificity by cohort.

The Australian Modified Lawton's

- The Australian Modified Lawton's represents a sensitive measure of the outcome of ambulatory rehabilitation as it relates to instrumental tasks, such as a patient's ability to do their own shopping, cleaning, cooking, manage their finances, skills that demonstrate their independence in the wider context
- In general most participants in ambulatory care have already demonstrated a degree of functional independence, thus a straight ADL tool (such as the FIM), is not an appropriate outcome measure in this setting
- The Lawton's tool is quick and easy to administer, requires minimal training, and is not discipline or impairment specific
- The Lawton's is endorsed by AFRM as the over-arching ambulatory benchmarking outcome tool of choice
- It has demonstrated validity and reliability in measurement of outcomes
Green J, Eagar K, Owen A, Gordon R and Quinsey K (2006). Towards a Measure of Function for Home and Community Care Services in Australia: Part II – Evaluation of the Screening Tool and Assessment Instruments. Australian Journal of Primary Health 12(1), 82-90
- The Lawton's is not suggested to replace any service or impairment specific outcome measures that services may already collect or are considering collecting, but to provide a platform from which to launch a national benchmarking program with the expectation of further development over time.

Interpretation of results

- This descriptive report includes analysis of data collected and submitted by participating ambulatory rehabilitation services during the 2011 calendar year
- As this represents a small proportion of all ambulatory rehabilitation services and models of service delivery, care should be taken when interpreting the results
- It is anticipated that as the collection and reporting of the AROC ambulatory clinical dataset increases, more detailed comparisons will be able to be made
- For the purposes of this report all analysis is at the episode level and is reported as national data

Definition of terms

Episode

The program of ambulatory rehabilitation

Elapsed time

The elapsed time describes the number of days from commencement to end of an ambulatory rehabilitation program. It is calculated as the episode end date minus the start date

Days Seen

Days seen is the number of days within an episode of ambulatory rehabilitation on which an occasion of service has been provided

Occasions of Service (OOS)

An occasion of service is any therapy session and /or therapist contact within an episode. A patient may have several occasions of service on a 'day seen' and these may be delivered by the same or different staff type. Total occasions of service reflects the total number of therapy sessions provided to the patient during those visits. For example:

Mr Jones attends the program on Monday, Wednesday and Friday. On Monday he sees the physio and also attends hydrotherapy. On Wednesday he has a group exercise session, sees the OT and the speech pathologist. On Friday he sees the physio and attends hydrotherapy again. This program continues for 6 weeks. At week 7 his program is reviewed and he only needs to attend group exercise therapy and hydrotherapy twice a week until the program concludes at week 12.

- **The total number of days seen in this instance is $(3 \times 6) + (2 \times 6) = 30$**
- **The total occasions of service in this instance is $(7 \times 6) + (4 \times 6) = 66$**

Definition of terms

Therapy type

Reflects the type of therapy the patient is receiving and is collected by staff type. Where a single staff type provides more than one therapy, e.g. hydrotherapy provided/supervised by a physiotherapist, the staff type selected should reflect the type of therapy session the patient is receiving.

ADL

Activities of daily living describe a person's level of functioning in basic physical activities such as bathing, dressing, transferring, toileting, continence, eating, and walking

IADL

Instrumental activities of daily living (also known as extended or domestic activities of daily living), describe tasks that enable a person to live independently in the community and include, but not are limited to, light housework, preparing meals, taking medications, shopping for groceries, using the telephone, and managing money

Lawton's score

The score recorded using the Australian Modified Lawton's Instrumental Activities of Daily Living (IADL) Scale at both the beginning and end of an ambulatory rehabilitation program

Valid Lawton's score

A valid Lawton's score requires all items within the scale to have a value assigned and be completed for both the episode begin and episode end assessments

Lawton's change

The calculated difference between the valid Lawton's score at the begin and the end of the ambulatory rehabilitation episode

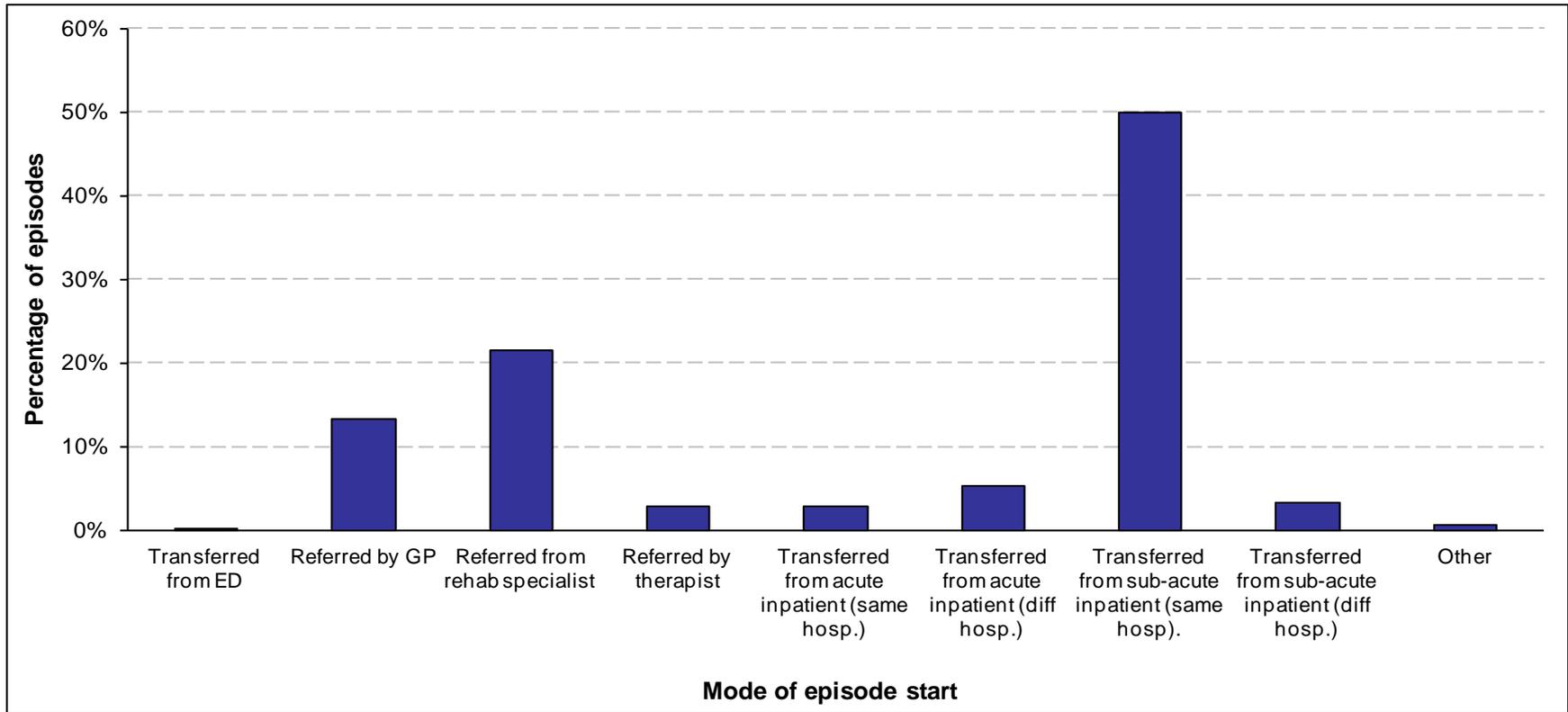
Data exclusions

- Demographic and episode start information describes all episodes where information was reported
- An episode is considered “complete” for the purpose of calculating outcome statistics in this report when mode of episode end is discharge/case closure
- Outcome measures are based on completed episodes, as defined above, and may be further reduced by missing data

Distribution of episodes and facilities

	Public	Private	Total
Facilities			
NSW	2	9	11
VIC	0	5	5
SA	2	1	3
ACT	0	1	1
QLD	0	2	2
All Facilities	4	18	22
Episodes			
NSW	50	2,197	2,247
VIC	0	1,918	1,918
SA	936	20	956
ACT	0	319	319
QLD	0	134	134
All Episodes	986	4,588	5,574

Episode source



Episode source

Mode of Episode Begin	No.	%
Transferred from ED	9	0.2
Referred by GP	719	13.3
Referred from rehab specialist	1,165	21.5
Referred by therapist	160	3.0
Transferred from acute inpatient (same hosp.)	156	2.9
Transferred from acute inpatient (diff hosp.)	288	5.3
Transferred from sub-acute inpatient (same hosp)	2,713	50.0
Transferred from sub-acute inpatient (diff hosp.)	184	3.4
Other	29	0.5
Missing	151	
Total	5,574	100.0

In the table above more than half the reported episodes began following inpatient subacute care, suggesting a continuation of rehabilitation from the inpatient setting. Approximately 38% were referred directly from the community, with a further 8% identified as referred from acute inpatient care.

Episodes by impairment

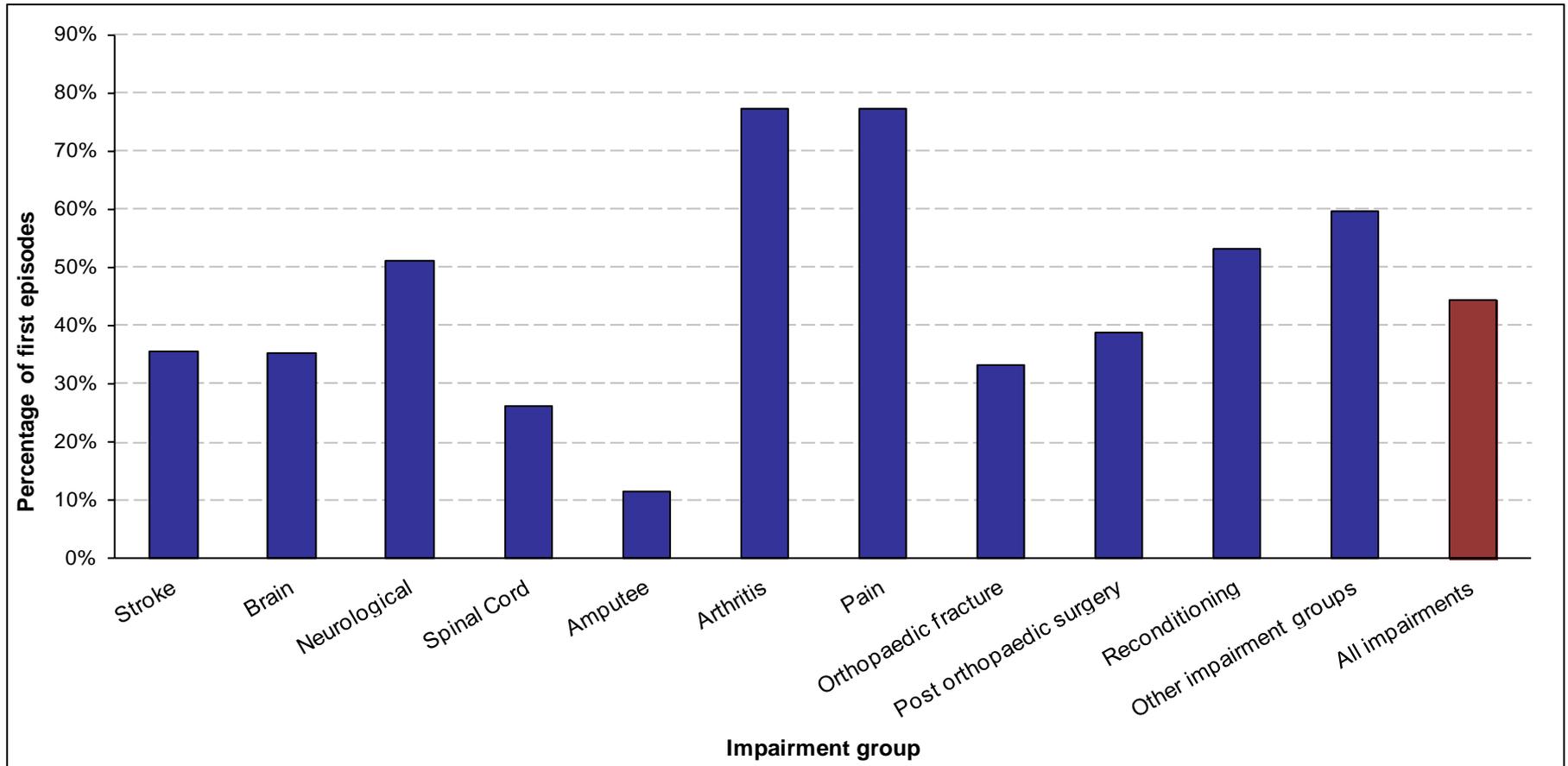
Impairment	No.	%
Stroke	426	7.7
Brain	119	2.2
Neurological	196	3.6
Spinal Cord	23	0.4
Amputee	26	0.5
Arthritis	70	1.3
Pain	347	6.3
Orthopaedic Fracture	411	7.5
Post Orthopaedic Surgery	2,795	50.7
Orthopaedic Other	117	2.1
Cardiac	94	1.7
Pulmonary	56	1.0
Burns	1	0.0
Congenital Deformities	2	0.0
Other Disabling Imp.	176	3.2
Multiple Trauma	18	0.3
Reconditioning	631	11.5
Missing	66	
All impairments	5,574	100.0

Episode type by impairment

Impairment	Episode Type								
	Same day admitted program		Outpatient		Community Patient		Missing	All Episode Types	
	No.	%	No.	%	No.	%	No.	No.	%
Stroke	202	48.2	53	12.6	164	39.1	7	426	100.0
Brain	54	47.4	15	13.2	45	39.5	5	119	100.0
Neurological	127	66.8	35	18.4	28	14.7	6	196	100.0
Spinal Cord	10	47.6	3	14.3	8	38.1	2	23	100.0
Amputee	2	8.0	3	12.0	20	80.0	1	26	100.0
Arthritis	28	41.2	40	58.8	0	0.0	2	70	100.0
Pain	177	51.3	168	48.7	0	0.0	2	347	100.0
Orthopaedic Fracture	188	46.0	131	32.0	90	22.0	2	411	100.0
Post Orthopaedic Surge	1,754	63.4	945	34.2	67	2.4	29	2,795	100.0
Orthopaedic Other	65	55.6	43	36.8	9	7.7	0	117	100.0
Cardiac	46	48.9	46	48.9	2	2.1	0	94	100.0
Pulmonary	46	85.2	7	13.0	1	1.9	2	56	100.0
Burns	0	0.0	0	0.0	1	100.0	0	1	100.0
Congenital Deformities	1	50.0	1	50.0	0	0.0	0	2	100.0
Other Disabling Imp.	175	100.0	0	0.0	0	0.0	1	176	100.0
Multiple Trauma	5	29.4	8	47.1	4	23.5	1	18	100.0
Reconditioning	424	68.7	82	13.3	111	18.0	14	631	100.0
Missing	5		25		0		36	66	
All Impairments	3,309	60.6	1,605	29.4	550	10.1	110	5,574	100.0

This table describes the distribution of impairments by ambulatory episode type. In the largest reported impairment group, post orthopaedic surgery, participating services deliver primarily Same Day Admitted programs.

First episode of rehabilitation by impairment



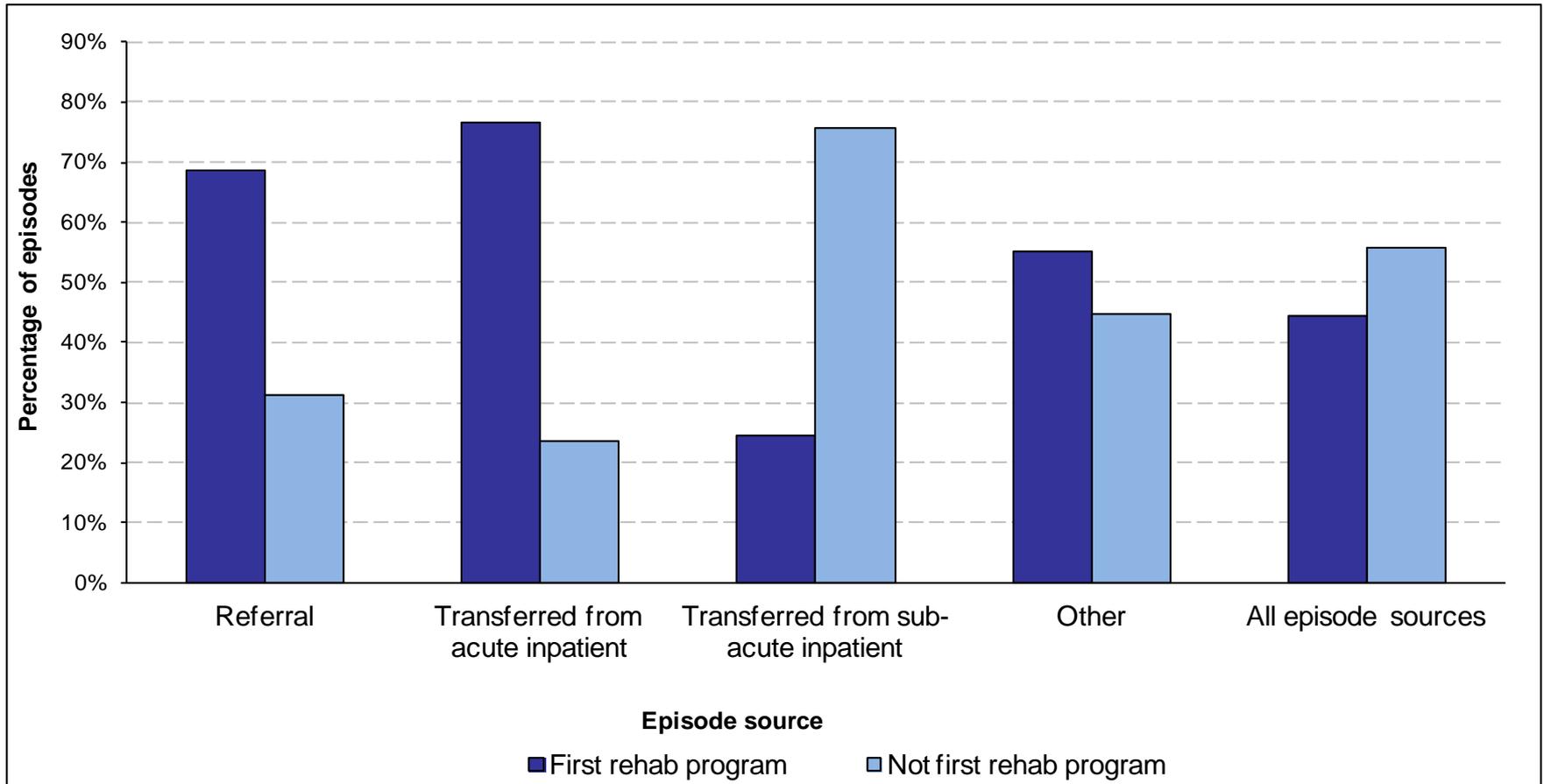
Note: "Other impairment groups" includes data for cardiac, pulmonary, burns and other impairments. Refer to Slides 14 and 15 for full impairment list.

First episode of rehabilitation by impairment

Impairment	%
Stroke	35.7%
Brain	35.3%
Neurological	51.0%
Spinal Cord	26.1%
Amputee	11.5%
Arthritis	77.1%
Pain	77.2%
Orthopaedic fracture	33.3%
Post orthopaedic surgery	38.7%
Reconditioning	53.2%
Other impairment groups	59.7%
All impairments	44.3%

Of the impairment groups with largest number of reported episodes, 44% indicate the ambulatory episode as the first rehabilitation for that impairment. The following slides describe those episodes identified as first rehabilitation against their reported episode source.

First episode of rehabilitation by episode source

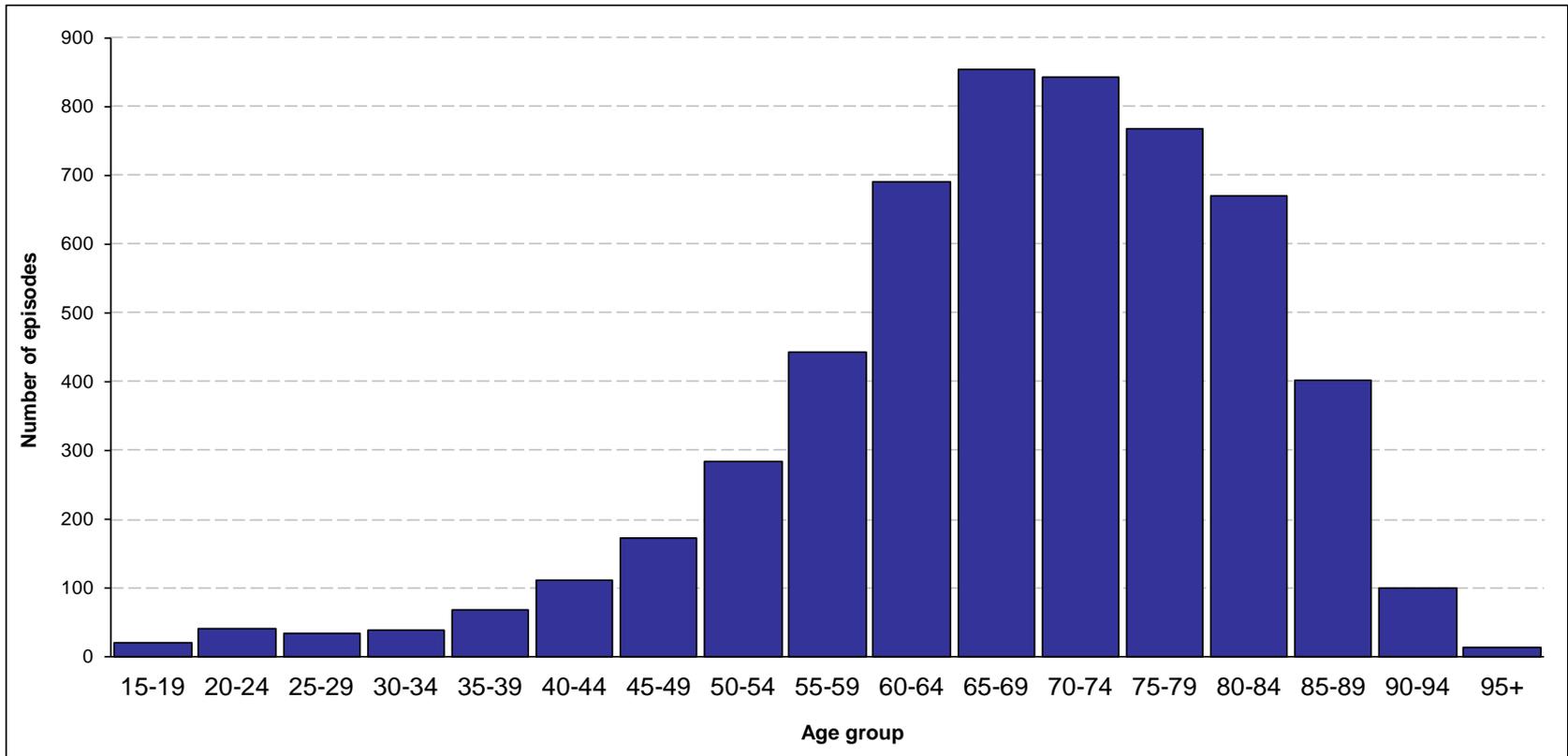


First episode of rehabilitation by episode source

First rehab program	Episode source											
	Referral		Transferred from acute inpatient		Transferred from sub-acute		Other		Missing		Total	
	No.	%	No.	%	No.	%	No.	%	No.	No.	%	
Yes	1,409	57.0	339	13.7	707	28.6	16	0.6	0	2,471	100.0	
No	644	21.8	104	3.5	2,190	74.2	13	0.4	151	3,102	100.0	
Missing	0		1		0		0		0	1		
All episodes	2,053	37.9	444	8.2	2,897	53.4	29	0.5	151	5,574	100.0	

Approximately 44% of reported episodes were identified as being first programs of rehabilitation for the impairment. Of those, about 29% described patients whose ambulatory episodes began following an episode of sub acute inpatient care.

Episodes by age group



Episodes by age group

Age Group	No.	% Cumulative %	
15-19	20	0.4%	0.4%
20-24	42	0.8%	1.1%
25-29	34	0.6%	1.7%
30-34	39	0.7%	2.4%
35-39	69	1.2%	3.7%
40-44	112	2.0%	5.7%
45-49	172	3.1%	8.8%
50-54	283	5.1%	13.9%
55-59	443	8.0%	21.9%
60-64	690	12.4%	34.3%
65-69	855	15.4%	49.7%
70-74	842	15.2%	64.8%
75-79	767	13.8%	78.7%
80-84	670	12.1%	90.7%
85-89	402	7.2%	98.0%
90-94	100	1.8%	99.8%
95+	13	0.2%	100.0%
Missing	21		
All Ages	5,574	100.0%	

Age by gender and impairment

Impairment	Male			Female			All episodes		
	No.	Mean	(95% CI)	No.	Mean	(95% CI)	No.	Mean	(95% CI)
Stroke	254	68.6	(67 - 70.2)	172	70.7	(68.7 - 72.8)	426	69.5	(68.2 - 70.7)
Brain	67	58.2	(53.8 - 62.7)	52	60.9	(56.4 - 65.5)	119	59.4	(56.2 - 62.6)
Neurological	90	59.2	(55.8 - 62.6)	106	58.6	(55.6 - 61.5)	196	58.8	(56.6 - 61.1)
Spinal Cord	14	58.6	(50.9 - 66.2)	9	53.4	(39.7 - 67.2)	23	56.6	(49.6 - 63.6)
Amputee	22	54.4	(48 - 60.7)	4	80.8	(67.7 - 93.8)	26	58.4	(51.6 - 65.2)
Arthritis	23	71.3	(66.5 - 76)	47	69.8	(65.7 - 73.8)	70	70.3	(67.1 - 73.4)
Pain	103	61.2	(58 - 64.4)	244	63.5	(61.3 - 65.6)	347	62.8	(61 - 64.6)
Orthopaedic fracture	120	67.5	(64.1 - 70.9)	291	72.3	(70.7 - 74)	411	70.9	(69.4 - 72.4)
Post orthopaedic surgery	1,015	68.5	(67.8 - 69.1)	1,780	69.0	(68.5 - 69.5)	2,795	68.8	(68.4 - 69.2)
Reconditioning	271	73.9	(72.2 - 75.7)	360	72.9	(71.3 - 74.4)	631	73.3	(72.2 - 74.5)
Other impairment groups	165	66.9	(64.5 - 69.4)	299	64.9	(63.2 - 66.7)	464	65.6	(64.2 - 67.1)
Missing	38			28			66		
All impairments	2,182	67.7	(67.1 - 68.3)	3,392	68.5	(68 - 68.9)	5,574	68.2	(67.8 - 68.5)

Indigenous status

Indigenous Status	No.	%
Aboriginal but not TSI	5	0.1%
TSI but not Aboriginal	4	0.1%
Both	5	0.1%
Neither	5,185	99.7%
Missing/Not stated	375	
All episodes	5,574	100.0%

Employment status

Employment Status	No.	%
Employed	887	16.1%
Not Employed	457	8.3%
Not in Labour Force	4,178	75.7%
Missing/Not Stated	52	
All episodes	5,574	100.0%

Usual accommodation and level of support prior to episode

Accommodation and level of support	No.	%
Private residence	5,334	98.9%
<i>Alone with no support</i>	698	13.2%
<i>Others with no support</i>	1675	31.6%
<i>Alone with support</i>	632	11.9%
<i>Others with support</i>	2163	40.9%
<i>External support</i>	125	2.4%
<i>Missing/Not Stated</i>	41	
Residential Aged Care (Low Level Care)	22	0.4%
Residential Aged Care (High Level Care)	4	0.1%
Community Group Home	4	0.1%
Boarding House	4	0.1%
Transitional	1	0.0%
Other	23	0.4%
Missing	182	
All episodes	5,574	100.0%

This table shows that of the episodes reported approximately 99% of patients attending ambulatory rehabilitation lived in private accommodation prior to their impairment, with about 55% indicating they received some type of support.

Accommodation during episode

Accommodation	No.	%
Pre Impairment accommodation	5,224	95.9%
Interim accommodation (geographical issue)	34	0.6%
Interim accommodation (increased support)	61	1.1%
Other	131	2.4%
Missing	124	
All episodes	5,574	100.0%

Of the episodes reported, there were only a small number of patients who indicated a change of residence during the period of ambulatory rehabilitation for either increased support needs or access issues, less than 5%.

Change in level of support during episode

Private residence on admission only

No change in accommodation

Level of support prior	Level of support during						All episodes
	Alone with no support	Others with no support	Alone with support	Others with support	External support	Missing / Not stated	
Alone with no support	436	15	148	91	8	0	698
Others with no support	25	1,027	12	587	20	4	1,675
Alone with support	6	3	582	35	5	1	632
Others with support	4	27	9	2,101	15	7	2,163
External support	0	1	3	9	112	0	125
Missing/Not stated	3	7	2	6	0	23	41
All episodes	474	1,080	756	2,829	160	35	5,334
Alone with no support	62.5%	2.1%	21.2%	13.0%	1.1%		100.0%
Others with no support	1.5%	61.5%	0.7%	35.1%	1.2%		100.0%
Alone with support	1.0%	0.5%	92.2%	5.5%	0.8%		100.0%
Others with support	0.2%	1.3%	0.4%	97.4%	0.7%		100.0%
External support	0.0%	0.8%	2.4%	7.2%	89.6%		100.0%
All episodes	8.9%	20.4%	14.3%	53.4%	3.0%		100.0%

This table shows the change in level of support for patients living in private residence prior to admission to the ambulatory rehabilitation program. For all patients who lived without support prior, 37% required increased support during the episode. The table also shows that for patients already receiving support prior to commencing ambulatory rehabilitation there was little change in their support needs and in some cases is reported as having decreased.

Accommodation and level of support at episode end

Accommodation and level of support	No.	%
Private residence	5,242	97.4%
<i>Alone with no support</i>	620	11.9%
<i>Others with no support</i>	1467	28.3%
<i>Alone with support</i>	644	12.4%
<i>Others with support</i>	2324	44.8%
<i>External support</i>	135	2.6%
<i>Missing/Not Stated</i>	52	
Residential Aged Care (Low Level Care)	21	0.4%
Residential Aged Care (High Level Care)	17	0.3%
Community Group Home	4	0.1%
Boarding House	1	0.0%
Transitional	5	0.1%
Other	93	1.7%
Missing	191	
All episodes	5,574	100.0%

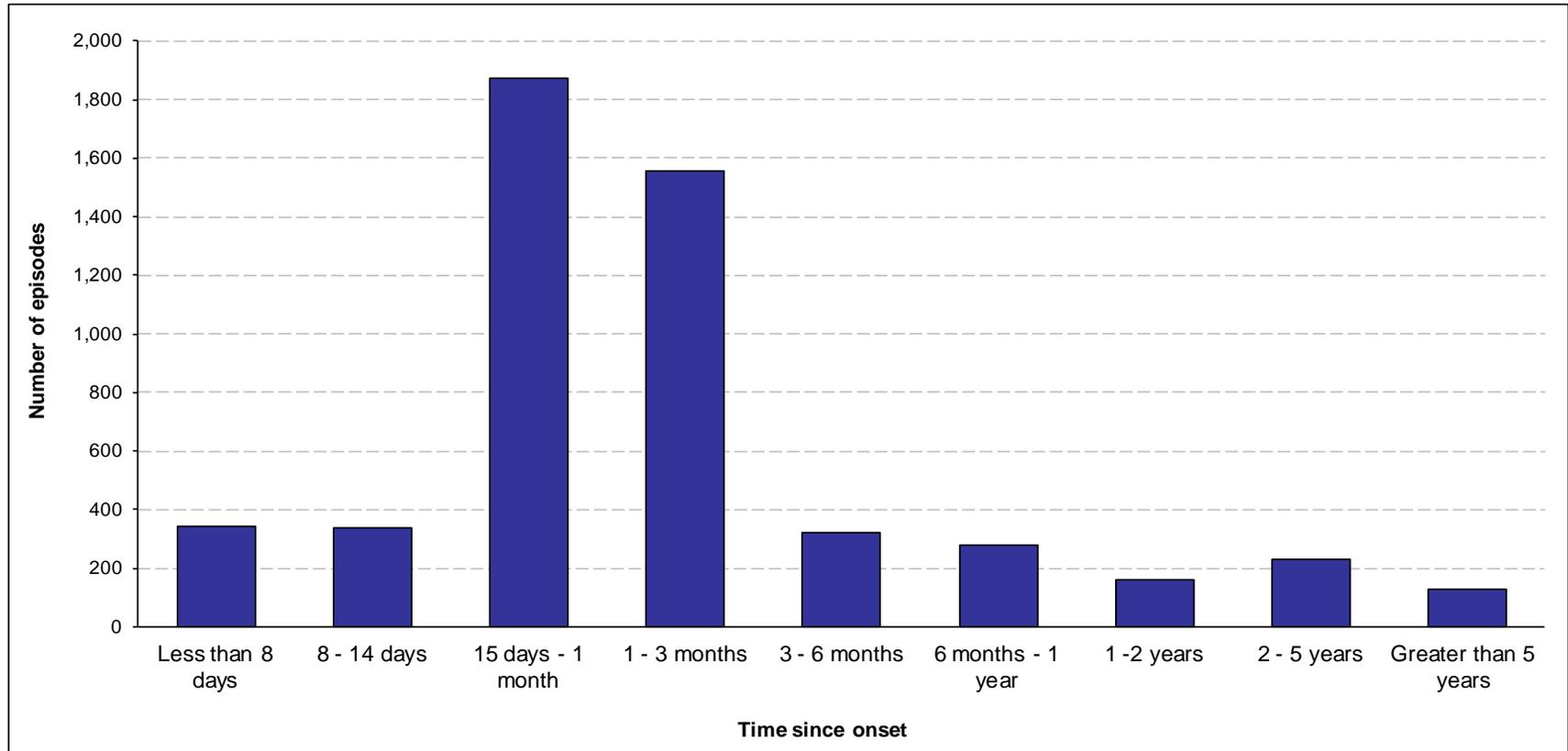
Change in accommodation/level of support between episode begin/end

Private residence on admission only

Support Prior	Discharge destination									
	Private Residence				External support	Other	Missing/ Not stated	Non-Private residence	Missing/ Not stated	All episodes
	Alone with no support	Others with no support	Alone with support	Others with support						
Alone with no support	507	28	95	48	3	0	2	11	4	698
Others with no support	38	1,229	11	357	14	1	2	18	5	1,675
Alone with support	52	4	519	31	4	2	1	19	0	632
Others with support	18	192	15	1,864	23	2	3	46	0	2,163
External support	2	7	3	17	90	0	1	5	0	125
Other	0	1	0	0	1	1	0	0	0	3
Missing/Not stated	1	2	0	0	0	0	35	0	0	38
All episodes	618	1,463	643	2,317	135	6	44	50	9	5,334
Alone with no support	73.1%	4.0%	13.7%	6.9%	0.4%	0.0%	0.3%	1.6%		100.0%
Others with no support	2.3%	73.6%	0.7%	21.4%	0.8%	0.1%	0.1%	1.1%		100.0%
Alone with support	8.2%	0.6%	82.1%	4.9%	0.6%	0.3%	0.2%	3.0%		100.0%
Others with support	0.8%	8.9%	0.7%	86.2%	1.1%	0.1%	0.1%	2.1%		100.0%
External support	1.6%	5.6%	2.4%	13.6%	72.0%	0.0%	0.8%	4.0%		100.0%
Other	0.0%	33.3%	0.0%	0.0%	33.3%	33.3%	0.0%	0.0%		100.0%
Missing/Not stated										
All episodes	11.7%	27.7%	12.2%	43.9%	2.6%	0.1%	0.8%	0.9%		100.0%

The change in level of support and accommodation at episode end is consistent with what was reported during the episode. Less than 2% of episodes ended with a change of residence. For all patients who lived without support prior, 24% required increased support at the end of the episode. Some patients who required support prior to the episode needed less support following ambulatory rehabilitation.

Time since onset of impairment



Time since onset

Onset Time	No.	%
Less than 8 days	344	6.6%
8 - 14 days	336	6.4%
15 days - 1 month	1,874	35.8%
1 - 3 months	1,555	29.7%
3 - 6 months	320	6.1%
6 months - 1 year	280	5.4%
1 -2 years	162	3.1%
2 - 5 years	230	4.4%
Greater than 5 years	128	2.4%
Missing/unknown	345	
Total	5,574	100.0%

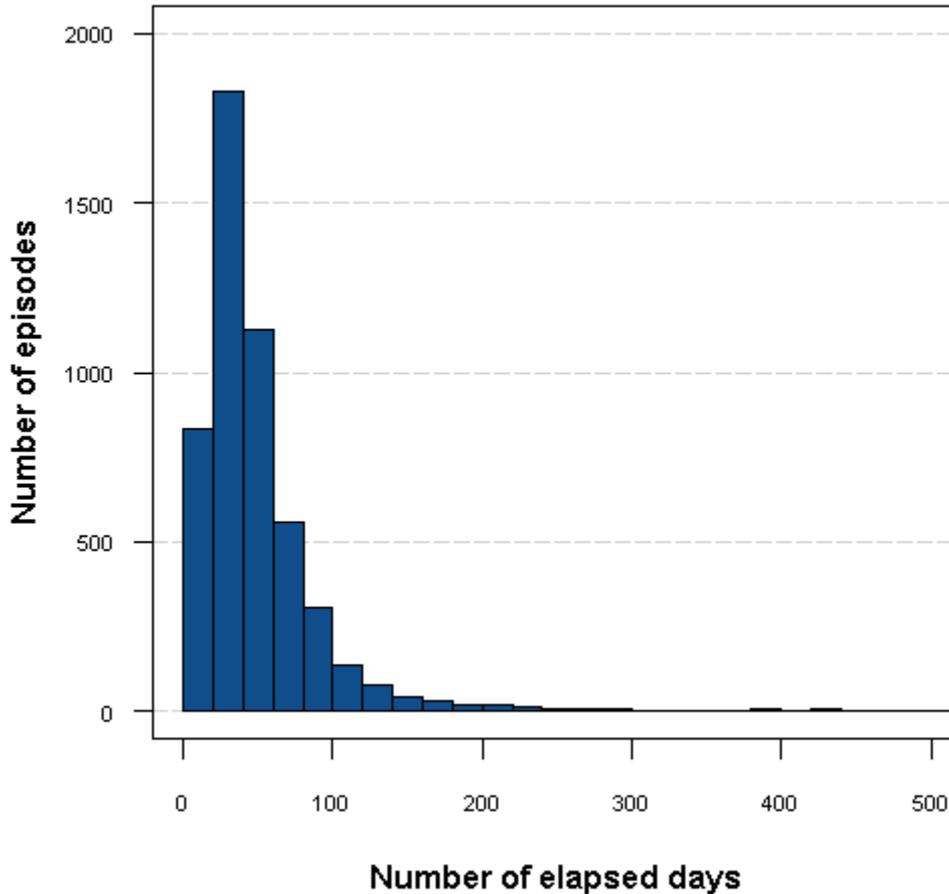
Around 80% of all episodes in this dataset commenced an ambulatory rehabilitation program within 3 months of impairment onset. 65% were within the 15 days to 3 month range.

Completed episodes by impairment

Impairment	Total Episodes	Complete	Incomplete	% Complete
Stroke	426	391	35	91.8%
Brain	119	102	17	85.7%
Neurological	196	176	20	89.8%
Spinal Cord	23	20	3	87.0%
Amputee	26	22	4	84.6%
Arthritis	70	61	9	87.1%
Pain	347	327	20	94.2%
Orthopaedic Fracture	411	376	35	91.5%
Post Orthopaedic Surgery	2,795	2,670	125	95.5%
Orthopaedic Other	117	113	4	96.6%
Cardiac	94	80	14	85.1%
Pulmonary	56	41	15	73.2%
Burns	1	1	0	100.0%
Congenital Deformities	2	2	0	100.0%
Other Disabling Imp.	176	175	1	99.4%
Multiple Trauma	18	18	0	100.0%
Reconditioning	631	556	75	88.1%
Missing	66	61	5	92.4%
All impairments	5,574	5,192	382	93.1%

A completed episode is one with a mode of episode end of discharge/case closure

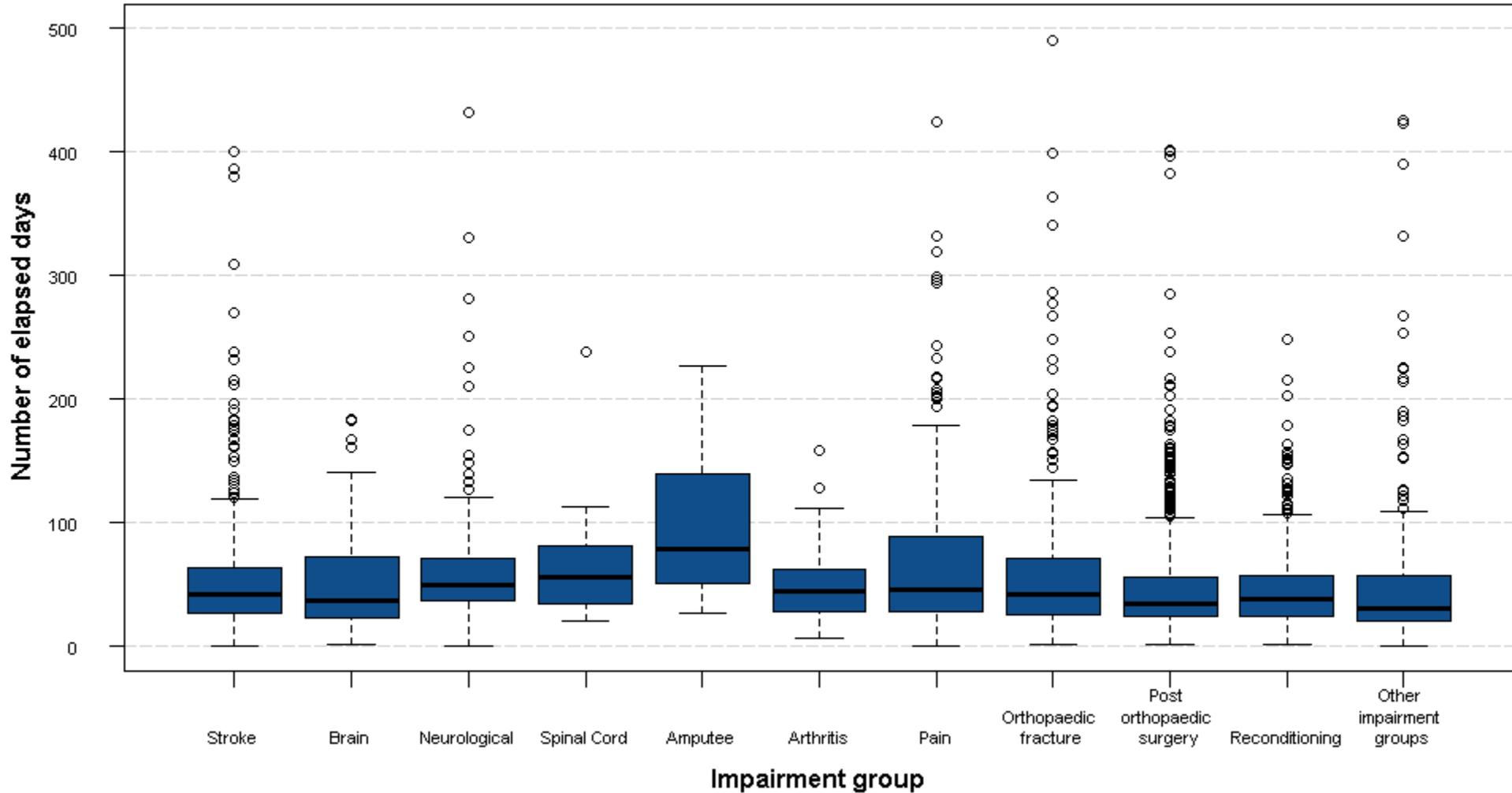
Elapsed days



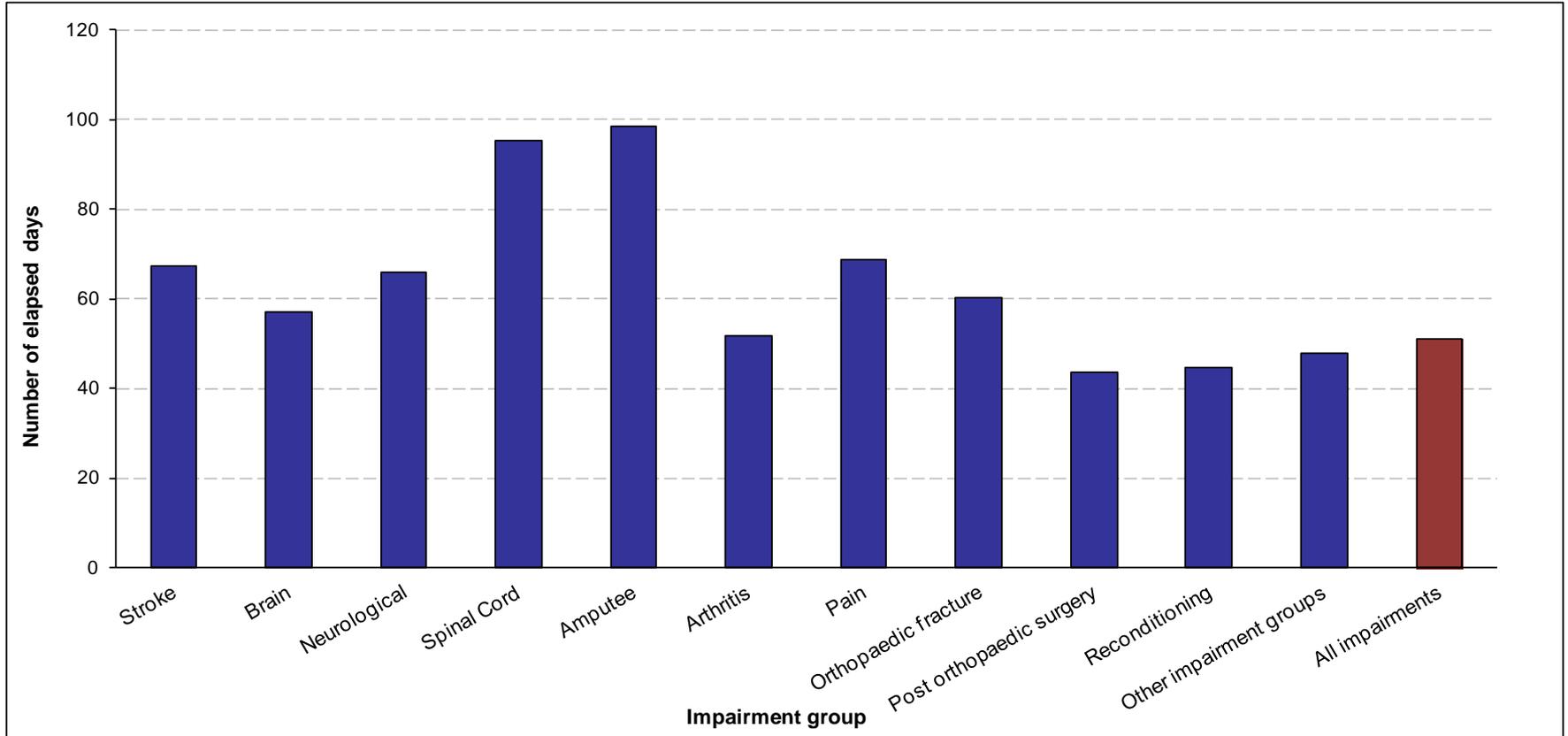
Impairment	Valid episodes	Mean days elapsed	(95% CI)
Stroke	383	67.5	(57.2 - 77.9)
Brain	97	57.2	(41 - 73.5)
Neurological	174	65.9	(55.5 - 76.3)
Spinal Cord	19	95.3	(32.7 - 157.8)
Amputee	22	98.4	(73.9 - 122.9)
Arthritis	61	51.7	(43.5 - 59.9)
Pain	315	68.8	(61.2 - 76.4)
Orthopaedic fracture	367	60.2	(53.5 - 66.9)
Post orthopaedic surgery	2,617	43.7	(42.4 - 44.9)
Reconditioning	547	44.7	(42 - 47.4)
Other impairment groups	418	47.8	(42.1 - 53.6)
Missing	45		
All impairments	5,065	51.1	(49.6 - 52.7)

Elapsed days means the total number of days from program start to finish.

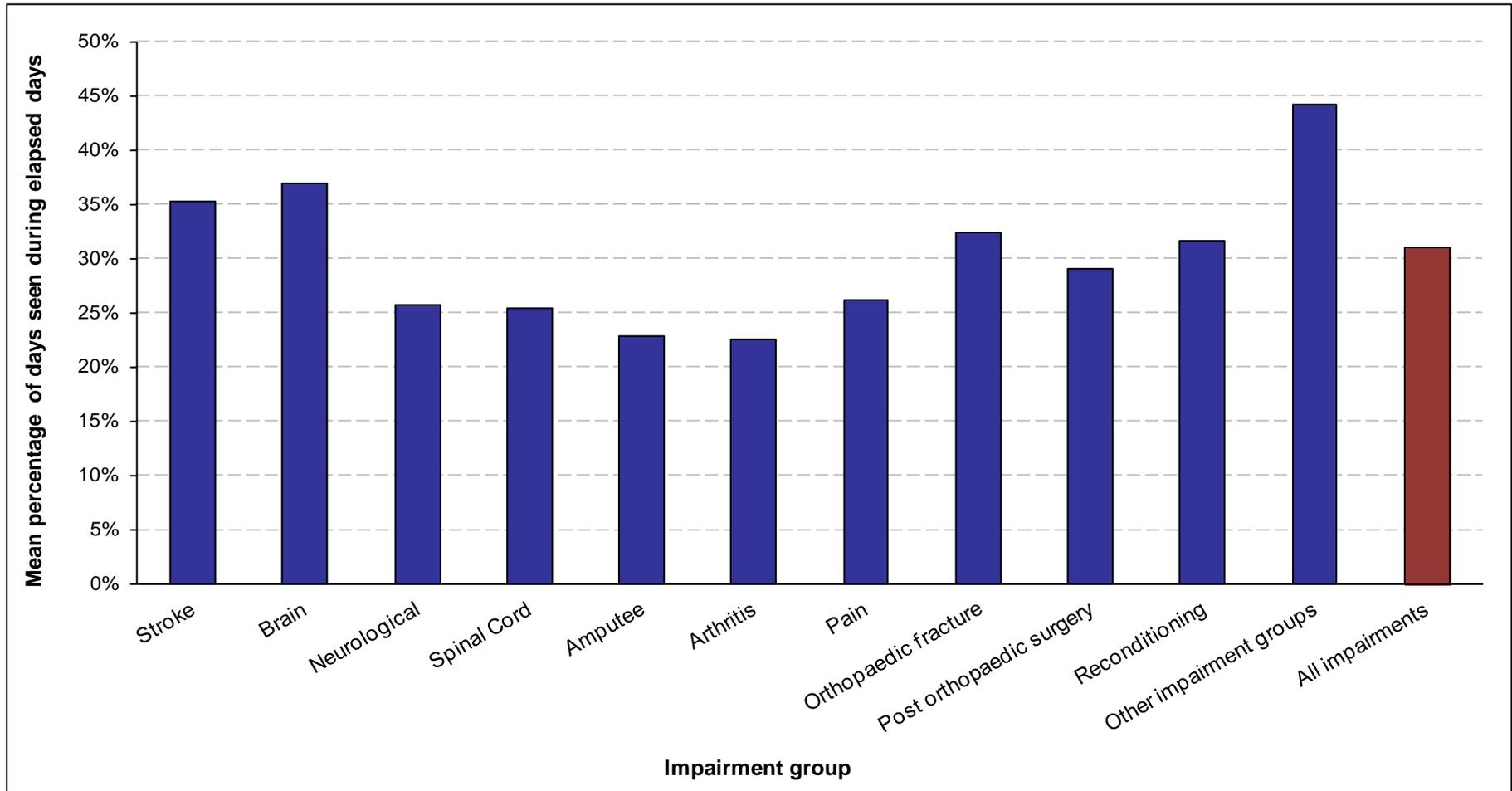
Elapsed days by impairment



Average elapsed days by impairment



Days seen as a proportion of elapsed days by impairment group



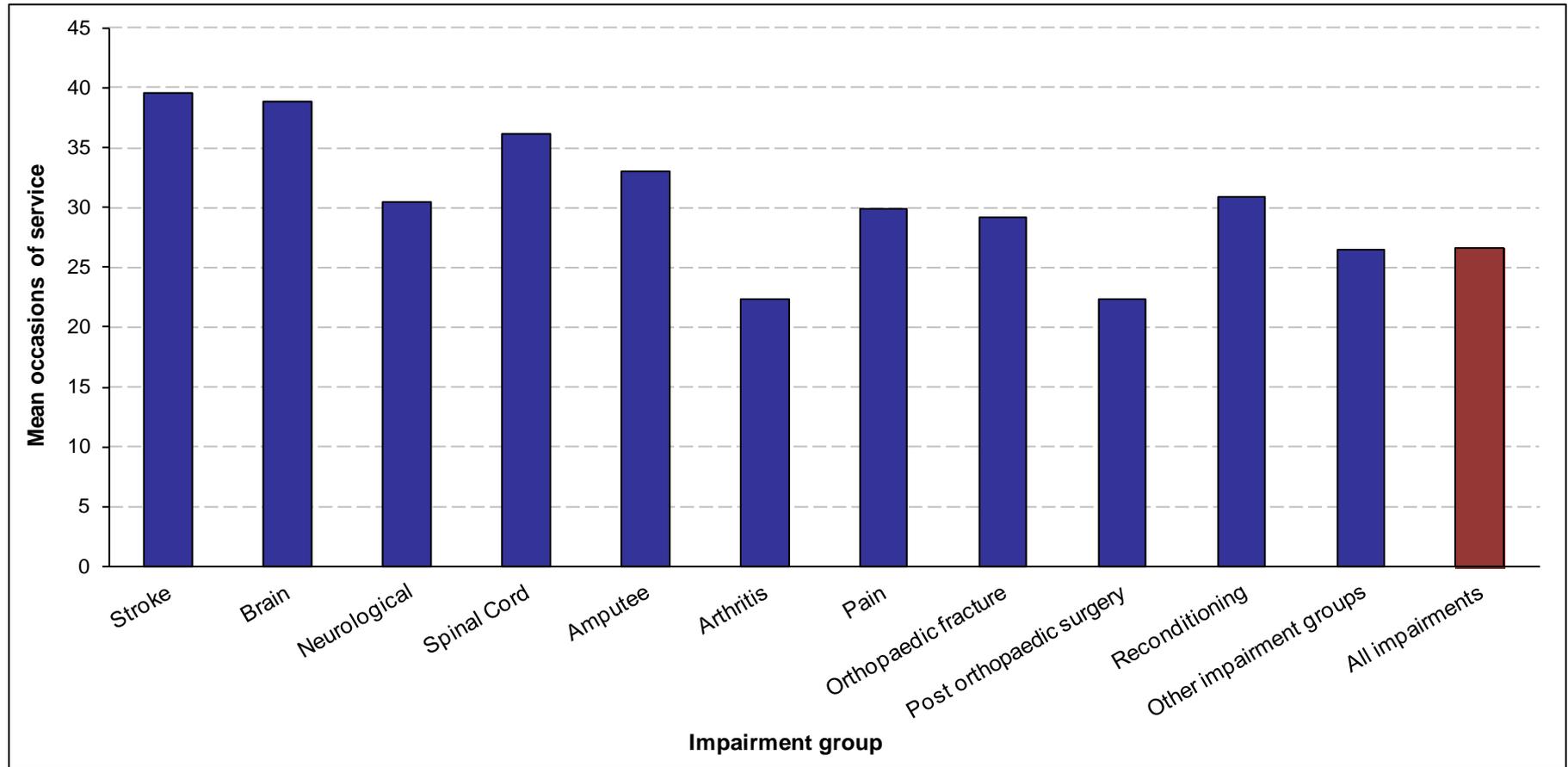
Note: "Other impairment groups" includes data for cardiac, pulmonary, burns and other impairments. Refer to Slides 14 and 15 for full impairment list.

Days seen as a proportion of elapsed days by impairment group

Impairment	Mean % of days seen during
Stroke	35.2%
Brain	36.9%
Neurological	25.6%
Spinal Cord	25.4%
Amputee	22.8%
Arthritis	22.6%
Pain	26.2%
Orthopaedic fracture	32.4%
Post orthopaedic surgery	29.1%
Reconditioning	31.6%
Other impairment groups	44.2%
All impairments	31.0%

This table describes as a percentage, average days seen during average episode elapsed days, by impairment group. For example, from the data received, patients in the stroke and reconditioning groups are on average seen more frequently during an episode than those in the pain group.

Total average occasions of service (OOS) by impairment



Note: "Other impairment groups" includes data for cardiac, pulmonary, burns and other impairments. Refer to Slides 14 and 15 for full impairment list.

Total average occasions of service (OOS) by impairment

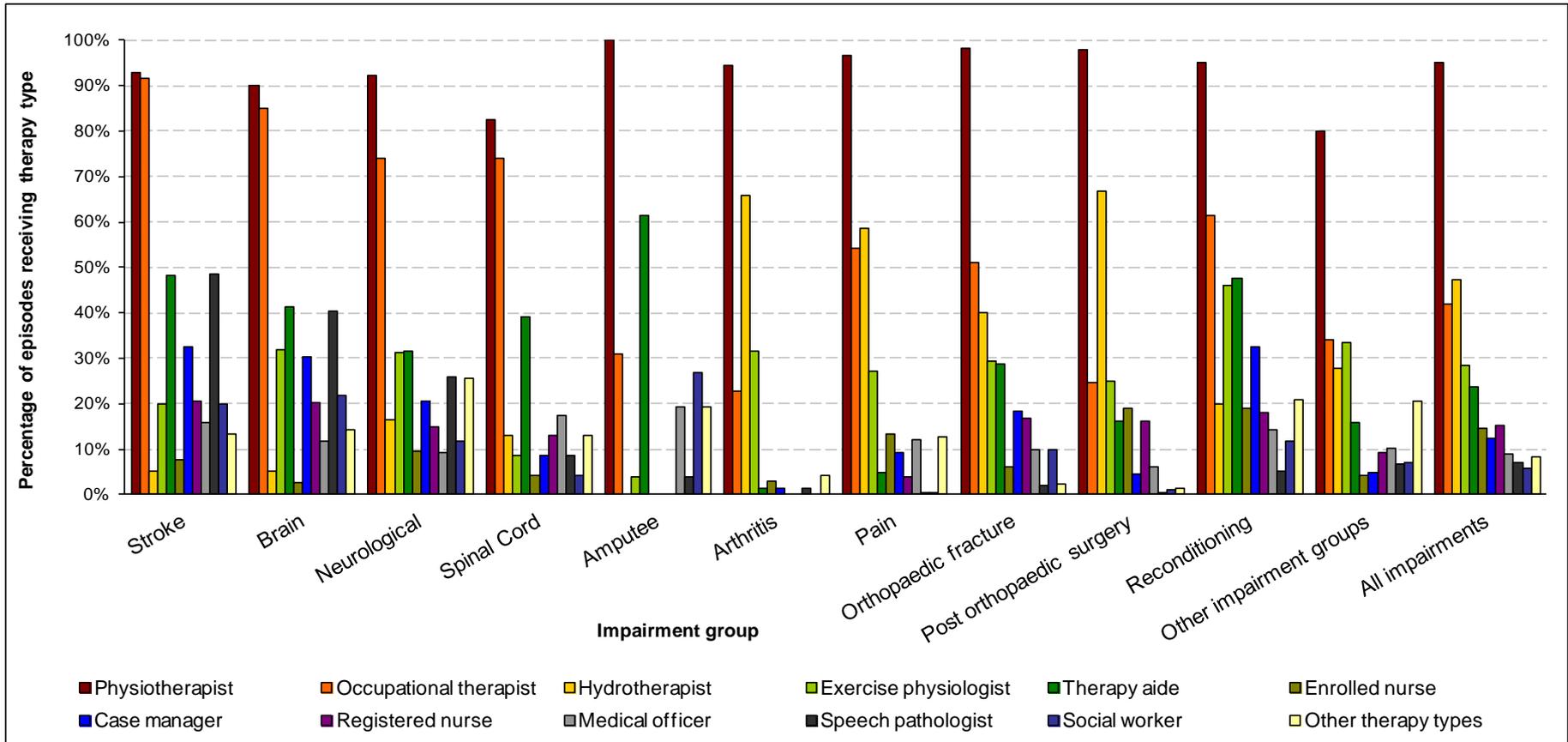
Impairment	Mean OOS	(95% CI)
Stroke	39.6	(36.4 - 42.8)
Brain	38.9	(30.8 - 46.9)
Neurological	30.4	(27.5 - 33.3)
Spinal Cord	36.2	(24.5 - 47.8)
Amputee	33.0	(24.5 - 41.4)
Arthritis	22.4	(19.5 - 25.3)
Pain	29.8	(26.7 - 32.9)
Orthopaedic fracture	29.2	(26.1 - 32.2)
Post orthopaedic surgery	22.4	(21.7 - 23.1)
Reconditioning	30.9	(28.8 - 33)
Other impairment groups	26.5	(23.9 - 29.1)
All impairments	26.6	(25.9 - 27.2)

Average OOS per day by impairment and episode type

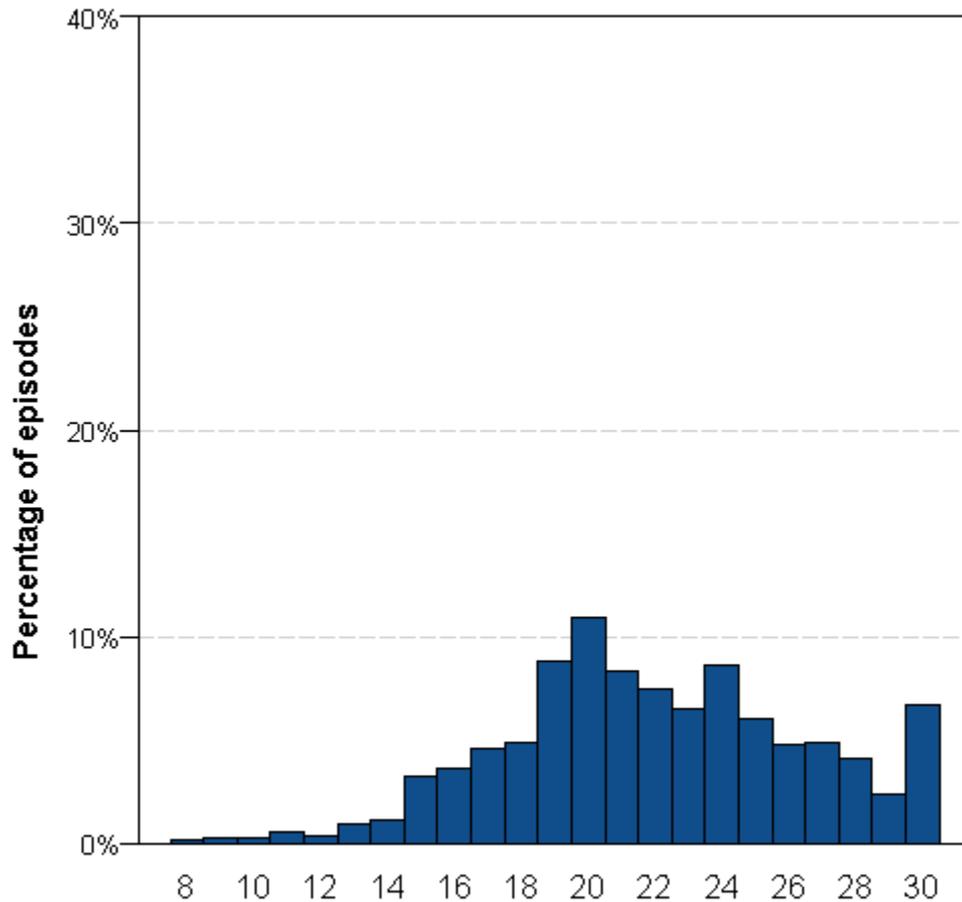
Impairment Group	Episode Type			
	Same Day Admitted	Outpatient	Community Patient	All Episodes
Stroke	2.68	2.01	2.75	2.62
Brain	2.52	2.24	2.50	2.48
Neurological	2.53	2.28	2.16	2.44
Spinal Cord	2.57	1.47	1.71	2.11
Amputee	1.89	1.07	1.59	1.55
Arthritis	2.27	2.29	NA	2.28
Pain	2.09	2.52	NA	2.30
Orthopaedic fracture	2.08	2.06	2.37	2.13
Post orthopaedic surgery	2.22	2.25	1.93	2.23
Reconditioning	3.01	2.04	2.74	2.84
Other impairment groups	2.00	2.13	2.09	2.03
All Impairments	2.33	2.24	2.45	2.31

It appears that community patients, on average, receive slightly more OOS per day than same day admitted patients who receive more than outpatients.

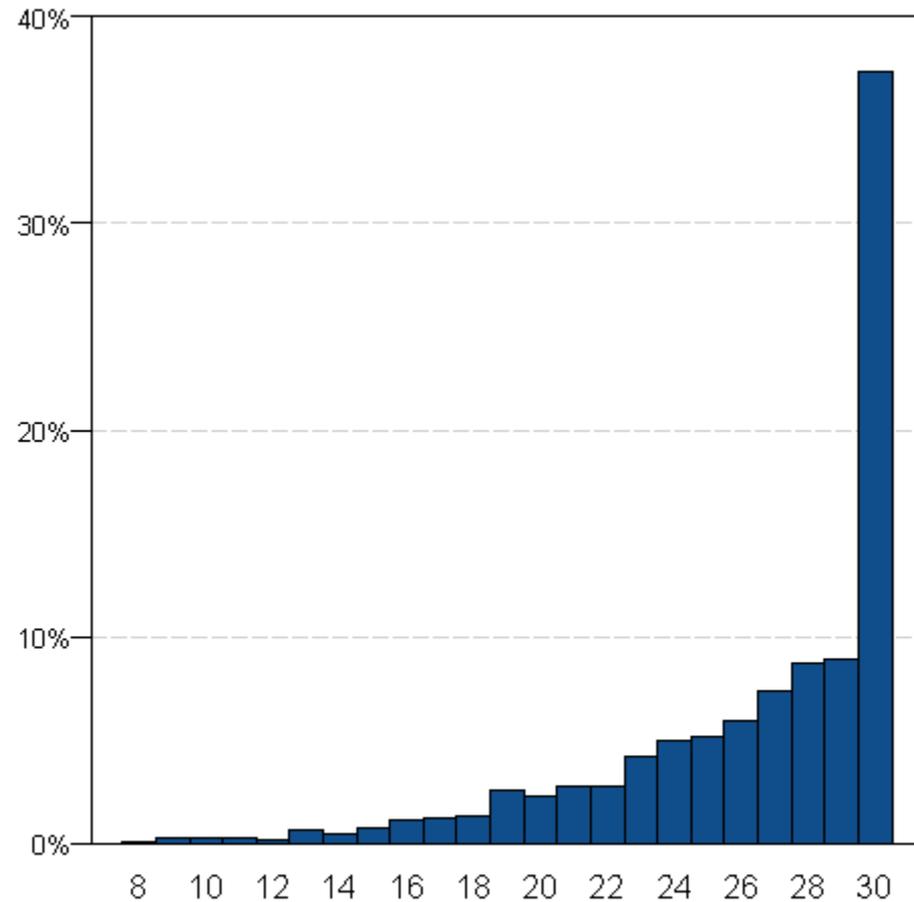
Therapy type by impairment



Distribution of beginning and end total Lawton's score

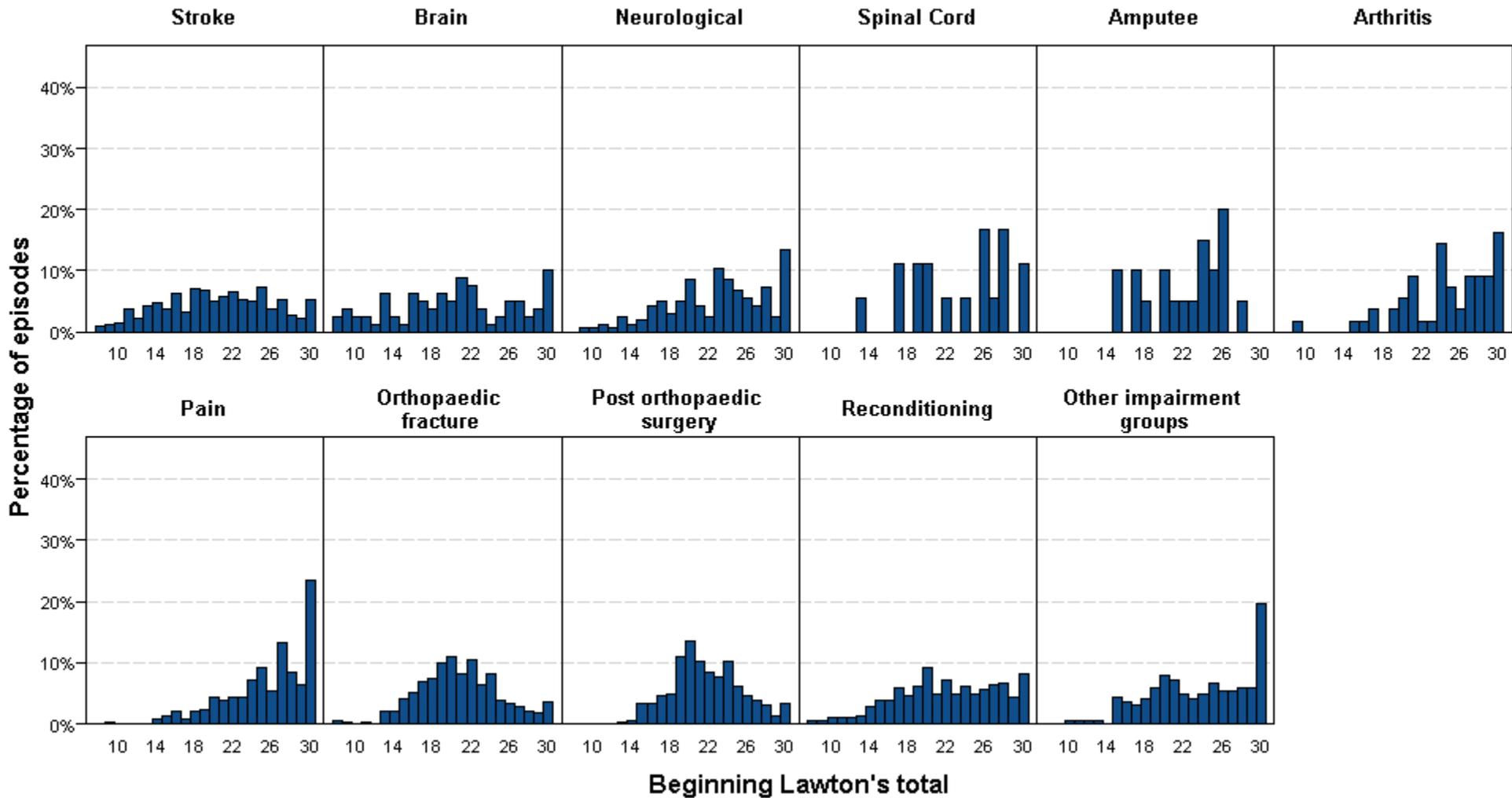


Beginning Lawton's total

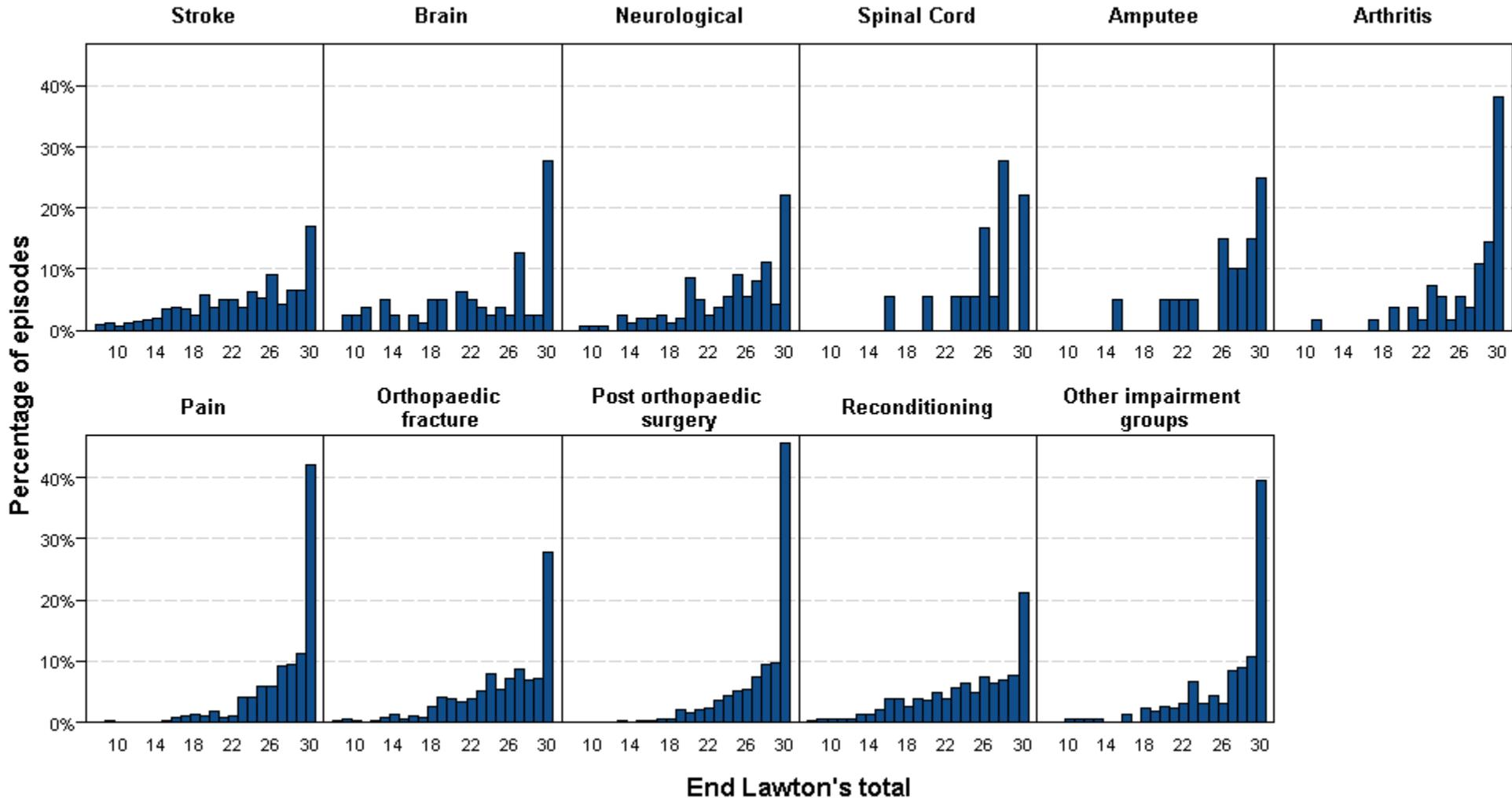


End Lawton's total

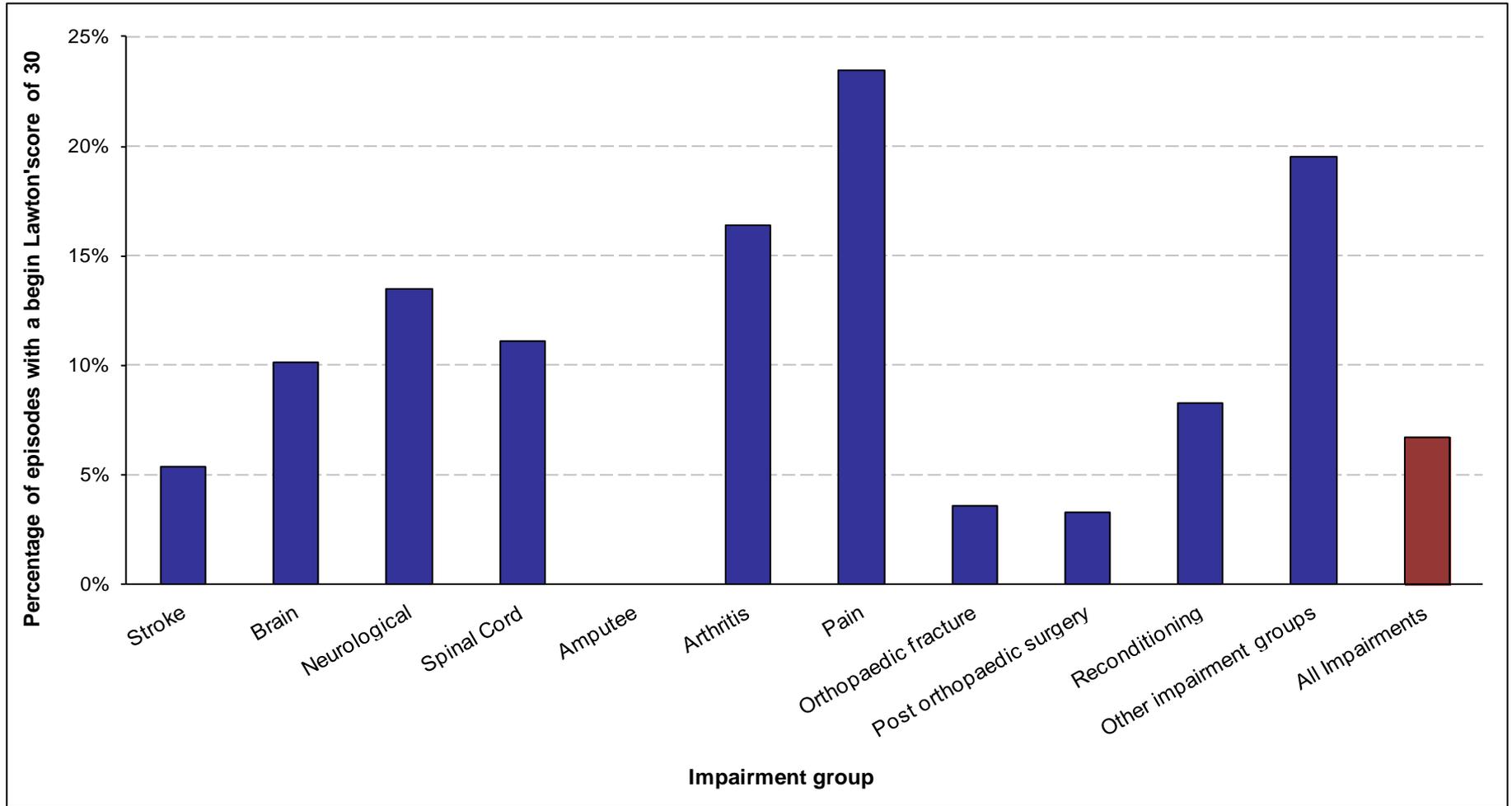
Beginning total Lawton's score by impairment



End total Lawton's score by impairment

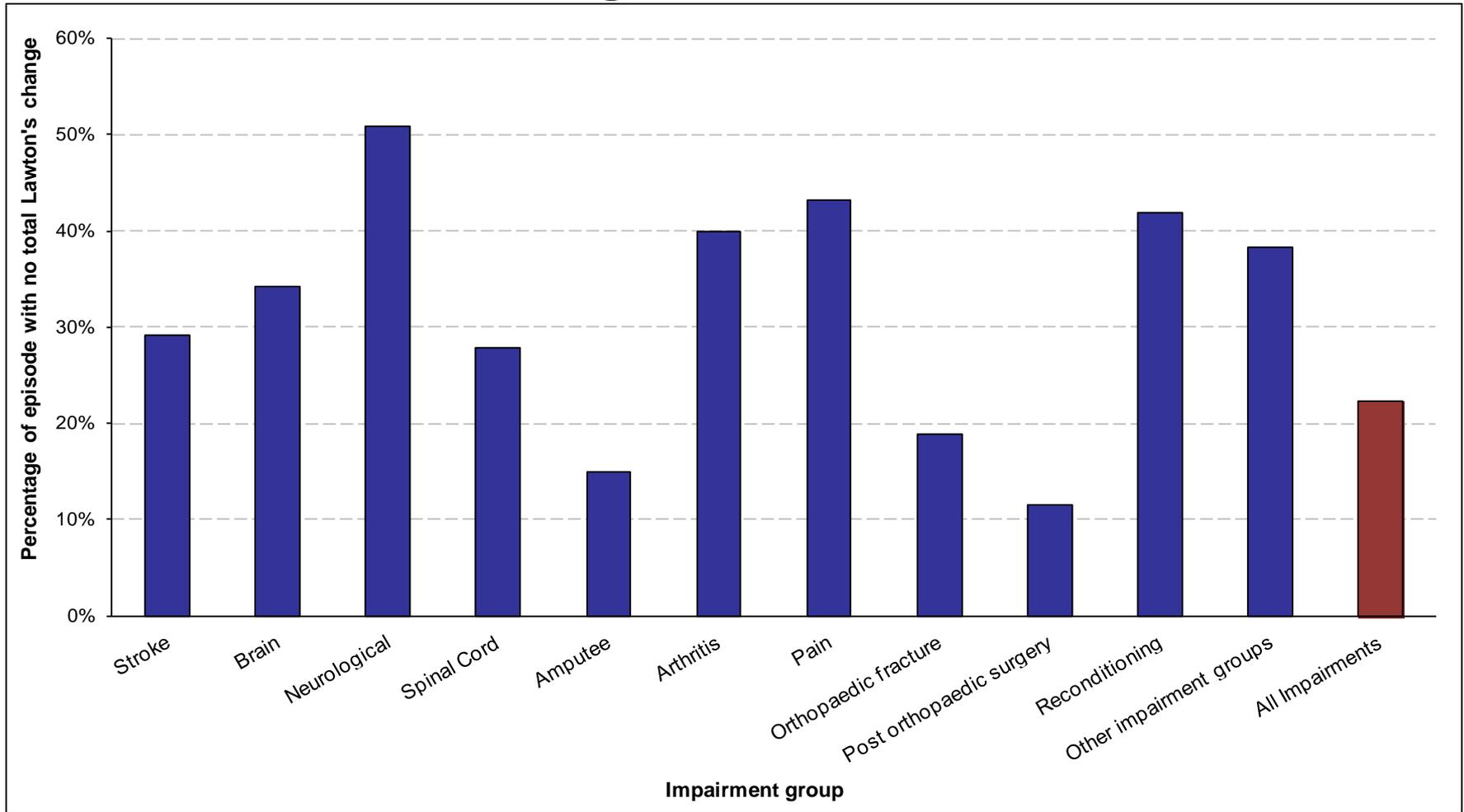


Proportion of episodes beginning with maximum Lawton's score of 30



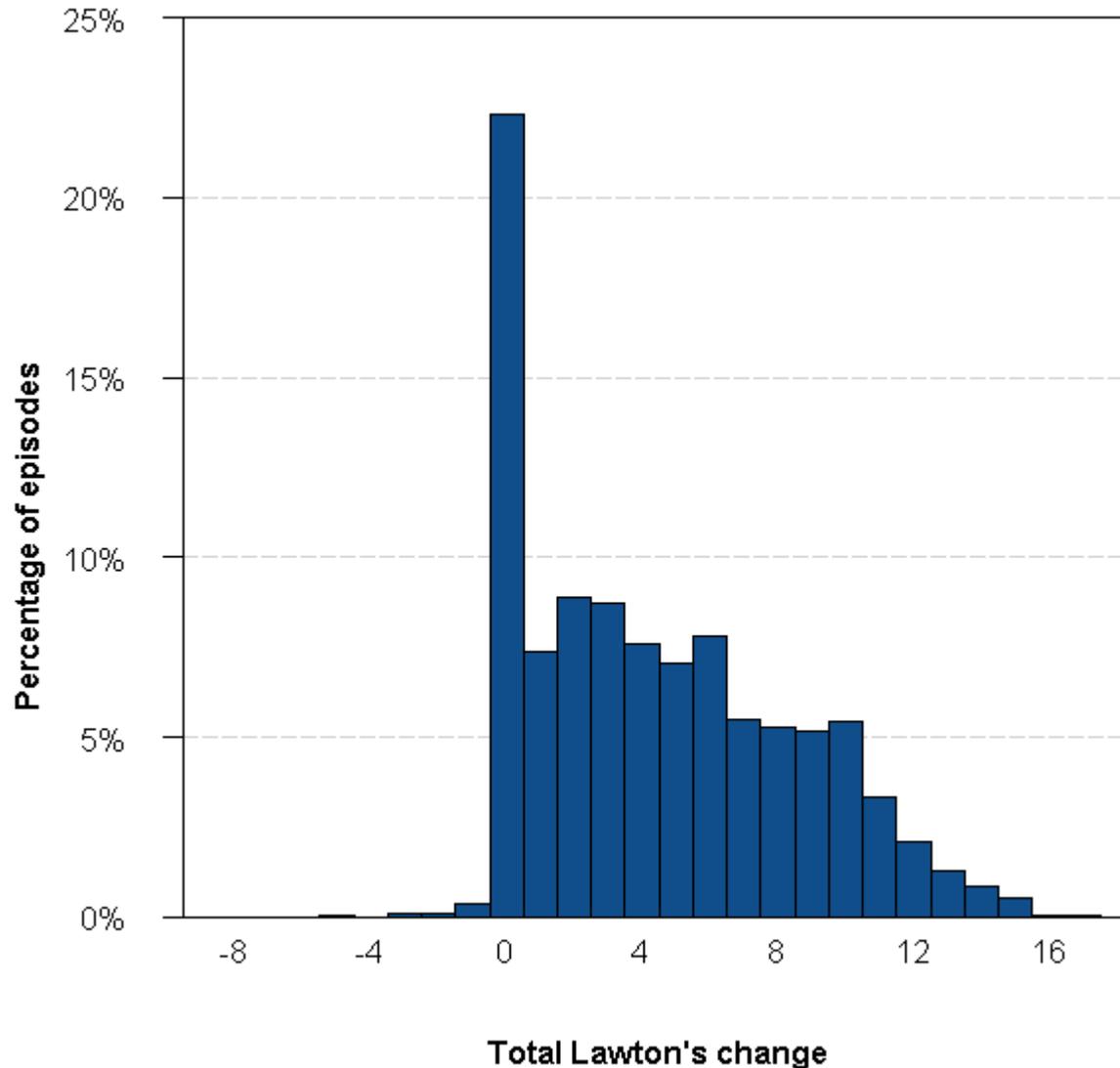
Note: "Other impairment groups" includes data for cardiac, pulmonary, burns and other impairments. Refer to Slides 14 and 15 for full impairment list.

Proportion of episodes with no Lawton's change

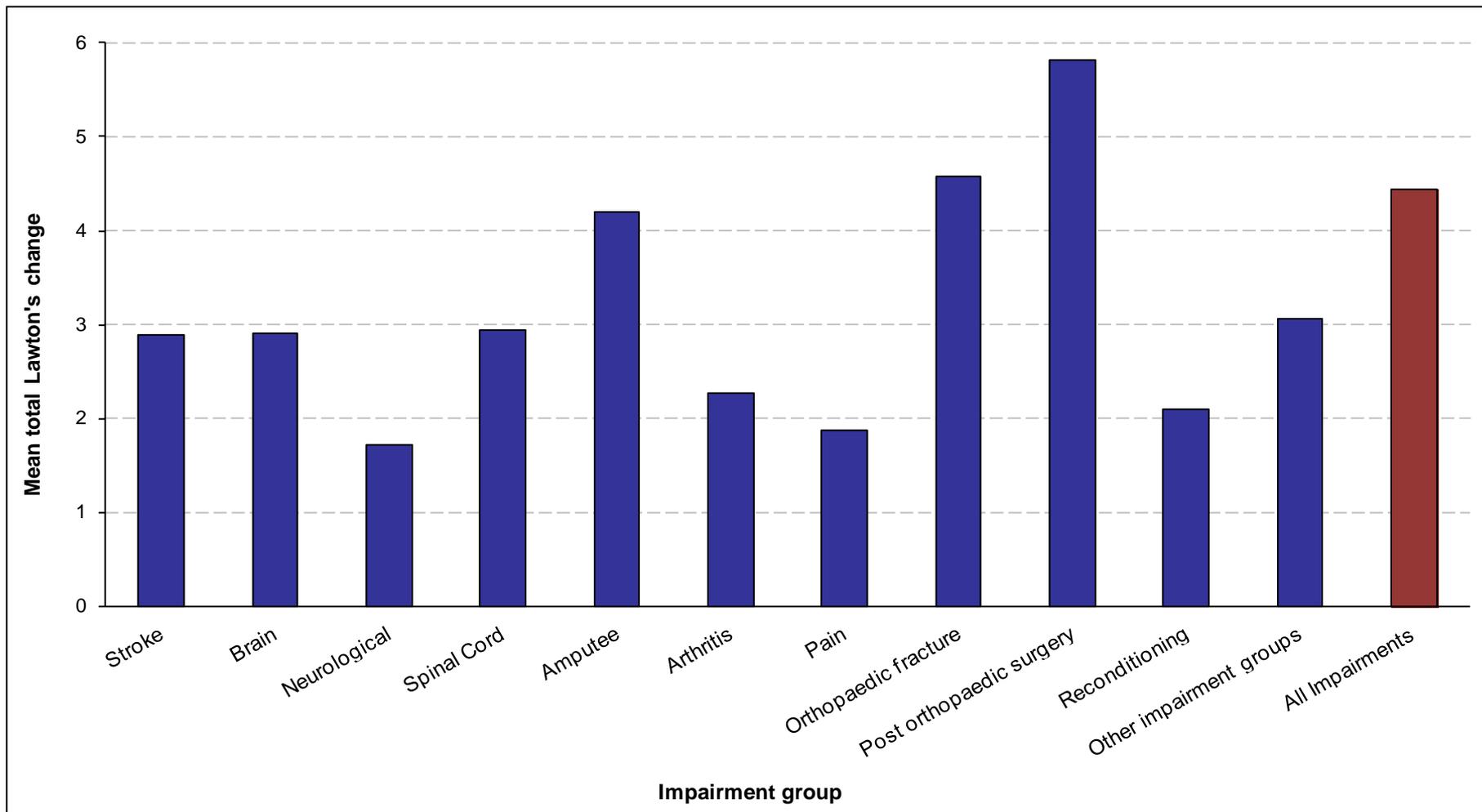


Note: "Other impairment groups" includes data for cardiac, pulmonary, burns and other impairments. Refer to Slides 14 and 15 for full impairment list.

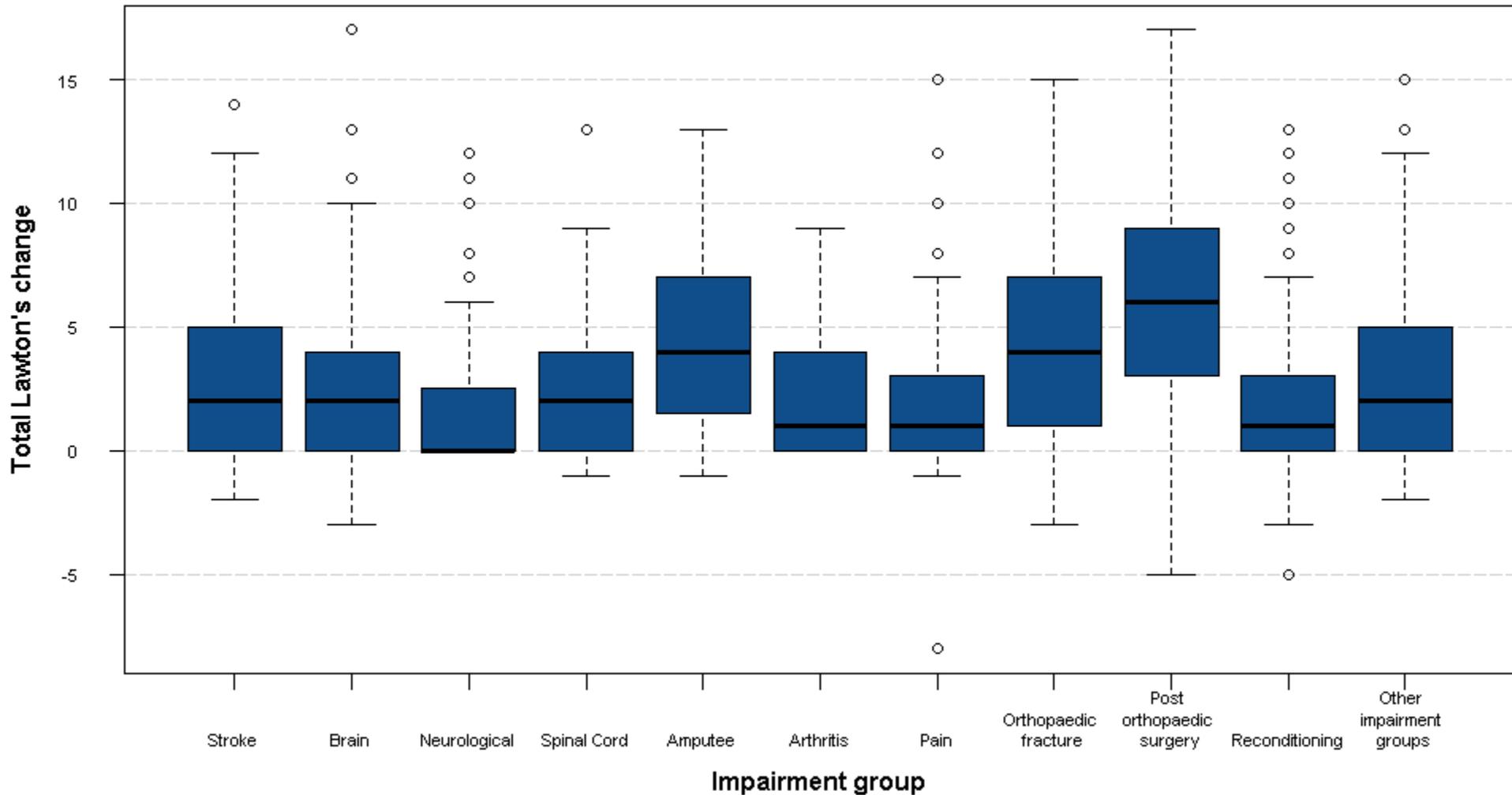
Distribution of Lawton's score change



Mean Lawton's score change by impairment



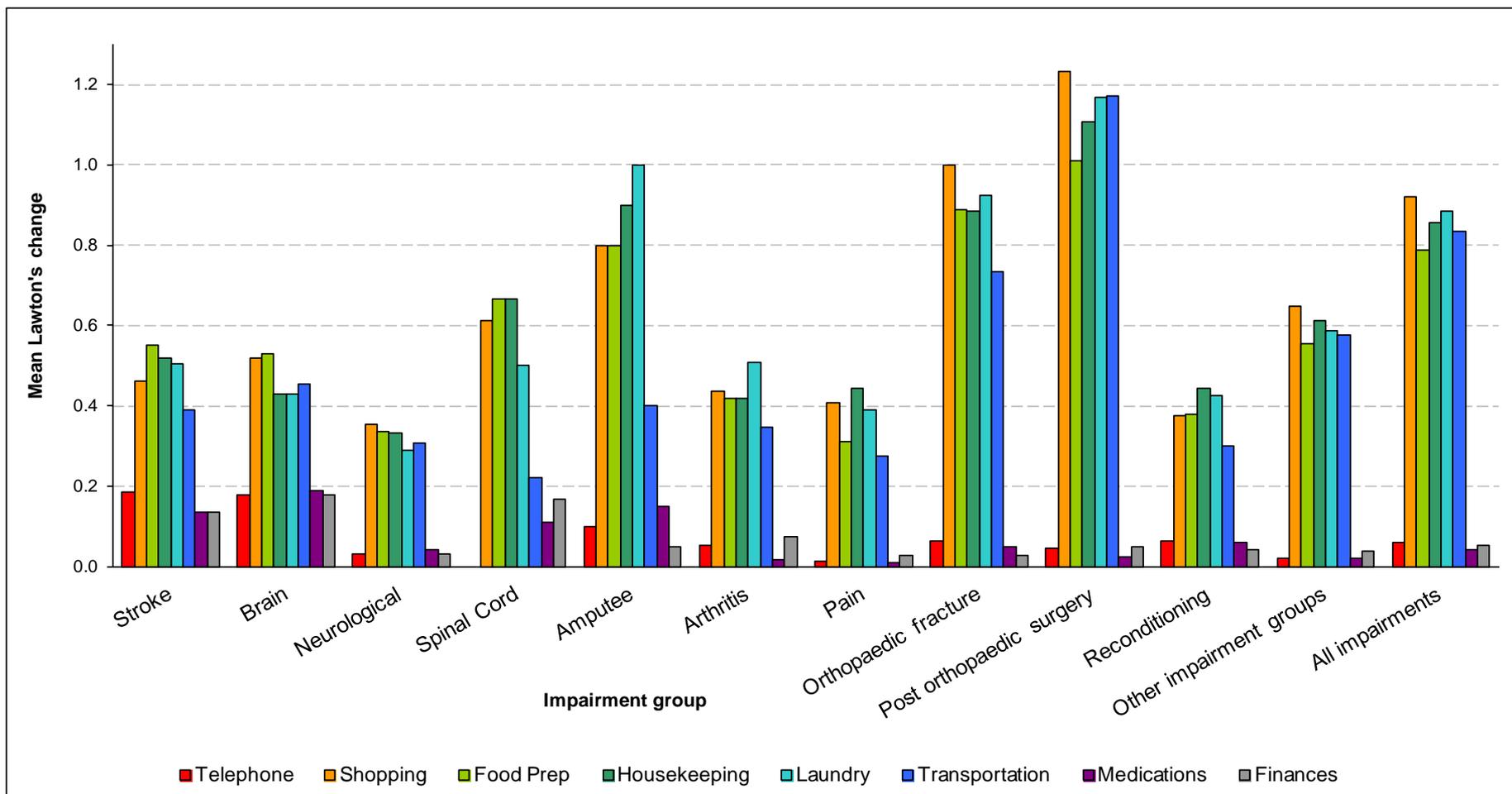
Lawton's score change by impairment



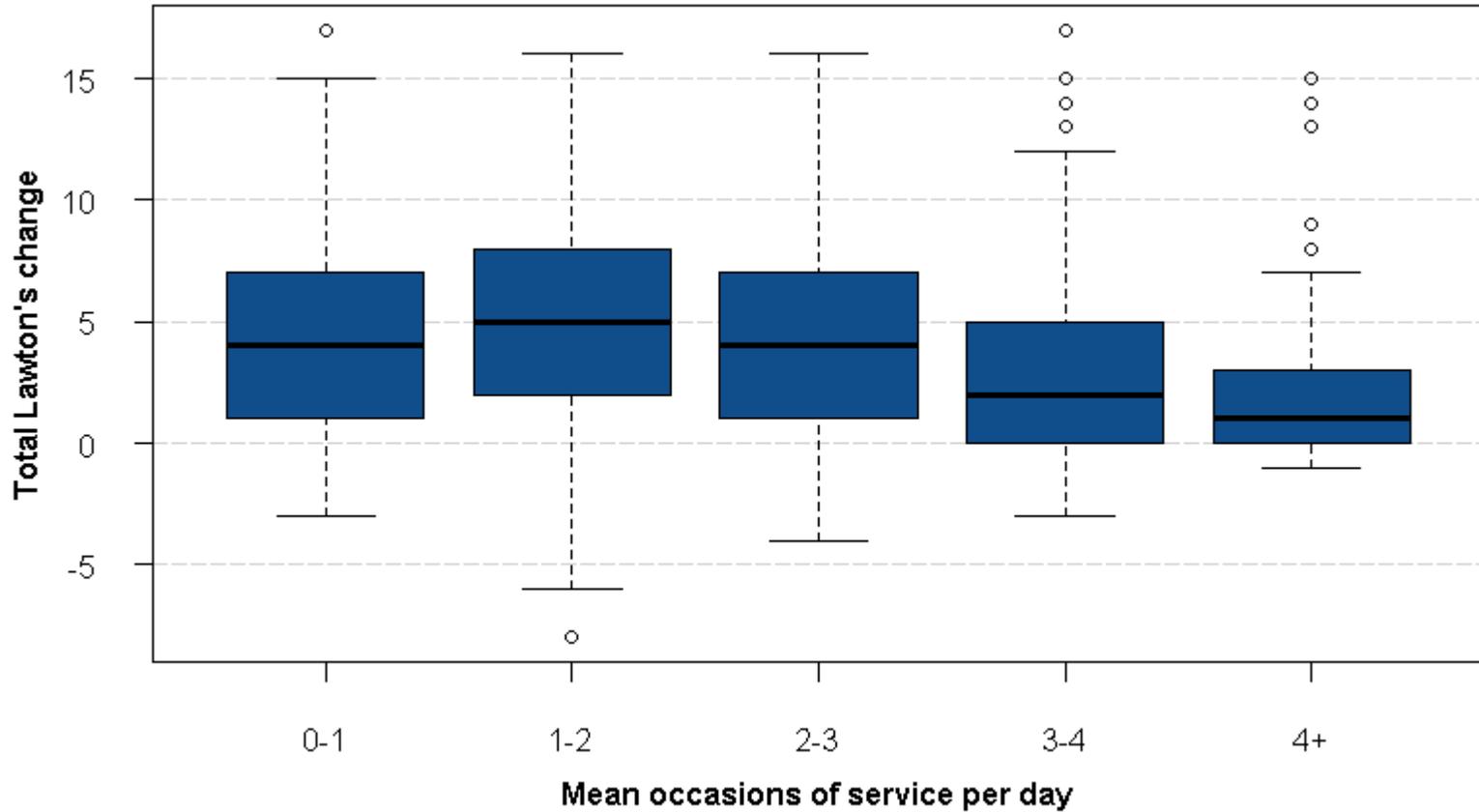
Mean Lawton's score change by impairment

Impairment group	Mean total Lawton's score change (95% CI)	
Stroke	2.9	(2.6 - 3.2)
Brain	2.9	(2.1 - 3.7)
Neurological	1.7	(1.3 - 2.1)
Spinal Cord	2.9	(1.2 - 4.7)
Amputee	4.2	(2.6 - 5.8)
Arthritis	2.3	(1.6 - 3)
Pain	1.9	(1.6 - 2.2)
Orthopaedic fracture	4.6	(4.2 - 5)
Post orthopaedic surgery	5.8	(5.7 - 6)
Reconditioning	2.1	(1.8 - 2.3)
Other impairment groups	3.1	(2.6 - 3.5)
All Impairments	4.4	(4.3 - 4.6)

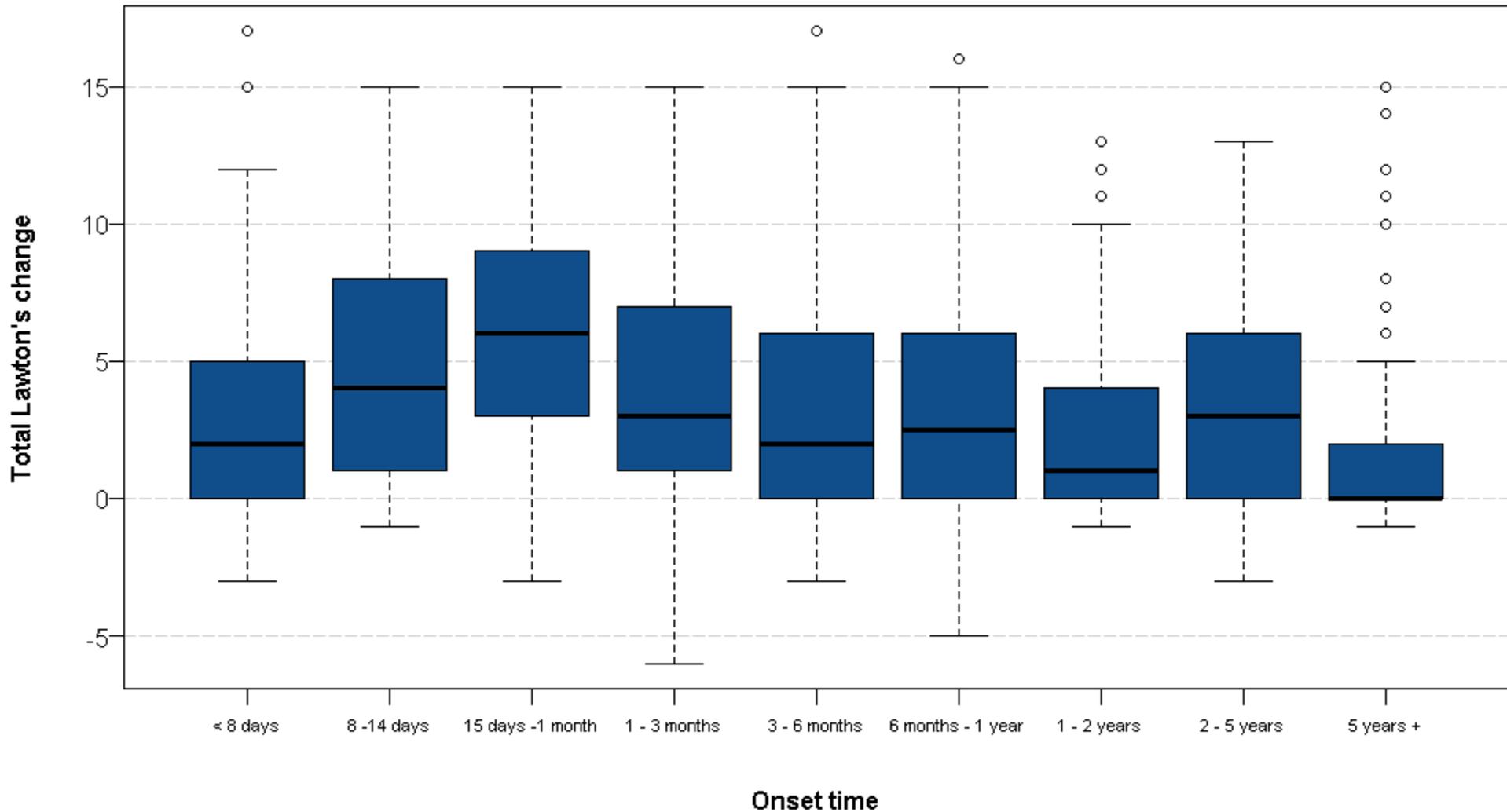
Change in Lawton's item score by impairment



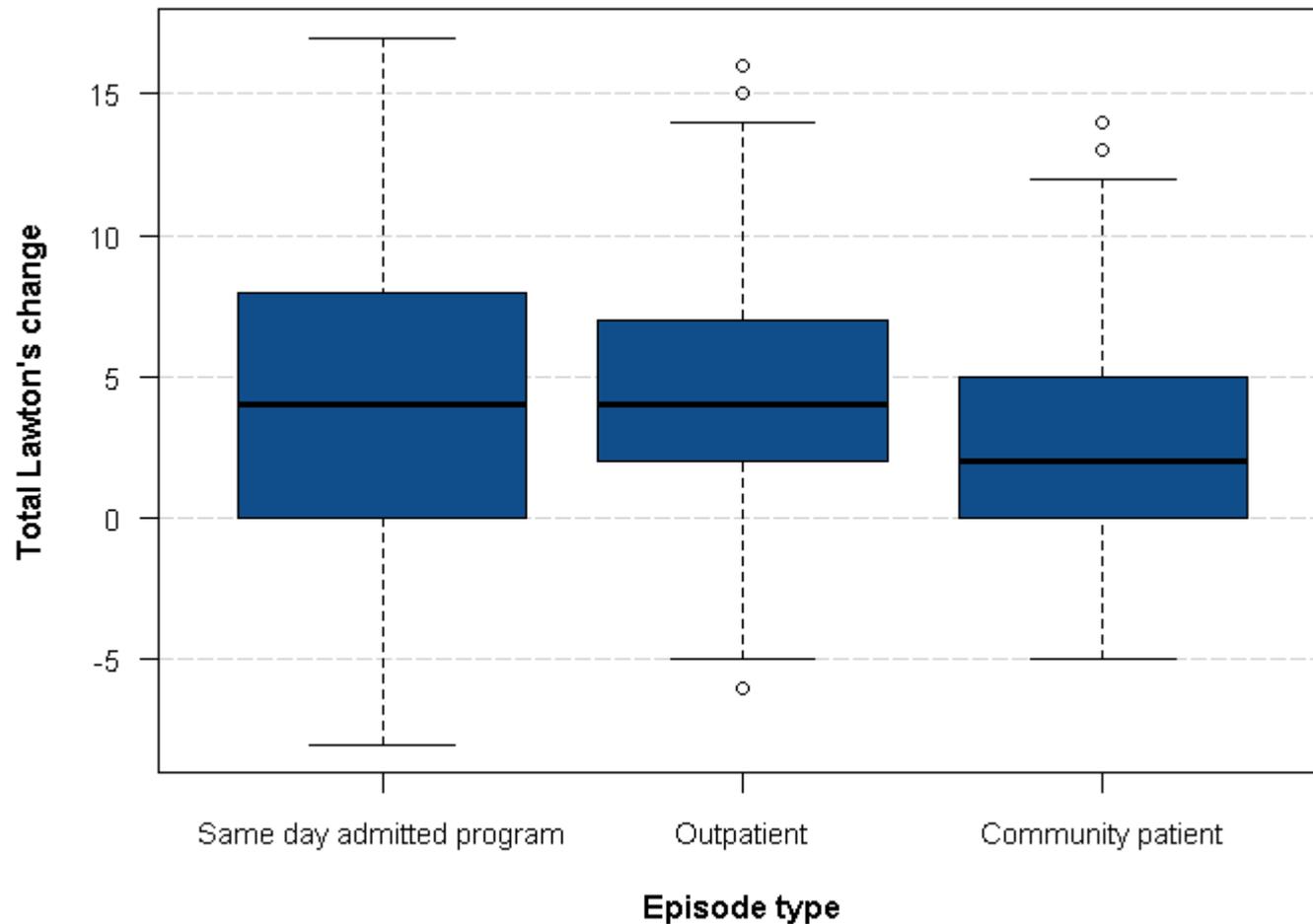
Magnitude of Lawton's score change by occasions of service per day



Lawton's score change by onset time



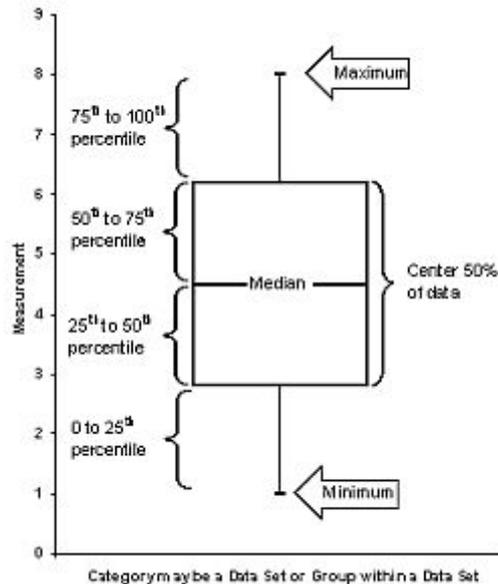
Lawton's score change by episode type



Appendix A: Interpreting box plots

Box Plots

Box plots, or box-and-whisker plots, provide insight into the distribution of observations within a data set by dividing it into four sections. The box indicates the spread of the central 50% of the data; the median is denoted by a horizontal line through the box. The portion of the box above the median line denotes the 50th-75th percentile range. Likewise, the portion of the box below the median denotes the 25th-50th percentile range. If all data lie within 1.5 times the interquartile range (75th percentile minus the 25th percentile) from either end of the central box, the whiskers represent the full range of the data. If not, the whiskers extend to 1.5 times the interquartile range and more extreme data are plotted as points.



Appendix B– AROC impairment codes V2

STROKE

- 1.1 Left body involvement (right brain)
- 1.2 Right body involvement (left brain)
- 1.3 Bilateral involvement
- 1.4 No paresis
- 1.9 Other stroke

BRAIN DYSFUNCTION

Non-Traumatic:

- 2.11 Sub-arachnoid haemorrhage
- 2.12 Anoxic brain damage
- 2.13 Other non-traumatic brain dysfunction

Traumatic:

- 2.21 Open injury
- 2.22 Closed injury

NEUROLOGICAL CONDITIONS

- 3.1 Multiple sclerosis
- 3.2 Parkinsonism
- 3.3 Polyneuropathy
- 3.4 Guillian-Barre
- 3.5 Cerebral palsy
- 3.8 Neuromuscular disorders
(include motor neurone disease)
- 3.9 Other neurologic disorders

SPINAL CORD DYSFUNCTION

Non-Traumatic:

- 4.111 Paraplegia, incomplete
- 4.112 Paraplegia, complete
- 4.1211 Quadriplegia incomplete C1-4
- 4.1212 Quadriplegia incomplete C5-8
- 4.1221 Quadriplegia complete C1-4
- 4.1222 Quadriplegia complete C5-8
- 4.13 Other non-traumatic SCI

Traumatic:

- 4.211 Paraplegia, incomplete
- 4.212 Paraplegia, complete
- 4.2211 Quadriplegia incomplete C1-4
- 4.2212 Quadriplegia incomplete C5-8
- 4.2221 Quadriplegia complete C1-4
- 4.2222 Quadriplegia complete C5-8
- 4.23 Other traumatic SCI

AMPUTATION OF LIMB

- 5.1 Single upper amputation above the elbow
- 5.2 Single upper amputation below the elbow
- 5.3 Single lower amputation above the knee
(includes through the knee)
- 5.4 Single lower amputation below the knee
- 5.5 Double lower amputation above the knee
(includes through the knee)
- 5.6 Double lower amputation above/below the knee
- 5.7 Double lower amputation below the knee
- 5.8 Partial foot amputation (includes single/double)
- 5.9 Other Amputation

ARTHRITIS

- 6.1 Rheumatoid Arthritis
- 6.2 Osteoarthritis
- 6.9 Other Arthritis

AROC impairment codes V2....continued

PAIN SYNDROMES

- 7.1 Neck pain
- 7.2 Back pain
- 7.3 Extremity pain
- 7.4 Headache (includes migraine)
- 7.5 Multi-site pain
- 7.9 Other pain (includes abdominal/chest wall)

ORTHOPAEDIC CONDITIONS

Fracture: (includes dislocation, excludes neurological involvement)

- 8.111 Fracture of hip, unilateral (include #NOF)
- 8.112 Fracture of hip, bilateral (include #NOF)
- 8.12 Fracture of shaft of femur (excludes femur involving knee joint)
- 8.13 Fracture of pelvis
- 8.141 Fracture of knee (includes patella, femur involving knee joint, tibia or fibula involving knee joint)
- 8.142 Fracture of lower leg, ankle, foot
- 8.15 Fracture of upper limb (includes hand, fingers, wrist, forearm, arm shoulder)
- 8.16 Fracture of spine (excludes where the major disorder is pain)
- 8.17 Fracture of multiple sites (multiple bones of same lower limb, both lower limbs, lower with upper limb, lower limb with rib or sternum. Excludes with brain injury or with spinal cord injury)
- 8.19 Other orthopaedic fracture (includes jaw, face, rib, orbit or sites not elsewhere classified)

ORTHOPAEDIC CONDITIONS cont'd

Post orthopaedic surgery:

- 8.211 Unilateral hip replacement
- 8.212 Bilateral hip replacement
- 8.221 Unilateral knee replacement
- 8.222 Bilateral knee replacement
- 8.231 Knee & hip replacement same side
- 8.232 Knee & hip replacement different sides
- 8.24 Shoulder replacement or repair
- 8.25 Post spinal surgery (includes nerve root injury, laminectomy, spinal fusion, discectomy. Excludes spinal cord injury or caudaequina)
- 8.26 Other orthopaedic surgery

AROC impairment codes V2....continued

CARDIAC 9.1 Following recent onset of new cardiac impairment (AMI, heart transplant, cardiac surgery) 9.2 Chronic cardiac insufficiency 9.3 Heart & heart/lung transplant	CONGENITAL DEFORMITIES 12.1 Spina Bifida 12.9 Other congenital deformities	DEVELOPMENTAL DISABILITIES (includes patients who have significant intellectual disabilities, excludes cerebral palsy) 15.1 Developmental Disabilities
PULMONARY 10.1 Chronic obstructive pulmonary disease 10.2 Lung transplant 10.9 Other pulmonary	OTHER DISABLING IMPAIRMENTS 13.1 Lymphoedema 13.2 Other disabling impairments (cases that cannot be classified into a specific group. <u>This classification should rarely be used</u>)	RE-CONDITIONING/RESTORATIVE (excludes primary cardiac insufficiency & primary pulmonary insufficiency) 16.1 Re-conditioning following surgery 16.2 Re-conditioning following medical illness 16.3 Cancer rehab (where patient is de-conditioned as a result of their cancer or treatment for their cancer)
BURNS 11 Burns	MAJOR MULTIPLE TRAUMA 14.1 Brain + spinal cord injury 14.2 Brain + multiple fracture/amputation 14.3 Spinal cord + multiple fracture/amputation 14.9 Other multiple trauma	

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