New South Wales

Special Commission of Inquiry into Healthcare Funding

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Name: Department of Orthopaedic Surgery, Children's Hospital Westmead

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Submission to the Special Commission Inquiry into Healthcare – October 2023
Department of Orthopaedic Surgery – Children's Hospital at Westmead

Who are we?

The Children's Hospital Westmead (CHW) is the largest paediatric orthopaedic centre in NSW. We have 25 paediatric orthopaedic surgeons working together to service children from across this state. Amongst our specialist services this includes being the largest centre for cerebral palsy and complex neuromuscular conditions in many cases affecting children's ability to walk or maintain basic daily functional activity. We have the largest paediatric spine service in the state treating major paediatric trauma, infection, tumours, deformity and bone cancers. We have a congenital hand unit which services the majority of congenital hand deformity and major trauma in NSW. All paediatric bone sarcomas and orthopaedic oncology cases are treated in our facility. Finally, we are a tertiary paediatric trauma centre and offer specialist surgical services for complex hip, knee, foot and upper limb conditions in children.

What is the problem?

As paediatric orthopaedics becomes more specialised and distinct from adult orthopaedics, fewer surgeons in other (non-paediatric) centres around NSW are comfortable managing complex paediatric orthopaedic trauma and elective cases. As a result, we are seeing an increasing demand on our service which is above and beyond that due to population growth.

From 2016/7 to 2020/2021 the occasions of "individual in-person contacts" in our outpatients department grew by 103% from 24,131 to 48,981 per year (*see attached report*). In addition, CHW had more than double the number of inpatient orthopaedic surgical admissions when compared to the second largest centre (SCH Randwick) (*see attached report***). Current funding models do not recognise or fairly remunerate a tertiary centre like ours for the provision of an increasing share of specialised paediatric services.

In many cases, children who presents to regional or local district hospitals with complex injuries or conditions are transferred to our hospital for specialist care. However, a portion of funding for that specialist care still gets given to the regional or district centre and there is no extra funding for our unit to compensate us for providing this state-wide service. In addition, many children with non-urgent but highly complex spine/limb deformity travel from remote parts of the state to receive care. The NSW activity-based funding model does not recognise the higher complexity of this care and hence the service we provide does not receive adequate resources.

At present the average orthopaedic clinic sees 50 patients in 4 hours. This represents an allocation of 4.8 minutes of surgeon time per patient. This is inadequate and unsustainable especially in the setting of complex tertiary level patients. However, even if every resource of the outpatient clinic was to be doubled (clinic space, staff, doctors, allied health, etc) we would still only able to allocate 9.6 min to each patient. This perhaps give a sense of the magnitude of the problem at hand. The number of children waiting for planned surgery and the total number of operating theatre minutes required to address that caseload is another metric which may be used to demonstrate the situation.

Our orthopaedic service has not seen any significant enhancement since 2004. This has led to breeching surgical waiting lists, overcrowded outpatients clinics, difficulty securing beds for patients on the days of planned complex surgeries and difficulty retaining staff due to the moral injury they sustain in seeing the effect this has on the children and families they treat.

What is the solution?

Our vision is that the Children's Hospital at Westmead should be a tremendous source of community pride, built through excellence and compassion. We envisage a future where clinical resource allocation accurately reflects the longer term value to society of the care provided. Current health

economic models do not work accurately for many paediatric conditions and, as a result, we feel new metrics are required to accurately reflect the value to the community of looking after children.

Our request to the Special Commission Inquiry is that our service is assessed based on the volume of patients we serve and proportionately remunerated for that service. Initially, we seek clarification that funds that are allocated to our service are done per patient at the same rate as all other specialist medical and surgical services.

In addition, we recommend that the Special Commission review the NSW Health activity-based funding model that allows regional and local district hospitals to receive a portion of activity based funding even in circumstances where the child's needs are deemed "complex" and care is transferred out of those institutions and on to a Children's facility. It is our belief that a more appropriate way of apportioning that funding would be for all of the funds to follow the child to the Children's Hospital. It is here that the specialised care is provided and a value should be placed on that tertiary specialised service.

We encourage the Special Commission to consider how children are valued relative to adults in modern health economic models. Adult orthopaedics often uses quality adjusted life years (QALY's) to define the value of medical care. As an example, it has long been recognised that arthroplasty surgery in elderly patients offers and excellent value proposition for improving independence and reducing costs to society in other ways. However, many arthroplasty patients are elderly and the economic effect of that care may be short lived in some cases. On the other hand, an osteotomy surgery in a child who undergoes correction of a major limb deformity will last their entire life (which in a paediatric population is a much larger multiplier of economic value when compared to osteoarthritis in an elderly population). Models for paediatric patients are less simple and hence they are often simply assessed using adult models which leads to underfunding of essential services. The lifelong effects of paediatric orthopaedic surgery are worth quantifying and if done accurately may lead to an enhanced awareness amongst politicians, health bureaucrats, economists and members of the public about the importance of providing these services and keeping them easily accessible to all children in our society.

Once action is taken on the above areas of funding reallocation we expect there will be sufficient funds to enhance the Paediatric Orthopaedic service with extra clinical staff, allied health staff, clerical staff for clinic and operating theatre sessions. We are asking to have a commensurate amount of funding for the high value care we currently provide.

SUMMARY OF REQUESTS:

1. **That our orthopaedic service is assessed based on the volume of patients we treat annually and proportionately remunerated for that service at the same rate per patient as other specialty services.**
2. **Where complex paediatric orthopaedic care is transferred to our centre from another regional or local district hospital, we request that all activity based funding be transferred with that patient.**
3. **That the special commission consider adding a premium to the value of paediatric surgical care provision given the unique impact it has on future societal health economics.**

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The Children's Hospital at Westmead

Orthopaedic Service Activity Analysis

1 November 2022 – Version 1.1

The Sydney children's Hospitals Network

care, advocacy, research, education

Version

Version	Date	Status
1.0	27 October 2022	Working document – for consultation
1.1	1 November 2022	Executive Summary included

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1. Executive Summary

The purpose of this Orthopaedic Service Activity Analysis (this document) is to provide a snapshot of paediatric orthopaedic activity and trends as background information for clinical service and other health planning activities.

This document includes information related to NSW residents (aged 16 years and under) demand for hospital-based orthopaedic including place of treatment and Sydney Children's Hospitals Network (SCHN) orthopaedic related activity (Emergency, admitted and non-admitted).

The analysis uses five-years of activity data for the financial years 2016/17 to 2020/21. Data sources include Ministry of Health (MoH) Emergency Department Activity Analysis (EDAA) tool and for admitted activity FlowInfo tool. Departmental admitted and non-admitted data was sourced from the SCHN Management Service and Analytics Unit (MSAU).

1.1 NSW Residents

Emergency Care

In 2020/21 there were 121,739 orthopaedic-related ED presentations reported for NSW residents aged 16 years and under and the number of presentations increased from 113,357 in 2016/17 (7%).

Children living in Hunter New England Local Health District (HNELHD) account for the highest number of presentations, followed by residents of South Western Sydney Local Health District (SWSLHD) and Western Sydney Local Health District (WSLHD). With the exception of Far West Local Health District (FWLHD) and Northern Sydney Local Health District Local Health District (NSLHD), ED presentations have increased for residents of all other LHDs.

Injuries to the wrist and hand/elbow and forearm account for 45% of presentations and the number has increased by 2% (6,181) from 49,563 in 2016/17 to 55,684 in 2020/21.

In 2020/21 80% of ED presentations were treated within the LHD of residence compared with 82% in 2016/17. The number of children treated 'locally' has increased by 5% (4,242) from 92,695 in 2016/17 to 96,937 in 2020/21. The percent treated locally within Murrumbidgee Local Health District (MLHD) has declined from 87% in 2016/17 to 76% in 2020/21. The percent treated locally for Nepean Blue Mountains Local Health District (NBMLHD) and SWSLHD was 80%, 65% for Sydney Local Health District (SydLHD), 46% for South Eastern Sydney Local Health District (SESLHD) and 33% for WSLHD

Admission rates showed wide variation dependent on age and residential LHD. In 2020/21 6% of NSW resident ED presentations were admitted and for those in the 0-4 and 5-9 age group 7%. Children living in the Sydney region are more likely to be admitted (WSLHD – 8%, SydLHD – 7%, SWSLHD – 7% and NBMLHD – 7%). Conversely children living in Southern New South Wales Local Health District (SNSWLHD) are less likely to be admitted (rate of 2%), FWLHD – 3%, Northern New South Wales Local Health District (NSWLHD) – 4% and Western New South Wales Local Health

District (WNSWLHD) – 4%. Highest rate of admissions were for WSLHD residents aged 5 – 9 years (10%) with a similar rate in this age group for NSLHD and NBMLHD residents.

Admitted Care

Over the five year period orthopaedic inpatient activity for NSW residents has increased. In 2020/21 there were 18,747 inpatient separations compared with 16,747 (11% increase) and bed days utilised from 30,584 to 33,845 (10%)

Of the total 86,487 orthopaedic inpatient separations over the five-year period, 66,955 (77%) were from NSW public hospitals, 14,544 (17%) from the private sector and 4,988 (6%) from interstate hospitals. 32% of public hospital separations were from SCHN hospitals (21,465), 14% (9.203) from hospitals in HNELHD, 8% (5,652) from SWSLHD hospitals and 8% (5,555) from NSLHD hospitals.

Children aged between 5 and 15 account for 70% of orthopaedic separations and this proportion has remained relatively stable year on year. Separations in each age group have increased with the biggest increase for NSW residents aged 14 – 16 years (17%).

NSW residents are admitted for a wide variety of orthopaedic related conditions requiring medical or surgical care. Injuries to the limb (closed reduction of fractured radius, closed reduction of proximal phalanx of the hand) account for 44% of separations.

Other orthopaedics – surgical accounted for 44% of total separations with 8,209 separations compared with 7,061 in 2016/17 (16% increase). High volume procedures included removal of pin, screw or wire, not elsewhere classified, closed reduction of fracture of distal humerus with internal fixation, removal of plate, rod or nail, not elsewhere classified, etc.).

In 2020/21, the majority of HNELHD residents were treated within the LHD (74%), for MNCLHD residents – 79%, for NNSWLHD – 80%. The proportion was significantly lower for SESLHD (21%), 26% for SLHD, 10% for WSLHD and 18% FWLHD.

1.2 Sydney Children's Hospitals Network

Emergency Care

SCHN Emergency Departments accounted for a total of 98,649 presentations in 2020/21 and 15,455 (16%) of the total had an orthopaedic-related diagnosis. This is compare with 14% in 2016/17.

Orthopaedic presentations have increased by 16% over the five-years since 2016/17. CHW presentations have increased by 25% from 7,067 to 8,852 and SCH by 6% from 6,231 to 6,603.

Admission rates vary by hospital and age group. In 2020/21 11% of SCHN presentations were admitted. (This contrasts with the admission rate for NSW residents 16 years and under where the rate was 6% for all presentations). For CHW 14% of all presentations were admitted and 8% for SCH ED presentations.

SCHN Triage Category 1 and 2 presentations have increased by 99% from 250 to 497 and the proportion of total presentations has increased from 2% to 3% over the period. For CHW presentations in these categories increased from 113 to 324 (187%). For SCH triage 1 and 2 presentations increased from 137 to 173 (26%).

Admitted Care

In 2020/21 **SRG 49 Orthopaedics** accounted for 9.3% of total SCHN separations and 8.0% of bed days. For CHW this activity comprised 9% of separations and 8.2% of bed days and for SCH 10% of separations and 7.9% of bed days.

Overall, the Network's admitted orthopaedic activity has increased over the period. SCHN separations increased by 14% from 4,653 to 5,283 and bed days by 5% from 11,805 to 12,389. CHW separations increased from 3,052 to 3,537 (16%) and bed days from 8,148 to 8,756 (7%). SCH separations increased from 1,601 to 1,746 (9%) whereas bed days declined from 3,657 to 3,633 (-1%).

Some 60% of SCHN orthopaedic activity is planned and the proportion has declined to 52% in 2019/20 and 2020/21, assuming the impact of COVID pandemic restrictions. Whilst the number of planned separations has declined by 3% from 2,831 to 2,760, in contrast emergency activity increased by 44%.

In 2020/21 surgical activity accounted for 62% of SCHN separations with the same proportion of CHW and SCH. 67% of SCHN orthopaedic bed days were surgical and the proportion has increased from 63% in 2016/17. CHW proportion has increased from 65% in 2016/17 to 68% in 2020/21. SCH proportion has increased from 60% to 67%.

In 2020/21 54% of SCHN separations were categorised as 'specialist paediatric' – a decrease from 59% in 2016/17. Specialist paediatric separations have increased by 3% (89) from 2,761 to 2,850. The proportion of specialist paediatric activity varies dependent on the where the patient lives. Over 90% of separations for children living in ACT, MLHD, SNSWLHD, MNCLHD and WNSWLHD was specialist paediatric. The rate for SESLHD residents was 36% in 2020/21, WSLHD 38%, NSLHD 61%, SydLHD 41%.

In 2020/21 30% of the separations were for children living in WSLHD and the number of separations has increased by 21% from 1,293 to 1,569. Separations for SESLHD increased by 13% from 727 to 823 and SWSLHD increased by 23% from 654 to 804.

Total separations for residents in the SCHN local catchment LGAs accounted for 22% of total orthopaedic separations in 2016/17 and 23% in 2020/2. The proportion of separations categorised as specialist paediatric was low - 39% in 2016/17 and 31% in 2020/21

Non-admitted care

In 2020/21 there were 70,927 occasions of service (OOS) reported for combined Orthopaedic Departments (CHW and SCH) compared with 35,161 in 2016/17 (102% increase). Non-admitted activity for CHW increased from 10,935 in 2016/17 to 51,028 (101%) and SCH activity increased from 10,935 to 19,949 (83%).

Individual patient numbers for the combined Departments increased from 12,767 to 15,960 (25%). SCH patient numbers increased from 3,901 to 4,550 (17 %) and CHW numbers increased from 8,866 to 11,440 (29%). This represents an increase of OOS/patient from 2.7 in 2016/17 to 4.4 in 2020/21 across the Network, for CHW from 2.7 to 4.5 and for SCH from 2.8 to 4.4.

- *Individual in-person contact* accounts for the majority of orthopaedic service OOS (97% in 2020/21) with an increase of 96% from 25,060 in 2016/17 to 68,680 in 2020/21. CHW OOS have increased by 103% over the period from 24,131 to 48,981. SCH OOS have increased by 80% from 10,929 to 19,706.
- The list of individual clinical provider types was 25 in 2016/17 and 24 in 2020/21. For CHW the clinical providers has increased from 13 to 21 and for SCH from 15 to 16. Of note is that Registered Nurse activity was relatively low (407 in 2019/20) however in 2020/21 there a significant increase reported (13,476 OOS) - 5,862 for CHW and 7,614 in SCH.

2. Introduction

The purpose of this document is to provide a summary of current and historical paediatric orthopaedic activity in NSW and SCHN to inform clinical service and operational planning.

2.1 Data sources

All service planning activities utilise the NSW Health endorsed service planning guidelines, tools and data sources, analysis and interpretations systems and tools. These tools and resources have been designed to inform robust service and capital asset planning at a Local Health District, Specialty Health Network and state wide level over the next 20 years.

1. **Ministry of Health (MoH). Emergency Department Activity Analysis (EDAA)** contains 15 years of Emergency Department (ED) activity data for NSW public facilities (does not contain private and interstate data). The data in the tool is primarily sourced from the NSW Health Emergency Department Data Collection. The tool provides health service planners the capability to analyse ED activity by LGA and place of treatment.

2. **MoH FlowInfo** contains 20 years of data on admitted patients treated in Public and Private NSW facilities, NSW residents treated in Interstate Public facilities and interstate residents treated in NSW public facilities. Analysis can be undertaken a range of variables including patient details, hospital and LHD of treatment, admission and discharge details, diagnosis and procedures.

   The health system uses range of classification systems to code or group patient activity including AR-DRG and ICD-10-AM. With over 1,500 AR-DRGs, 399 unique classes for admitted patient care and close to 20,000 diagnosis and 6,000 procedures ICD-10-AM codes there are too many categories for health services planning. [1] . In FlowInfo:

   - AR - DRGs have been mapped *Enhanced Service Related Groups (ESRG) and Service Related Groups (SRG)*. ESRG/ SRG is a method of grouping hospital inpatient records into categories corresponding to clinical divisions of hospital activity and calculation of activity projections. SRG V6.0 has 45 categories.
   - *The Specialist Paediatric Activity Flag*, included in FlowInfo application, is a data item based on an algorithm which applied to a number of criteria, to identify admitted patient episodes that would typically be expected to be undertaken within a specialist paediatric hospital rather than in another hospital.

   While SRGs and ESRGs have been specifically created for planning purposes, there are limitations as they:

   - Represent a standard that does not necessarily reflect how any single hospital organises its services.
   - Are limited by the characteristics available in the underlying data.

[1] Health Policy Analysis 2020, Update of Service Related Groups (SRGs) and Enhanced Service Related Groups (ESRGs) (version 6) – Final report. NSW Ministry of Health, Sydney.

3. **SCHN Admitted activity.** Dataset of five-years of patient level data of all separations for the period 2016/17 to 2020/21 with over 20 data elements sourced from MSAU.
4. **SCHN non-admitted patient (NAP) activity** Data set of five-years of activity for departments Orthopaedics – W and Orthopaedics - R

Table 1 - Data sources summary

EMERGENCY DEPARTMENT ACTIVITY DATA		
MoH CaSPA EDAA21	**Diagnosis ICD-10-AM Diagnosis Sub Chapters**	**Diagnosis Code And Long Name**
	M00-M25 Arthropathies	M00.99 - Pyogenic arthritis, unspecified, site unspecified M06.99 - Rheumatoid arthritis, unspecified, site unspecified M10.99 - Gout, unspecified, site unspecified M13.99 - Arthritis, unspecified, site unspecified M19.99 - Arthrosis, unspecified, site unspecified M20.0 - Deformity of finger(s) M22.0 - Recurrent dislocation of patella M23.99 - Unspecified internal derangement of unspecified ligament or unspecified meniscus M24.85 - Other specific joint derangements, not elsewhere classified, pelvic region and thigh M25.09 - Haemarthrosis, site unspecified M25.49 - Effusion of joint, site unspecified M25.51 - Pain in a joint, shoulder region M25.52 - Pain in a joint, upper arm M25.53 - Pain in a joint, forearm M25.54 - Pain in a joint, hand M25.55 - Pain in a joint, pelvic region and thigh M25.56 - Pain in a joint, lower leg M25.57 - Pain in a joint, ankle and foot M25.59 - Pain in a joint, site unspecified M25.99 - Unspecified joint disorder, site unspecified
	M30-M36 Systemic connective tissue disorders	
	M40-M54 Dorsopathies	M43.6 – Torticollis M48.99 – Unspecified spondylopathy, site unspecified M51.9 – Intervertebral disc disorder, unspecified M53.99 – Unspecified dorsopathy. Site unspecified M54.19 – Radiculopathy, site unspecified M54.2 – Cervicalgia M54.3 – Sciatica M54.5 – Low back pain M54.6 – Pain in thoracic spine M54.99 – Unspecified dorsalgia, site unspecified.
	M60-M79 Soft tissue disorders	
	M80-M94 Osteopathies and chondropathies	
	M95-M99 Other disorders of the musculoskeletal system and connective tissue	
	S40-S49 Injuries to the shoulder and upper arm	
	S50-S59 Injuries to the elbow and forearm	
	S60-S69 Injuries to the wrist and hand	
	S70-S79 Injuries to hip and thigh	
	S80-S89 Injuries to the knee and lower leg	
	S90-S99 Injuries to the ankle and foot	
	T00-T07 Injuries involving multiple body regions.	

ADMITTED ACTIVITY DATA		
MoH CaSPA FlowInfo21	Service Related Group (V6)	Enhanced Service Related Group (V6)
	SRG 49 – Orthopaedics V	ESRG 491 – Injuries to limbs – medical ESRG 492 – Wrist & hand procedures incl carpal tunnel ESRG 494 – Knee procedures ESRG 495 – Other orthopaedics – Surgical ESRG 496 – Hip replacement / revisions ESRG 497 – Knee replacement / revisions ESRG 498 – Hip fracture ESRG 499 – Other orthopaedics – non surgical
SCHN MSAU	Orthopaedics – R Orthopaedics - W	As discharging specialty As discharging specialty
NON ADMITTED ACTIVITY DATA		
SCHN MSAU	**Department Clinic**	**Service Unit Name**
	Orthopaedics - R	Allied Health Orthopaedic SCH Ortho SCH PAC Ortho C1W Scoliosis SCH
	Orthopaedics - W	Allied Health Orthopaedic CHW Gait Service Leg Lengthening Service Orthopaedic Clinic Orthopaedic Congenital Hand Service

3. Trends in demand - NSW Residents

Resident demand refers to the volume of activity generated by a defined population (in this instance NSW residents aged 16 years and under) irrespective of the location of the treating hospital.

3.1 Emergency Care

- NSW residents aged 16 years and under accounted for a total of 613,979 Emergency Department presentations in 2020/21 and 121,739 (20%) of the total had an orthopaedic related diagnosis.
- Total orthopaedic-related presentations have increased by 7% (8,152) over the five years since 2016/17.

Table 2 – NSW Residents Emergency Department presentations by Diagnosis Sub -Chapter

DIAGNOSIS SUB CHAPTER	2016/17	2017/18	2018/19	2019/20	2020/21
M00-M25 Arthropathies	3119	3299	3491	3289	4541
M30-M36 Systemic connective tissue disorders	83	80	56	56	38
M40-M54 Dorsopathies	2870	3011	3017	2554	2820
M60-M79 Soft tissue disorders	17969	17878	18792	14656	16672
M80-M94 Osteopathies and chondropathies	447	480	542	476	554
M95-M99 Other disorders of the musculoskeletal system and connective tissue	16	22	5	3	3
S40-S49 Injuries to the shoulder and upper arm	8781	8772	8558	7532	9191
S50-S59 Injuries to the elbow and forearm	23881	24263	23914	22185	25923
S60-S69 Injuries to the wrist and hand	25622	26063	26064	23706	29761
S70-S79 Injuries to the hip and thigh	1306	1266	1253	1186	1264
S80-S89 Injuries to the knee and lower leg	10620	10501	9913	8995	10999
S90-S99 Injuries to the ankle and foot	18382	18538	18295	16127	19589
T00-T07 Injuries involving multiple body regions	491	501	467	416	384
Total presentations	**113587**	**114674**	**114367**	**101181**	**121739**

Source: *MoH EDAA21, NSW Residents aged 16 years and under*

- **Triage category.** Patients triaged as category 3 and 4 accounted for 78% of presentations with an increase of 11% from 88,195 in 2016/17 to 97,542 in 2020/21.
- **Diagnosis.** Analysis by diagnoses showed that Injuries to the wrist and hand/elbow and forearm account for 45% of presentations and the number has increased by 2% (6,181) from 49,563 in 2016/17 to 55,684 in 2020/21.
- **Age Group.** The majority of ED patients were aged between 5 and 15 years with an increase of 9% in presentations from 83,590 to 90,938. ED presentations for young children aged 0 – 5 years declined by -3% (-698) from 20,432 to 19,734.

- **Admission rate.** There is a wide variation in admission rates for the ED and primarily related to age and residential LHD. In 2020/21 6% of ED NSW resident presentations were admitted and 7% for children in the 0-4 and 5-9 age group. Children living in the Sydney region are more likely to be admitted (WSLHD – 8%, SydLHD – 7%, SWSLHD – 7% and NBMLHD – 7%). Conversely children living in SNSWLHD are less likely to be admitted (rate of 2%), FWLHD – 3%, NNSWLHD – 4% and WNSW – 4%. The highest admission rates were for WSLHD residents aged 5 – 9 years (10%) and similar for NSLHD and NBMLHD.
- **Mode of arrival.** In 2020/21 ambulance (and other emergency transport) accounted for 6% of presentations and remained stable in the previous years. Patients arriving by private vehicle accounted for the most of the growth in ED presentations from 103,581 in 2016/17 to 112,838 in 2020/21.
- **Place of residence.** Patients living in HNELHD account for 15% of NSW resident presentations and the number of presentations has increased by 1,193 (7%) between 2016/17 and 2020/21. SWSLHD residents account for a further 10% with an additional 1,442 presentations in 2020/21 compared with 2016/17. WSLHD residents account for 9% of the total with an increase of 2,003 presentations (22%) over the period. SESLHD residents account for 7% with an increase of 1,282 presentations (13%). ED presentations have increased for residents of all other LHDs, with the exception of FWLHD and NSLHD.
- **Place of treatment.** In 2020/21 80% of ED presentations were treated within the LHD of residence (i.e. 'locally') compared with 82% in 2016/17. The number of children treated 'locally' has increased by 5% (4,242) from 92,695 in 2016/17 to 96,937 in 2020/21.
- The proportion of residential demand met within the LHD (i.e. **the level of self-sufficiency**) varies between LHDs. The data shows that the level of self-sufficiency is high (over 95%) for NNSWLHD, WNSWLHD, ISLHD, CCLHD, MNCLHD, HNELHD and FWLHD. Over the period the level of self-sufficiency for MLHD has declined from 87% to 76% with the number of 'outflows' increasing from 118% from 714 to 1,553. The level of self-sufficiency is relatively low for NBMLHD and SWSLHD (80%), SydLHD (64%) and lower still for SESLHD (46%) and WSLHD (33%).

3.2 Admitted Care

Data was sourced from MoH CaSPA **FlowInfoV21 SRG 49 Orthopaedics** and includes admitted activity for the financial years 2016/17 to 2020/21. Over the five year period:

- Inpatient separations for NSW residents increased by 11% (1,816) from 16,931 to 18,747 with an average of 17,297 separations per year. Bed days utilised increased by 10% from 30,584 to 33,845.
- **Day only stay.** 47% of hospitalisations were day-only and the number of day-only separations has increased by 20% from 7,673 in 2016/17 and 7,764 in 2020/21.
- **Overnight night and longer stay**. Overnight separations increased by 3% from 9,258 to 9,522 and bed days by 7% from 22,911 to 24,559. The average length of stay (excl day only) has increased from 2.5 days to 2.6 days.

- **Age group.** Children between 5 and 14 years accounted for 70% of separations and this proportion has remained relatively stable year on year. Separations in each age group have increased over the period with the biggest increase (17%) for residents 15 years +.
- **LHD of residence.** Residents of HNELHD accounted for the highest number of overnight separations with a decline of -2% (-23 separations) over the period. Separations have increased for residents of WSLHD (12%), SWSLHD (12%), SNSWLHD (60%) and declined for SWSLHD (-7%), WNSWLHD (-12%) and MNCLHD (-17%).

Table 3 – Orthopaedic admitted demand NSW Residents – summary by ESRG

ESRG V6	2016/17	2017/18	2018/19	2019/20	2020/21	Change (n)	Change (%)
491 - Injuries to limbs - medical	5109	4862	4756	4429	5110	1	0%
492 - Wrist & hand proc incl carpal tunnel	1841	1878	1907	1845	2275	434	24%
493 - Hip replacement for trauma	0	0	28	28	38	38	n/a
494 - Knee procedures	738	772	769	695	858	120	16%
495 - Other orthopaedics - surgical	7061	7135	7269	7271	8209	1148	16%
496 - Hip replacement/revision	3	1	35	38	28	25	Sig%
497 - Knee replacement/revision	6	4	28	28	30	24	Sig %
498 - Hip fracture	24	32	43	39	28	4	17%
499 - Other orthopaedics - non-surgical	2149	2257	2568	2092	2171	22	1%
Total Separations	**16931**	**16941**	**17403**	**16465**	**18747**	**1816**	**11%**

Source: *MoH FlowInfo21 SRG 49 Orthopaedics V6 Excl ED only Patient Group: NSW residents 16 years and under*

- **Reason for admission.** NSW residents are admitted for treatment for a wide variety orthopaedic conditions. In 2020/21:
  - Injuries to limb - medical accounted for 44% of total separations with 5,110 separations compared with 5,109 in 2016/17. The high volume procedures included closed reduction of fracture of distal radius, closed reduction of fracture of shaft of radius and ulna, allied health intervention, physiotherapy and closed reduction of proximal phalanx of hand.
  - Other orthopaedics – surgical accounted for 44% of total separations with 8,209 separations compared with 7,061 in 2016/17 – an increase 16% over the period. High volume procedures included removal of pin, screw or wire, not elsewhere classified, closed reduction of fracture of distal humerus with internal fixation, removal of plate, rod or nail, not elsewhere classified, open reduction of fracture of distal humerus with internal fixation and excisional debridement of soft tissue.
  - Knee procedures accounted for 858 separations compared with 738 – an additional 120 separations over the period (16% increase). The portfolio of high volume procedures included arthroscopic reconstruction of knee, arthroscopic reconstruction of cruciate ligament of knee with repair of meniscus, arthroscopic chondroplasty of knee and arthroscopic removal of loose body of knee with debridement, osteoplasty or chondroplasty.
  - Other orthopaedics – non surgical accounted for 12% of total separations with 2,171 separations compared with 2,149 in 2016/17. The high volume procedure performed is

closed reduction of distal radius with a 21% increase in separations over the five year period.

3.2.1 Place of treatment

- Of the five year period of the total 86,487 orthopaedic inpatient separations for NSW residents 66,955 (77%) were from NSW public hospitals, 14,544 (17%) from the private sector and 4,988 (6%) from interstate hospitals.
- 32% of public hospital separations were from SCHN hospitals (21,465), 14% (9.203) from hospitals in HNELHD, 8% (5,652) from SWSLHD hospitals and 8% (5,555) from NSLHD hospitals.

Table 4 – NSW Residents – Place of Treatment summary

HOSPITALS	16/17	17/18	18/19	19/20	20/21	Grand total	Change (n)	Change (%)
NSW Public	13580	13404	13249	12404	14318	66955	738	5%
NSW Private	2627	2742	2959	2888	3328	14544	701	27%
Interstate	724	795	1195	1173	1101	4938	377	52%
Separations	**16931**	**16941**	**17403**	**16465**	**18747**	**86487**		

Source: *MoH FlowInfo21 SRG 49 Orthopaedics V6 Excl ED only Patient Group: NSW residents 16 years and under*

Table 5 – NSW residents – Place of treatment by ESRG – 2020/21

ESRG V6	LHD	Private	SCHN	Interstate	Total
491 - Injuries to limbs - medical	3535	409	857	309	5110
492 - Wrist & hand procedures incl carpal tunnel	931	426	812	106	2275
493 - Hip replacement for trauma	0	0	0	38	38
494 - Knee procedures	197	560	89	12	858
495 - Other orthopaedics - surgical	3869	1745	2144	451	8209
496 - Hip replacement/revision	0	1	2	25	28
497 - Knee replacement/revision	0	2	1	27	30
498 - Hip fracture	12	0	2	14	28
499 - Other orthopaedics - non-surgical	870	185	997	119	2171
Total Separations	**9414**	**3328**	**4904**	**1101**	**18747**

Source: *MoH FlowInfo21 SRG 49 Orthopaedics V6 Excl ED only Patient Group: NSW residents 16 years and under*

- In 2020/21, the majority of HNELHD residents were treated within the LHD (74%), for MNCLHD residents – 79%, for NNSWLHD – 80%. The proportion is significantly lower for SESLHD with only 21% of residents treated within the LHD, SLHD with 26%, WSLHD with 10% and FWLHD with 18%.
- NSW residents access inpatient services in other states and the majority of cross border flows are from Murrumbidgee and Far West LHDs to Victorian Hospital, Southern LHD to

ACT and Northern and Hunter New England LHDs to Queensland. There 1,928 separations stated for ACT hospitals, 1,127 separations for Victorian Hospitals and 986 for Queensland Hospitals however data reliability issues are noted.

- In 2020/21 LHD hospitals provided for 69% of NSW resident demand for medical injuries to limbs, 47% of other surgical orthopaedics and 40% of other orthopaedics – non surgical. SCHN provided for 26% of total resident demand with 36% for wrist and hand procedures and 46% of other orthopaedics – non surgical.

Table 6 – NSW residents – Place of treatment by age group – 2020/21

Age Group	LHD	Private	SCHN	Interstate	Total	LHD	Private	SCHN	Interstate	Total	ALL
	INTERVENTIONAL					MEDICAL					
Nil	0	0	0	234	234	0	0	0	124	124	**358**
0 – 4 yrs	604	196	880	91	1771	773	61	584	76	1494	**3265**
5 – 9 yrs	1472	416	816	127	2831	1617	163	512	110	2402	**5233**
10 – 14 yrs	2248	1411	1132	161	4952	1772	331	635	111	3849	**7801**
15 yrs+	673	711	220	46	1650	255	39	125	21	440	**2090**
Total	**4997**	**2734**	**3048**	**659**	**11438**	**4417**	**594**	**1856**	**442**	**7309**	**18747**

Source: *MoH FlowInfo21 SRG 49 Orthopaedics V6 Excl ED only Patient Group: NSW residents 16 years and under*

- Separations from private hospitals/day procedure centres increased by 26% from 2,627 to 3,328. Bed days have increased by 28% from 3,679 to 4,699. The majority of activity is day only (60% of separations). Almost all (94%) of the private hospital activity is planned with a 16% increase in separations (354) from 2,127 to 2,481 over the five year period.
- Surgical procedures account for 80% of private hospital activity with the high volume procedures being removal of pin, screw or wire not elsewhere classified, removal of plate, rod or nail, not elsewhere classified, arthroscopic reconstruction of knee, open reduction of fracture clavicle and release of tendon sheath of hand.

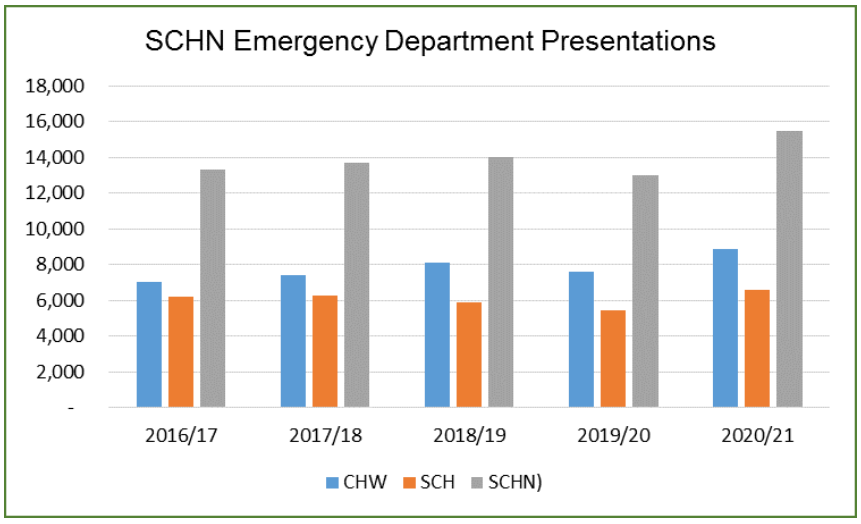
4. Trends in supply - SCHN

The SCHN provides tertiary and quaternary level services to residents of NSW, and those from interstate and overseas. District level services are provided to residents of selected Statistical Local Areas (SLA) in SESLHD and WSLHD. The following is an analysis of SCHN Emergency and admitted activity for all patients utilising data from MoH EDAA21 and FlowInfo21 SRG Orthopaedics planning tools.

4.1 Emergency Care

- SCHN Emergency Departments accounted for a total of 98,649 presentations in 2020/21 and 15,455 (16%) of the total had an orthopaedic-related diagnosis. This is compared with 14% of total presentations in 2016/17.
- SCHN orthopaedic-related presentations have increased by 16% (2,157) over the five-years since 2016/17. CHW presentations have increased by 25% (1,785) from 7,067 to 8,852 and SCH by 6% (372) from 6,231 to 6,603.

Figure 1 - SCHN Emergency Presentations



Source: *MoH EDAA21, SCHN Emergency Department activity Patient population: All ages*

- **Triage category.** Patients triaged as category 3 and 4 accounted for 96% of total SCHN presentations and this proportion has remained stable over the period. The number of category 3 and 4 presentations have increased by 5% from 12,775 to 14,664.
  - For CHW category 3 and 4 accounted for 95% of presentations in 2020/21 compared with 98% in 201617 and the number increased by 22% (1,498) from 6,900 to 8,398. For SCH category 3 and 4 accounted for 95% of presentations with a growth of 7% from 5,875 to 6,266.

- Category 1 and 2 have increased by 99% from 250 to 497 and the proportion of total presentations has increased from 2% to 3%. For CHW triage 1 and 2 presentations increased from 113 to 324 (187%) and accounted for 4% of presentations in 2020/21 and 2% in 2016/17. For SCH these presentations increased by from 137 to 173 (26%) and the proportion accounted for 3% in 2020/21 and 2% in 2016/17.

➢ **Diagnosis.** Injuries of the elbow/forearm and wrist/hand accounted for over half the ED presentations to SCHN and the number of presentations has grown by 15% (925) from 6,124 to 7,049.

- For CHW 46% of presentations were associated with these injuries and the number increased by 18% (643) over the period from 3,481 to 4,124. The presentations for SCH accounted for 44% (282) with and increased by 11% (282) from 2,643 to 2,925.

- There has been a significant increase (61%) in soft tissue disorders and the majority with a non-specific diagnosis such as pain in the limb. It is interesting to note that the increase in presentations occurred from 2018/19 onwards. The pattern was similar for both hospitals.

Table 7 – SCHN Emergency Department presentations by Diagnosis Sub-Chapter

DIAGNOSIS SUB CHAPTER	2016/17	2017/18	2018/19	2019/20	2020/21
M00-M25 Arthropathies	542	561	555	461	698
M30-M36 Systemic connective tissue disorders	43	30	28	33	19
M40-M54 Dorsopathies	363	391	449	387	417
M60-M79 Soft tissue disorders	1257	1418	2376	2099	2020
M80-M94 Osteopathies and chondropathies	141	133	197	154	194
M95-M99 Other disorders of the musculoskeletal system connective tissue	16	20	2	0	2
S40-S49 Injuries to the shoulder and upper arm	1488	1509	1302	1228	1435
S50-S59 Injuries to the elbow and forearm	3506	3536	3432	3189	3736
S60-S69 Injuries to the wrist and hand	2618	2740	2578	2492	3313
S70-S79 Injuries to the hip and thigh	216	217	232	227	247
S80-S89 Injuries to the knee and lower leg	1469	1483	1178	1096	1362
S90-S99 Injuries to the ankle and foot	1568	1605	1630	1590	1953
T00-T07 Injuries involving multiple body regions	71	55	59	83	59
Total presentations	**13298**	**13698**	**14018**	**13039**	**15455**

Source: *MoH EDAA21, SCHN Emergency Department activity Patient population: All ages*

➢ **Age Group**. The analysis by age group shows that the children aged between 5 and 15 years accounted for 69% of presentations and separations in this age group has increased by 4% over the period. For CHW presentations have increased by 21% (1,429) from 4,515 to 5,954 and for SCH the growth of 9% from 4,335 to 4,736 accounted for an additional 401 presentations.

➢ **Mode of arrival.** In 2020/21 ambulance (and other emergency transport) arrivals to SCHN accounted for 6% of the total compared with 7% in 2016/17. Patients arriving by their own transport accounted for most of the growth in presentations with 14,436 in 2020/21

compared with 12,282 in 2016/17. For CHW ambulance arrivals accounted for 7% and 8% in 2016/17. Private vehicle arrivals grew by 28% from 6,427 to 8,219. For SCH ambulance arrivals accounted for 6% and remained stable year on year. Private vehicle have increased by 6% from 5,855 to 6,217.

- **Admission rate.** ED presentation admission rates vary by hospital and age group. In 2020/21 11% of SCHN presentations were admitted, higher (14%) for children aged 0 to 4 years and 11% for those in the 5 to 15 year age group. This contrasts with the admission rate for NSW residents 16 years and under where the rate was 6% for all presentations and 7% for residents aged 0 – 4 years.
  - For CHW 14% of all presentations were admitted, 14% of those aged 0 to 4 years and 13% of children aged 5 to 15 years were admitted in 2020/21.
  - For SCH 8% of all presentations were admitted, 12% of those 0 to 4 years and 8% of those aged 5 to 15 years.
  - Over the five year period the number of SCHN ED presentations admitted increased by 9% from 1,622 to 1,763. For CHW admitted presentations increased by 9% from 1,112 to 1,210 and SCH admitted presentations increased by 8% from 510 to 553.

4.2 Admitted care

- In 2020/21 **SRG 49 Orthopaedics** accounted for 9.3% of total SCHN separations and 8.0% of total bed days. For CHW this activity comprised 9% of total separations and 8.2% of total bed days and for SCH - 10% of total separations and 7.9% of total bed days.

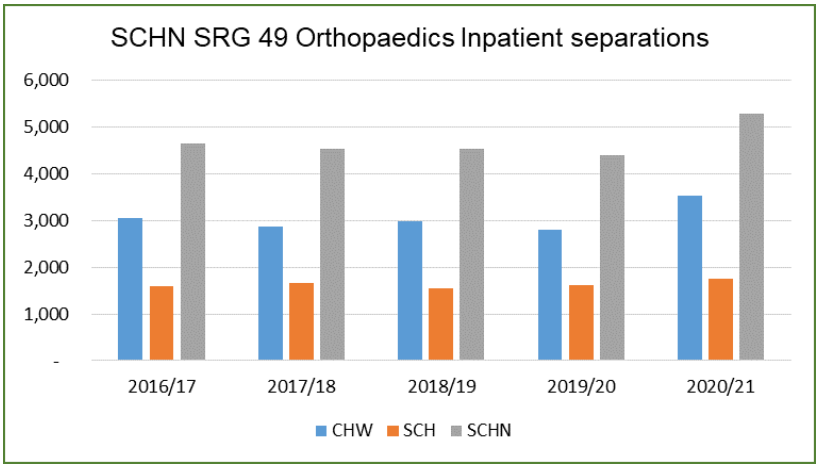
Table 8 – SCHN admitted activity summary

	16/17	17/18	18/19	19/20	20/21	16/17	17/18	18/19	19/20	20/21
	SEPARATIONS					BED DAYS				
SRG 49 -Orthopaedics	4653	4531	4533	4409	5283	11805	11123	12107	11296	12389
TOTAL SRGS	48490	49201	51799	50578	56586	147374	146606	156819	152499	153351
% Orthopaedics	9.6%	9.2%	8.8%	8.7%	9.3%	8.0%	7.6%	7.7%	7.4%	8.0%

Source: *MoH FlowInfo21 SRG49 Orthopaedics V6 (Excl ED only) Patient Group: all ages*

- Over the five year period SCHN separations increased by 14% from 4,653 to 5,283 and bed days by 5% from 11,805 to 12,389. CHW separations increased by 16% from 3,052 to 3,537 and bed days by 7% (608) from 8,148 to 8,756. SCH separations increased by 9% 1,601 to 1,746 whereas bed days declined by -1% (-24) from 3,657 to 3,633.

Figure 2 – SCHN Inpatient separations – SRG 49 Orthopaedics



Source: *MoH FlowInfo21 SRG49 Orthopaedics V6 (Excl ED only) Patient Group: all ages*

- **Day-only activity.** In 2020/21 51% of SCHN activity was day-only, an increase from 46% in 2016/17. Day only separations increased by 26% from 2,134 to 2,681. CHW proportion of day-only activity has increased from 45% to 50% and day-only separations increasing by 29% from 1,375 to 1,768. SCH proportion has increased from 47% to 52% with an increase of 20% in separations from 759 in 2016/17 to 913 in 2020/21.

- **Overnight activity.** SCHN separations increased by 3% (83) from 2,519 to 2,602 and bed days with a minimal change from 9.671 to 9,708. CHW separations increased by 5% and bed days by 3%. SCH overnight separations declined by -1% and bed days by -6%. The Average Length of Stay (ALOS) excluding day-only activity ranged between 3.7 to 4.1 days. CHW ALOS ranged from 4.0 days to 4.3 days and SCH from 3.3 to 3.8 days.

- **Urgency of admission.** Some 60% of SCHN orthopaedic activity is planned and the proportion has declined to 52% in 2019/20 and 2020/21 and assuming reduction in planned surgical activity was associated with the COVID restrictions. Whilst the number of planned separations has declined by 3% from 2,831 to 2,760, in contrast emergency activity increased by 44%. Planned activity for CHW declined by 3% and the proportion declined from 60% to 50%. Emergency separations increased by 49% from 1,165 to 1,733. SCH proportion of planned activity has declined from 63% to 56%. Planned separations declined by -2% from 1,004 to 980 and emergency activity increased by 33% from 573 to 764.

- **Medical/Interventional split** In 2020/21 surgical activity accounted for 62% of SCHN separations with the same proportion of CHW and SCH. 67% of SCHN orthopaedic bed days were surgical and the proportion has increased from 63% in 2016/17. CHW proportion has increased from 65% in 2016/17 to 68% in 2020/21. SCH proportion has increased from 60% to 67%.

    - The volume of SCHN surgical activity has increased, Separations increased by 16% (459) from 2,807 and 3,266 and bed days by 12% (904) from 7,489 to 8,353. CHW separations increased by 14% (268) from 1,923 to 2,191 and bed days by 13% (671) from 5,263 to 5,934. SCH separations increased by 22% (191) from 886 to 1,075 and bed days by 11% (233) from 2,186 to 2,419.

- **Specialist Paediatric Flag.** In 2020/21 54% of SCHN separations were categorised as 'specialist paediatric' – a decrease from 59% in 2016/17. Specialist paediatric separations have increased by 3% (89) from 2,761 to 2,850. The proportion of specialist paediatric activity varies dependent on the where the patient lives. Over 90% of separations for children living in ACT, MLHD, SNSWLHD, MNCLHD and WNSWLHD was specialist paediatric. The rate for SESLHD residents was 36% in 2020/21, WSLHD 38%, NSLHD 61%, SydLHD 41%.

Table 9 - Orthopaedic activity - Specialist Paediatric Flag

	Catchment	16/17	17/18	18/19	19/20	20/21	Change (n)	Change (%)
Non-specialist paediatric	Local SCHN	617	634	598	708	829	212	34%
	Other LGAs	1275	1235	1273	1281	1604	329	26%
	Total	1892	1859	1871	1989	2433	541	29%
Specialist paediatric	Local SCHN	397	375	359	310	368	-29	-7%
	Other LGAs	2364	2297	2303	2110	2482	118	5%
	Total	2761	2672	2662	2420	2850	89	3%
Total	Local SCHN	1014	1009	957	1018	1197	183	18%
	Other LGAs	3639	3522	3576	3391	4086	444	12%
	Total	4653	4531	4533	4409	5283	630	14%

Source: *MoH FlowInfo21 SRG49 Orthopaedics V6 (Excl ED only) Patient Group: all ages*

- **LHD of residence**. In 2020/21 30% of the separations were for children living in WSLHD and the number of separations has increased by 21% from 1,293 to 1,569. Separations for SESLHD increased by 13% from 727 to 823 and SWSLHD increased by 23% from 654 to 804.
  - Total separations for residents in the SCHN local catchment LGAs accounted for 22% of total orthopaedic separations in 2016/17 and 23% in 2020/21 with an increase of 18% over the period from 1,014 to 1,197. The proportion of separations categorised as specialist paediatric was low - 39% in 2016/17 and 31% in 2020/21

4.3 Non-admitted care

Data for the following Departments was sourced from the SCHN Management Support and Analytics Unit (MSAU) for the analysis of non-admitted activity for the financial years 2016/17 to 2020/21:

- Orthopaedics - R
- Orthopaedic - W

The analysis has included the Department's service Units, how the service was provided (modality), who provided the service (Provider Type), patient residential LHD.

Between 2016/17 and 2020/21 occasions of service (OOS) for the combined Departments have increased by 102% - CHW by 101% and SCH by 83%. The number of individual patients for the combined Departments has increased by 25% and for SCH by 17 % and for CHW by 29%.

This represents an increase of OOS/patient from 2.7 in 2016/17 to 4.4 in 2020/21 across the Network, for CHW from 2.7 to 4.5 and for SCH from 2.8 to 4.4.

Table 10 – SCHN Orthopaedic Service Non-admitted activity summary

DEPARTMENTS	16/17	17/18	18/19	19/20	20/21	16/17	17/18	18/19	19/20	20/21
	Occasions of Service					Patients (Unique MRNs)				
Orthopaedic - R	10935	10820	10586	11480	19949	3901	3951	3938	4133	4550
Orthopaedic - W	24226	25874	28179	36882	51028	8866	9557	9950	9802	11440
Total	35161	36694	38765	48362	70977	12767	13508	13888	13920	15960

Source: *SCHN MSAU Accessed May 2022*

Modality

A range of modalities are utilised to provide non-admitted services to patients/families including in-person (individual or group), telephone, email, case-conferencing.

- *Individual in-person contact* accounts for the majority of orthopaedic service OOS (97% in 2020/21) with an increase of 96% from 25,060 in 2016/17 to 68,680 in 2020/21. CHW OOS have increased by 103% over the period from 24131 to 48,981. SCH OOS have increased by 80% from 10,929 to 19,706.
- *Audiovisual (telehealth).* An initial and significant uptake in 2019/20 (989 OOS and involving 629 individual patients) and 99% of this activity was reported by CHW. SCH recorded 30 OOS and 26 patients. The data shows a sharp decline in 2020/21 to 301 OOS and 189 individual patients.
- *Non-client contact – case planning and review.* Minimal activity was reported for this modality until 2019/20 with 518 OOS and 453 patients. CHW accounting 454 OOS and 400 patients and for SCH 64 OOS and 56 patients. In 2020/21 SCHN reported 663 OOS and 575 patients.
- *Other technologies – individual.* The initial uptake was reported in 2019/20 with 455 OOS and 311 individual patients increasing to 663 OOS and 393 patients in 2020/21.

Provider type

- Over the five –year period the composition of the multidisciplinary team involved in the provision of SCHN non-admitted orthopaedic services 25 clinician providers in 2016/17 and 24 in 2020/21. For CHW clinical providers has increased from 13 to 21 and for SCH from 15 to 16.
- The addition of new clinical providers (Allied Health Assistant and Occupational Therapist) and the increase in the reported Physiotherapist activity has contributed to the increased number of OOS reported in the financial years 2019/20 and 2020/21.
- Registered Nurse activity was relatively low (407 in 2019/20) however in 2020/21 there a significant increase in OOSs reported (13,476) - 5,862 for CHW and 7,614 in SCH.

5. Glossary of Terms

Term	Description
AR-DRG	The **Australian Refined Diagnosis Related Groups** (AR-DRGs) is a classification system, which provides a clinically meaningful way to relate the number and type of patients treated in a hospital to the resources required by the hospital. AR-DRGs group patients with similar diagnoses requiring similar hospital services.
Bed days	Number of full or partial days of stay for patients who were admitted to a hospital for an episode of care who underwent a separation during the reporting period
CaSPA	**Clinical Service Planning Analytics** – NSW Ministry of Health planning portal and repository for admitted and Emergency Department activity, activity projection tools and planning resources..
Episode of Care	A period of health care provided with a definite start and finish date. This could be a hospital admission or specialist care in the community or a period of physiotherapy that starts and ends.
Health service demand	Service activity that a catchment population can generate – that is the amount of activity that a defined population uses regardless of where it is accessed
Health service supply	Service activity available to the catchment population – for example the activity supplied by public health facilities in a particular Local Health District
LGA	Local Government Area
LHD	Local Health District
LOS	**Length of Stay** Duration of hospital stay, calculated by subtracting the date the patient is admitted from the day of separation (discharge)
NAPOOS	A **Non-Admitted Patient Occasion of Service** is a non-admitted patient service or a non-admitted patient support activity reported for each provider type and service type combination on each occasion a service is provided to the patient within one non-admitted patient appointment on one calendar day.
NWAU	The **National Weighted Activity Unit** (NWAU) is a measure of Health Service activity expressed as a common unit, against which the National Efficient Price (NEP) is paid. It provides a way of comparing and valuing each public hospital service (whether they be admissions, emergency department presentations or outpatient episodes), by weighting for its clinical complexity. The average hospital service is worth one NWAU – the most intensive and expensive activities are worth multiple NWAUs, the simplest and least expensive are worth fractions of an NWAU
SLA	Statistic Local Area
SRG	Service Related Group

6. Supporting data

6.1 NSW Residents – Emergency Care

Residence LHD Name	2016/17	2017/18	2018/19	2019/20	2020/21	Change (n)	Change (%)
Central Coast	6355	6143	6230	5494	6995	640	10%
Far West	502	451	397	396	447	-55	-11%
Hunter New England	17325	16754	17683	15685	18518	1193	7%
Illawarra Shoalhaven	6669	6581	6839	5704	6953	284	4%
Mid North Coast	4858	4624	5193	4562	5375	517	11%
Murrumbidgee	5644	6108	6328	5446	6423	779	14%
Nepean Blue Mountains	5385	5827	5860	5138	6227	842	16%
Northern	7626	7756	7665	6968	8196	36	7%
Northern Sydney	11258	11664	8914	6871	8442	-2816	-25%
South Eastern Sydney	9752	9801	9576	8697	11034	1282	13%
South Western Sydney	11447	11843	11867	11002	12889	1442	13%
Southern	3901	4097	4367	4123	4726	825	21%
Sydney	5282	5344	5257	4788	5793	511	10%
Western	8407	8117	8292	7413	8542	135	2%
Western Sydney	9176	9564	9899	8894	11179	2003	22%
Grand Total	**113587**	**114674**	**114367**	**101181**	**121739**	**8152**	**7%**

Source: *MoH EDAA21 NSW residents aged 16 years and under*

LHD of residence/treating Hospital	LOCAL	OUTFLOWS		TOTAL	% Local	% SCHN
	Within the LHD	**SCHN**	**Other LHDs**			
Central Coast	6640	32	323	6995	94.9%	0.5%
Far West	428	0	19	447	95.7%	0.0%
Hunter New England	17596	34	888	18518	95.%	0.2%
Illawarra Shoalhaven	6576	66	311	6953	94.6%	0.9%
Mid North Coast	5215	10	150	5375	97.0%	0.2%
Murrumbidgee	4870	20	1533	6423	75.8%	0.3%
Nepean Blue Mountains	4991	446	790	6227	80.1%	7.2%
Northern	8030	6	160	8196	97.9%	0.07%
Northern Sydney	7082	666	694	8442	83.9%	7.9%
South Eastern Sydney	5049	5170	815	11034	45.8%	46.9%
South Western Sydney	10293	1387	1209	12889	79.9%	2.5%
Southern	4587	7	132	4726	97.0%	0.1%
Sydney	3683	1428	682	5793	63.6%	24.7%
Western	8200	35	307	8542	95.9%	0.4%
Western Sydney	3697	5830	1652	11179	33.1%	52.1%
Total presentations 2020/21	**96937**	**15137**	**9665**	**121739**	**79.6%**	**12.4%**

Source: *MoH EDAA21 NSW residents aged 16 years and under*

6.2 NSW residents – Admitted Care

	2016/17	2017/18	2018/19	2019/20	2020/21	Change (n)	Change (%)
Separations	16931	16941	17403	16465	18747	1816	11%
Bed days	30584	29540	33930	30845	33784	3200	10%

Source: *MoH FlowInfo21 SRG 49 Orthopaedics V6 Excl ED only Patient Group: NSW residents 16 years and under*

LHD RESIDENCE	16/17	17/18	18/19	19/20	20/21	16/17	17/18	18/19	19/20	20/21
	SEPARATIONS					BED DAYS				
CCLHD	787	736	735	711	840	1414	1449	1400	1140	1388
FWLHD	62	65	96	100	85	88	118	298	287	311
HNELHD	2349	2208	2245	2106	2403	4225	3786	4133	3804	4289
ISLHD	916	907	960	938	995	1667	1734	1564	1514	1627
MNCLHD	549	514	553	462	549	1110	903	1026	967	934
MLHD	872	869	1018	898	963	1518	1444	2565	2197	2100
NBMLHD	883	870	796	886	1022	1524	1472	1332	1575	1719
NNSWLHD	812	830	836	780	770	1315	1315	1317	1270	1253
NSLHD	2110	2309	2297	1988	2429	3342	3738	3853	3137	3834
SESLHD	1462	1531	1446	1415	1586	2683	2452	2831	2455	2571
SWSLHD	1971	2099	2018	1898	2196	3705	3708	3659	3638	4070
SNSWLHD	510	527	654	631	684	880	916	2007	1974	2319
SYDLHD	848	873	919	870	1009	1525	1593	1732	1706	1510
WNSWLHD	871	756	897	899	836	1684	1322	1917	1718	1657
WSLHD	1929	1847	1933	1883	2380	3904	3590	4296	3463	4202
Total	**16931**	**16941**	**17403**	**16465**	**18747**	**30584**	**29540**	**33930**	**30845**	**33784**

ESRG V6	LHD	Private	SCHN	I'state	Total	LHD	Private	SCHN	I'state	Total
	SEPARATIONS					BED DAYS				
491 - Injuries to limbs - medical	3535	409	857	309	5110	4399	425	1193	741	6758
492 - Wrist & hand procedures incl carpal tunnel	931	426	812	106	2275	996	428	881	158	2463
493 - Hip replacement for trauma	0	0	0	38	38	0	0	0	348	348
494 - Knee procedures	197	560	89	12	858	255	589	157	14	1015
495 - Other orthopaedics - surgical	3869	1745	2144	451	8209	6428	2842	6621	1844	17735
496 - Hip replacement/revision	0	1	2	25	28	0	5	9	218	232
497 - Knee replacement/revision	0	2	1	27	30	0	3	1	155	159
498 - Hip fracture	12	0	2	14	28	32	0	2	29	63
499 - Other orthopaedics - non-surgical	870	185	997	119	2171	1832	407	2290	482	5011
Total Separations	**9414**	**3328**	**4904**	**1101**	**18747**	**13942**	**4699**	**11154**	**3989**	**33784**

Source: *MoH FlowInfo21 SRG 49 Orthopaedics V6 Excl ED only Patient Group: NSW residents 16 years and under*

6.3 SCHN – Emergency Care

DIAGNOSIS SUB CHAPTER	16/17	17/18	18/19	19/20	20/21	Change (n)	Change (%)
M00-M25 Arthropathies	542	561	555	461	698	156	29%
M30-M36 Systemic connective tissue disorders	43	30	28	33	19	-24	-56%
M40-M54 Dorsopathies	363	391	449	387	417	54	15%
M60-M79 Soft tissue disorders	1257	1418	2376	2099	2020	763	61%
M80-M94 Osteopathies and chondropathies	141	133	197	154	194	53	38%
M95-M99 Other disorders of the musculoskeletal system and connective tissue	16	20	2	0	2	-14	-87%
S40-S49 Injuries to the shoulder and upper arm	1488	1509	1302	1228	1435	-53	-4%
S50-S59 Injuries to the elbow and forearm	3506	3536	3432	3189	3736	230	7%
S60-S69 Injuries to the wrist and hand	2618	2740	2578	2492	3313	695	27%
S70-S79 Injuries to the hip and thigh	216	217	232	227	247	31	14%
S80-S89 Injuries to the knee and lower leg	1469	1483	1178	1096	1362	-107	-7%
S90-S99 Injuries to the ankle and foot	1568	1605	1630	1590	1953	385	25%
T00-T07 Injuries involving multiple body regions	71	55	59	83	59	-12	-17%
Total presentations	**13298**	**13698**	**14018**	**13039**	**15455**	**2157**	**16%**

Source: *MoH EDAA21 All Patients*

TRIAGE CATEGORY	2016/17	2017/18	2018/19	2019/20	2020/21	Change (n)	Change (%)
1	38	41	40	48	56	18	47%
2	212	238	239	326	441	229	108%
3	1405	1525	1549	1771	1906	501	36%
4	11370	11675	11966	10627	12758	1388	12%
5	273	219	224	267	294	21	8%
Total presentations	**13298**	**13698**	**14018**	**13039**	**15455**	**2157**	**16%**

Source: *MoH EDAA21 All Patients*

Residence SLA 07 Name	2016/17	2017/18	2018/19	2019/20	2020/21	Change (n)	Change (%)
Baulkham Hills (A) - Central	433	476	492	447	600	167	39%
Baulkham Hills (A) - North	290	348	375	336	482	192	66%
Baulkham Hills (A) - South	242	239	263	268	309	67	28%
Botany Bay (C)	696	688	606	596	742	46	7%
Holroyd (C)	1049	1209	1272	1200	1397	348	33%
Parramatta (C) - Inner	303	325	363	365	409	106	35%
Parramatta (C) - North-East	171	174	206	175	237	66	39%
Parramatta (C) - North-West	304	328	389	375	408	104	34%
Parramatta (C) - South	284	292	285	307	312	28	10%
Randwick (C)	2005	1931	1897	1760	2174	169	8%
Sydney (C) - East	169	189	160	126	163	-6	-4%
Sydney (C) - Inner	40	45	29	38	33	n/a	-17%
Waverley (A)	797	826	838	731	980	183	23%
Woollahra (A)	565	586	513	500	580	39	3%
Grand Total	**7348**	**7656**	**7688**	**7224**	**8826**	**1478**	**20%**

Residence LHD	2016/17	2017/18	2018/19	2019/20	2020/21	Change (n)	Change (%)
A.C.T.	10	17	25	17	11	1	10%
CCLHD	31	33	43	30	33	2	6%
FWLHD	0	0	1	0	0	0	n/a
HNELHD	37	20	33	27	36	-1	-3%
ISLHD	66	63	53	60	67	1	2%
MNCLHD	10	4	9	6	10	0	0%
MLHD	12	13	22	14	20	8	67%
NBMLHD	391	407	444	415	447	56	14%
NT	0	3	2	0	0	0	n/a
NNSWLHD	3	3	12	1	6	3	100%
NSLHD	620	642	699	679	673	53	9%
Other(999)	101	110	197	194	168	67	66%
QLD	36	24	19	22	9	-27	-75%
SA	6	8	5	4	3	-3	-50%
SESLHD	4799	4802	4556	4193	5197	398	8%
SWSLHD	1096	1119	1216	1120	1402	306	28%
SNSWLHD	10	13	24	20	7	-3	-30%
SYDLHD	1276	1280	1226	1204	1434	158	12%
TAS	2	2	4	1	1	-1	-50%
VIC	21	20	25	30	14	-7	-33%
WA	12	9	7	4		-12	0
WNSWLHD	32	41	66	24	36	4	13%
WSLHD	4727	5065	5330	4974	5881	1154	24%
Total	**13298**	**13698**	**14018**	**13039**	**15455**	**2157**	**16%**

6.3.1 Emergency Care - CHW

Triage Category	2016/17	2017/18	2018/19	2019/20	2020/21	Change (n)	Change (9%)
1	29	34	30	39	34	5	17%
2	84	109	118	198	290	206	245%
3	906	1050	1120	1271	1274	368	41%
4	5994	6211	6783	5971	7124	1130	19%
5	54	44	79	127	130	76	141%
Total presentations	**7067**	**7448**	**8130**	**7606**	**8852**	**1785**	**25%**

Source: *MoH EDA21, Selected Diagnosis Codes, Patient population all*

Age Group	2016/17	2017/18	2018/19	2019/20	2020/20	Change (n)	Change (%)
0 to 4 Years	2210	2277	2206	2213	2295	85	4%
5 to 9 Years	2213	2270	2429	2231	2643	430	19%
10 to 14 Years	2302	2517	2994	2673	3311	1009	44%
15 to 19 Years	342	384	501	488	603	261	76%
Total presentations	**7067**	**7448**	**8130**	**7606**	**8852**	**1785**	**25%**

Source: *MoH EDA21, Selected Diagnosis Codes, Patient population all*

Mode Of Separation	16/17	17/18	18/19	19/20	20/21	Change (n)	Change (%)
Admitted & discharged as inpatient within ED	50	0	0	0	0	-50	n/a
Admitted: Died in ED	0	2	0	0	0	0	n/a
Admitted: To Critical Care Ward (incl HDU/CCU/NICU)	2	0	6	6	7	5	250%
Admitted: To Ward/inpatient unit, not a Critical Care Ward	830	786	893	894	1015	185	22%
Admitted: Transferred to another hospital	1	0	0	0	0	-1	0
Admitted: Via Operating Suite	279	257	176	194	188	-91	67
Dead on Arrival	0	1	0	0	0	0	n/a
Departed: for other Clinical Service Location	0	0	12	15	15	15	n/a
Departed: Left at own risk	3	24	53	112	176	173	n/a
Departed: Transferred to another hospital without first being admitted to the hospital from which transferred	4	3	1	1	1	-3	-75%
Departed: Treatment completed	5898	6375	6987	6384	7449	1551	26%
Registered in Error	0	0	2	0	1	0	n/a
Total presentations	**7067**	**7448**	**8130**	**7606**	**8852**	**1785**	**25%**

Source: *MoH EDA21, Selected Diagnosis Codes, Patient population all*

Residence LHD	16/17	17/18	18/19	19/20	20/21	Change (n)	Change (%)
A.C.T.	4	6	7	11	5	1	25%
Central Coast	24	26	36	24	27	3	13%
Hunter New England	18	12	19	16	21	3	17%
Illawarra Shoalhaven	14	14	14	12	14	0	0%
Mid North Coast	3	2	7	2	10	7	233%
Murrumbidgee	6	5	5	7	12	6	100%
Nepean Blue Mountains	381	396	437	411	437	56	15%
North. Territory	0	3	2	0	0	0	n/a
Northern	1	1	3		1	0	100
Northern Sydney	405	433	482	484	481	76	19%
Other(999)	61	54	148	150	148	87	143%
Queensland	17	6	9	10	7	-10	-59%
South Australia	1	3	2	1	2	1	100%
South Eastern Sydney	31	31	54	41	69	74	123%
South Western Sydney	981	981	1091	1002	1264	283	29%
Southern	4	7	12	13	5	1	25%
Sydney	380	389	428	438	456	76	20%
Tasmania	1		1		1	0	0%
Victoria	8	9	12	13	6	-2	-25%
West. Australia	3	2	5	3	0	-3	n/a
Western	22	27	46	19	27	5	23%
Western Sydney	4702	5041	5310	4949	5859	1157	25%
Total presentations	**7067**	**7448**	**8130**	**7606**	**8852**	**1785**	**25%**

Source: *MoH EDA21, Selected Diagnosis Codes, Patient population all*

6.3.2 SCH – Emergency Care

Triage Category	2016/17	2017/18	2018/19	2019/20	2020/21	Change (n)	Change (%)
1	9	7	10	9	22	13	144%
2	128	129	121	128	151	23	18%
3	499	475	429	500	632	133	27%
4	5376	5464	5183	4656	5634	258	5%
5	219	175	145	140	164	-55	-25%
Total presentations	**6231**	**6250**	**5888**	**5433**	**6603**	372	6%

Source: *MoH EDA21, Selected Diagnosis Codes, Patient population all*

Age Group	2016/17	2017/18	2018/19	2019/20	2020/21	Change (n)	Change (%)
0 to 4 Years	1493	1459	1296	1283	1401	-92	-6%
5 to 9 Years	1897	1945	1743	1662	1846	-51	-3%
10 to 14 Years	2438	2421	2450	2140	2890	452	19%
15 to 19 Years	403	425	399	347	464	61	15%
Total presentations	**6231**	**6250**	**5888**	**5433**	**6603**	**372**	**6%**

Source: *MoH EDA21, Selected Diagnosis Codes, Patient population all*

Mode Of Separation	16/17	17/18	18/19	19/20	20/21	Change (n)	Change (9%)
Admitted & discharged as inpatient within ED	321	0	0	0	0	-321	n/a
Admitted: Left at own risk	1	0	0	0	0	-1	n/a
Admitted: To Critical Care Ward (including HDU/CCU/NICU)	4		6	4	4	0	0%
Admitted: To Ward/inpatient unit, not a Critical Care	406	398	419	511	523	117	29%
Admitted: Transferred to another hospital	3	0	0	0	0	-3	0
Admitted: Via Operating Suite	97	118	82	26	26	-71	-73%
Departed: Did not wait		7	3	1	7	7	n/a
Departed: for other Clinical Service Location	5	8	1	5	37	32	n/a
Departed: Left at own risk	41	49	37	24	85	44	107%
Departed: Transferred to another hospital without first being admitted to the hospital from which transferred	2	1	4	5	5	3	150%
Departed: Treatment completed	5351	5669	5336	4857	5916	565	11%
Total presentations	**6231**	**6250**	**5888**	**5433**	**6603**	**372**	**6%**

Source: *MoH EDA21, Selected Diagnosis Codes, Patient population all*

Residence LHD	2016/17	2017/18	2018/19	2019/20	2020/21	Change (n)	Change (%)
A.C.T.	6	11	18	6	6	0	0%
Central Coast	7	7	7	6	6	-1	-14%
Far West			1			0	N/A
Hunter New England	19	8	14	11	15	-4	-21%
Illawarra Shoalhaven	52	49	39	48	53	1	2%
Mid North Coast	7	2	2	4	0	-7	n/a
Murrumbidgee	6	8	17	7	8	2	33%
Nepean Blue Mountains	10	11	7	4	10	0	0%
Northern	2	2	9	1	5	3	150%
Northern Sydney	215	209	217	195	192	-23	-11%
Other(999)	40	56	49	44	20	-20	-50%
Queensland	19	18	10	12	2	-17	-89%
South Australia	5	5	3	3	1	-4	-80%
South Eastern Sydney	4768	4771	4502	4152	5128	-9	8%
South Western Sydney	115	138	125	118	138	23	20%
Southern	6	6	12	7	2	-4	-67%
Sydney	896	891	798	766	978	82	9%
Tasmania	1	2	3	1	0	-1	n/a
Victoria	13	11	13	17	8	-5	-38%
West. Australia	9	7	2	1	0	-9	n/a
Western	10	14	20	5	9	-1	-10%
Western Sydney	25	24	20	25	22	-3	-12%
Total presentations	**6231**	**6250**	**5888**	**5433**	**6603**	**372**	**6%**

Source: *MoH EDA21, Selected Diagnosis Codes, Patient population all*

6.4 SCHN – Admitted Care – SRG 49 Orthopaedics

ESRG	16/17	17/18	18/19	19/20	20/21	Change (n)	Change (%)
SEPARATIONS							
491 – Injuries to limbs - medical	676	534	533	646	869	193	29%
492 – Wrist & hand procedures incl carpal tunnel	596	644	631	630	827	231	39%
494 – Knee procedures	79	93	91	103	106	27	34%
495 – Other orthopaedics – surgical	2124	2104	2108	2057	2324	200	9%
496 - Hip replacement / revisions	3	1	2	12	8	5	167%
497 – Knee replacement / revisions	5	4	0	0	1	-4	-80%
498 – Hip fracture	6	7	1	4	3	-3	-50%
499 – Other orthopaedics – non-surgical	1164	1144	1167	957	1145	-19	-2%
Total separations	4653	4531	4533	4409	5283	630	14%
BED DAYS							
491 – Injuries to limbs - medical	1018	812	970	1000	1205	187	18%
492 – Wrist & hand procedures incl carpal tunnel	673	678	675	663	896	223	33%
494 – Knee procedures	172	142	111	130	178	6	3%
495 – Other orthopaedics – surgical	6564	6743	7319	6980	7245	681	10%
496 - Hip replacement / revisions	14	3	8	57	33	19	136%
497 – Knee replacement / revisions	26	17	0	0	1	-25	-96%
498 – Hip fracture	23	25	3	14	5	-18	-78%
499 – Other orthopaedics – non-surgical	3315	2703	3021	2452	2826	-489	-15%
Total bed days	11805	11123	12107	11296	12389	584	5%

Source: *MoH FlowInfo21. SRGV6 Orthopaedics (Excl ED only) Patient Group: All ages*

		2016/17	2017/18	2018/19	2019/20	2020/21	Change (n)	Change (%)
Non-Specialist Paediatric	Interventional	1221	1311	1285	1296	1542	321	26%
	Medical	671	548	586	693	891	220	33%
	Total	**1892**	**1859**	**1871**	**1989**	**2433**	541	29%
Specialist Paediatric	Interventional	1586	1535	1547	1506	1724	138	9%
	Medical	1175	1137	1115	914	1126	-49	-4%
	Total	**2761**	**2672**	**2662**	**2420**	**2850**	89	3%
Grand Total		**4653**	**4531**	**4533**	**4409**	**5283**	630	14%
% specialist		59%	59%	59%	55%	54%		

Source: *MoH FlowInfo21. SRGV6 Orthopaedics (Excl ED only) Patient Group: All ages Specialist Flag*

Sydney Children's Hospitals Network	Non-Specialist Paediatric	Specialist Paediatric	Grand Total	% Specialist
I74B - Injuries to Forearm, Wrist, Hand and Foot, Minor Complexity	548	35	583	6%
I30Z - Hand Procedures	273	207	480	43%
I13C - Humerus, Tibia, Fibula and Ankle Procedures, Minor Complexity	281	66	347	19%
X05B - Other Procedures for Injuries to Hand, Minor Complexity	178	147	325	45%
I23B - Local Excision & Removal of Internal Fixation Device , Except Hip & Fmr, Min Comp	232	29	261	11%
I76B - Other Musculoskeletal Disorders, Minor Complexity	39	219	258	85%
I65B - Musculoskeletal Malignant Neoplasms, Minor Complexity	0	207	207	100%
I08C - Other Hip and Femur Procedures, Minor Complexity	25	181	206	88%
I27B - Soft Tissue Procedures, Minor Complexity	47	153	200	77%
I19B - Other Elbow and Forearm Procedures, Minor Complexity	160	15	175	9%
B65Z - Cerebral Palsy	0	154	154	100%
I06Z - Spinal Fusion for Deformity	0	136	136	100%
I20B - Other Foot Procedures, Minor Complexity	57	75	132	57%
I75B - Injuries to Shoulder, Arm, Elbow, Knee, Leg and Ankle, Intermediate Complexity	106	14	120	12%
I76A - Other Musculoskeletal Disorders, Major Complexity	3	113	116	97%
I65A - Musculoskeletal Malignant Neoplasms, Major Complexity	0	109	109	100%
I23A - Local Excision & Removal of Internal Fixation Device, Except Hip & Fmr, Maj Comp	16	76	92	83%
X04B - Other Procedures for Injuries to Lower Limb, Minor Complexity	66	17	83	20%
I64B - Osteomyelitis, Minor Complexity	0	78	78	100%
I21B - Local Excision and Removal of Internal Fixation Devices of Hip & Femur, Min Comp	0	75	75	100%
B07B - Cranial or Peripheral Nerve and Other Nervous System Procedures, Minor Comp	11	49	60	82%
I08B - Other Hip and Femur Procedures, Intermediate Complexity	5	53	58	91%
I72B - Specific Musculotendinous Disorders, Minor Complexity	40	13	53	25%
I28B - Other Musculoskeletal Procedures, Intermediate Complexity	22	27	49	55%
I60Z - Femoral Shaft Fractures	22	27	49	55%
I74A - Injuries to Forearm, Wrist, Hand and Foot, Major Complexity	38	10	48	21%
I73C - Aftercare of Musculoskeletal Implants or Prostheses, Minor Complexity	0	47	47	100%
B06A - Procedures for Cerebral Palsy, Muscular Dystrophy and Neuropathy, Major Comp	0	46	46	100%
I29Z - Knee Reconstructions, and Revisions of Reconstructions	42	3	45	7%
I18B - Other Knee Procedures, Minor Complexity	26	16	42	38%
Other	196	453	649	70%
Total separations 2020/21	2433	2850	5283	54%

Residence LHD	16/17	17/18	18/19	18/20	20/21	% Δ	16/17	17/18	18/19	19/20	20/21	% Δ
	SEPARATIONS						BED DAYS					
A.C.T.	104	95	148	93	95	-9%	262	301	527	324	283	8%
CCLHD	112	107	108	108	133	19%	306	320	529	311	289	27%
FWLHD	0	1	0	0	0	n/a	0	1	2	0	0	n/a
HNELHD	110	104	104	101	106	-4%	398	390	379	280	296	-26%
ISLHD	225	193	168	202	194	-14%	501	557	383	528	492	-2%
MNCLHD	37	38	33	34	32	-14%	81	158	105	271	113	40%
MLHD	111	88	76	43	65	-41%	371	281	266	195	218	-41%
NBMLHD	273	265	245	249	322	18%	714	661	622	670	763	7%
NT	1	6	1	1	1	0%	1	26	17	1	7	n/a
NNSWLHD	7	16	7	6	8	14%	83	51	15	20	30	-64%
NSLHD	313	311	366	341	360	15%	856	890	968	942	1181	38%
Other(999)	12	22	42	3	1	-92%	25	68	87	12	1	-96%
Overseas	39	31	56	71	23	-41%	139	91	187	395	113	-19%
QLD	17	9	11	8	6	-65%	45	16	26	30	8	-82%
SA	2	4	4	0	1	-50%	6	6	4	9	0	-50%
SESLHD	727	759	715	738	823	13%	1671	1366	1491	1534	1481	-11%
SWSLHD	654	619	672	652	804	23%	1720	1666	1979	1867	2236	30%
SNSWLHD	67	78	64	56	87	30%	209	188	209	210	327	56%
SYDLHD	408	391	345	426	508	25%	928	869	770	965	819	-12%
TAS	0	0	2	0	0	n/a	0	0	28	0	0	n/a
VIC	5	7	6	7	4	-20%	5	9	29	9	7	40%
WA	6	3	3	2	0	0%	18	4	50	11	0	n/a
WNSWLHD	130	117	162	112	141	8%	471	401	672	444	492	4%
WSLHD	1293	1267	1194	1156	1569	21%	2995	2805	2939	2277	3130	5%
Total	**4653**	**4561**	**4533**	**4409**	**5283**	**14%**	**11805**	**11123**	**12107**	**11296**	**12389**	**5%**

Source: *MoH FlowInfo21. SRGV6 Orthopaedics (Excl ED only) Patient Group: All ages*

6.5 SCHN – Non-admitted care

Service Units - SCHN	16/17	17/18	18/19	19/20	20/21	16/17	17/18	18/19	19/20	20/21
	OCCASIONS OF SERVICE (OOS)					PATIENTS (Unique MRNs)				
Allied Health Orthopaedic CHW	0	0	58	121	104	0	0	50	80	54
Allied Health Orthopaedic SCH	0	0	41	799	1049	0	0	34	381	435
Gait Services	133	85	115	84	116	128	84	114	81	115
Leg lengthening Services	203	242	345	385	482	100	100	132	112	126
ORTHO SCH	10138	10212	9758	9730	16953	3632	3701	3555	3536	3850
Orthopaedic Clinic	22110	23313	25066	33181	43134	8340	8875	9158	8995	10290
Orthopaedic Congenital Hand Services	1780	2234	2595	3111	7190	529	739	825	865	1290
PAC ORTHO C1SW SCH	18	0	1	6	2	5	0	1	5	2
SCOLIOSIS SCH	779	608	786	945	1950	310	286	404	433	551
Total	**35161**	**36694**	**38765**	**48362**	**70980**	**12767**	**13508**	**13888**	**13920**	**15960**

MODALITY	2016/17	2017/18	2018/19	2019/20	2020/21
Audio – Individual – Clinician end	86	81	93	294	349
Audiovisual – Group – Clinician end	0	0	0	2	11
Audiovisual – Group – Patient end with clinician	0	0	0	0	4
Audiovisual – individual – Clinician end	0	0	0	989	301
Audiovisual – Individual – Patient end with clinician	0	0	0	3	3
Email - Individual	8	17	34	408	201
In Person - Group	6	0	0	3	7
In Person - Individual	35060	36596	38549	45662	68680
No Client Contact – Case Conference	0	0	7	26	23
No Client Contact – Case Planning and Review	1	0	70	518	663
NULL	0	0	0	2	90
Other Technology - individual	0	0	12	455	645
Occasions of Service (OOS)	35161	36694	38765	48362	70977

PROVIDER TYPE	2016/17	2017/18	2018/19	2019/20	2020/21
Allied Health Assistant	0	0	447	2142	3136
Medical Practitioners, not elsewhere classified	197	2281	2301	1957	2131
Medical Registrar	6873	6806	7184	7056	8343
Nurse Practitioner #	41	19	228	695	327
Occupational Therapist	1	2	333	1533	2131
Orthopaedic Surgeon	16324	17630	16593	15760	19428
Orthotist / Prosthetist	496	286	489	2830	4098
Paediatrician	2668	1788	1102	721	587
Physiotherapist	3540	3548	5246	10845	12207
Registered Nurse, not elsewhere classified #	872	721	512	407	13476
Other	4149	3613	4330	4416	5113
Occasions of Service (OOS)	35161	36694	38765	48362	70977

6.6 Orthopaedic – W - Admitted Care

Orthopaedics as Discharging specialty	16/17	17/18	18/19	19/20	20/21	16/17	17/18	18/19	19/20	20/21
	Separations					Bed Days				
Day only	930	873	854	918	1162	930	873	854	918	1162
Overnight	1618	1572	1508	1487	1630	5893	5728	6232	6163	5956
Total	2448	2445	2362	2405	2792	6823	6601	7086	7081	7118
% Day only	36%	36%	36%	38%	42%					
ALOS Excl DO - days						3.6	3.6	2.2	4.1	3.7

Source: *SCHN MSAU*

LHD	16/17	17/18	18/19	19/20	20/21	(%)	16/17	17/18	18/19	19/20	20/21	(%)
	Separations						Bed days					
ACT	33	50	25	42	35	6%	131	152	73	143	87	-34%
CCLHD	97	83	81	65	88	-9%	259	264	294	308	249	-4%
FWLHD	0	1	1	0	0	n/a	0	1	2	0	0	n/a
HNELHD	60	60	57	62	77	28%	174	280	200	294	242	39%
ISLHD	41	50	29	32	28	-32%	130	168	82	67	89	-32%
MLHD	32	20	27	9	28	-12%	105	54	68	34	123	17%
MNCLHD	21	21	17	12	12	-43%	43	72	61	49	43	0%
NBMLHD	222	247	214	228	281	27%	544	632	615	628	730	34%
NNSWLHD	7	8	3	2	5	25%	14	28	10	2	27	93%
NSLHD	199	204	206	207	227	14%	564	635	555	560	539	-4%
NSWNFD	2	0	0	1	0	n/a	3	0	0	7	0	n/a
NT	0	4	1	1	1	n/a	0	29	17	1	7	n/a
NULL	2	3	5	0	10	400%	2	3	15	0	66	Sig
OSEAS	7	10	25	15	11	57%	14	27	116	61	18	29%
QLD	7	2	8	3	5	-29%	27	6	21	17	7	-74%
SA	0	0	2	0	1	n/a	0	0	8	0	3	n/a
SESLHD	31	34	36	21	44	42%	97	100	117	68	81	-16%
SNSWLHD	26	21	28	41	33	27%	87	45	90	174	147	69%
SWSLHD	483	431	445	4460	509	5%	1438	1290	1260	1601	1583	10%
SYDLHD	139	105	102	149	146	5%	424	234	253	425	319	-25%
TAS	0	0	1	0	0	n/a	0	0	22	0	0	n/a
VIC	2	2	2	2	2	0%	2	10	15	2	2	0%
WA	3	0	4	1	0	n/a	15	0	51	3	0	n/a
WNSWLHD	80	86	98	74	84	5%	333	391	502	345	470	41%
WSLHD	1057	1003	945	978	1165	10%	2417	2180	2639	2292	2286	-5%
Grand Total	**2548**	**2445**	**2362**	**2405**	**2792**	**10%**	**6823**	**6601**	**7086**	**7081**	**7118**	**4%**

Source: *SCHN MSAU*

AR-DRG		16/17	17/18	18/19	19/20	20/21
I13C	Humerus, Tibia, Fibula and Ankle Interventions, Minor Complexity	0	0	245	210	232
I30Z	Hand Procedures	116	79	115	111	206
I74B	Injuries to Forearm, Wrist, Hand and Foot, Minor Complexity	105	77	109	122	156
I08C	Other Hip and Femur Interventions, Minor Complexity	0	0	123	125	153
I23B	Local Excision & Removal of Internal Fixation Device, Except Hip & Fmr, Min Comp	145	138	140	104	135
I27B	Soft Tissue Interventions, Minor Complexity	121	116	93	83	110
I68B	Non-surgical Spinal Disorders, Minor Complexity	27	50	85	88	99
I19B	Other Elbow and Forearm Interventions, Minor Complexity	96	72	71	74	96
I20B	Other Foot Interventions, Minor Complexity	84	62	70	88	77
I06Z	Spinal Fusion for Deformity	89	60	60	66	75
I68A	Non-surgical Spinal Disorders, Major Complexity	8	8	56	54	72
X05B	Other Interventions for Injuries to Hand, Minor Complexity	17	31	36	60	69
X60B	Injuries, Minor Complexity	94	85	71	95	65
I21B	Local Excision and Removal of Internal Fixation Devices of Hip & Femur, Min Comp	0	0	41	43	62
X04B	Other Interventions for Injuries to Lower Limb, Minor Complexity	28	28	35	46	54
I76B	Other Musculoskeletal Disorders, Minor Complexity	4	5	52	40	45
I23A	Local Excision & Removal of Internal Fixation Device, Except Hip & Fmr, Maj Comp	42	41	38	43	44
I75B	Injuries to Shoulder, Arm, Elbow, Knee, Leg and Ankle, Intermediate Complexity	53	49	57	39	40
I75C	Injuries to Shoulder, Arm, Elbow, Knee, Leg and Ankle, Minor Complexity	0	0	3	7	37
I71B	Other Musculotendinous Disorders, Minor Complexity	18	31	15	31	37
B06A	Interventions for Cerebral Palsy, Muscular Dystrophy and Neuropathy, Major Comp	36	46	39	33	36
I08B	Other Hip and Femur Interventions, Intermediate Complexity	112	139	46	37	36
I29Z	Knee Reconstructions, and Revisions of Reconstructions	26	37	33	36	35
I28C	Other Musculoskeletal Interventions, Minor Complexity	9	7	10	7	31
X06C	Other Interventions for Other Injuries, Minor Complexity	22	34	34	10	31
I18B	Other Knee Interventions, Minor Complexity	29	29	23	38	30
I21A	Local Excision and Removal of Internal Fixation Devices of Hip & Femur, Maj Comp	0	0	22	21	30
I76A	Other Musculoskeletal Disorders, Major Complexity	6	0	42	30	30
I60Z	Femoral Shaft Fractures	38	26	32	28	29
I72B	Specific Musculotendinous Disorders, Minor Complexity	30	15	15	23	29
I64B	Sprains, Strains and Dislocations of Hip, Pelvis and Thigh, Minor Complexity	27	36	28	18	26
I73B	Aftercare of Musculoskeletal Implants or Prostheses, Minor Complexity	6	4	12	5	25
I13B	Humerus, Tibia, Fibula and Ankle Interventions, Inter Complexity	243	222	23	28	22
J64B	Cellulitis, Minor Complexity	28	25	18	29	22
I64A	Osteomyelitis, Major Complexity	12	9	12	17	20
X60A	Injuries, Major Complexity	10	9	11	19	19
B81B	Other Disorders of the Nervous System, Minor Complexity	6	9	8	10	18
I72A	Specific Musculotendinous Disorders, Major Complexity	8	1	6	12	17
	Other AR-DRG	853	865	433	475	442
	Total Separations	2548	2445	2362	2405	2792

6.7 Orthopaedic - W – Non-admitted Care

SERVICE UNITS	16/17	17/18	18/19	19/20	20/21	16/17	17/18	18/19	19/20	20/21
	Occasions of Service					Patients (Unique MRNs)				
Allied Health Orthopaedic CHW	0	0	58	121	106	0	0	50	80	54
Gait Services	133	85	115	84	116	128	84	114	81	115
Leg Lengthening Service	203	242	345	385	482	100	100	132	112	126
Orthopaedic Clinic	22110	23313	25066	33181	43134	8340	8875	9158	8995	1029-
Orthopaedic Congenital Hand Serv	1780	2234	2595	3111	7190	529	739	825	865	1290
Total	24226	25874	28179	36882	51028	8866	9557	9950	9802	11440

MODALITY	2016/17	2017/18	2018/19	2019/20	2020/21
Audio – Individual – Clinician end	86	81	90	247	245
Audiovisual – Group – Clinician end	0	0	0	1	3
Audiovisual – Group – Patient end with clinician	0	0	0	0	4
Audiovisual – individual – Clinician end	0	0	0	959	273
Audiovisual – Individual – Patient end with clinician	0	0	0	2	3
Email - Individual	8	17	29	371	158
In Person - Group	0	0	0	3	7
In Person - Individual	24131	25776	27974	34369	48981
No Client Contact – Case Conference	0	0	6	19	14
No Client Contact – Case Planning and Review	1	0	68	454	609
NULL	0	0	0	2	86
Other Technology - individual	0	0	12	455	645
Occasions of Service (OOS)	24226	25874	28179	36882	51028

PROVIDER TYPE	2016/17	2017/18	2018/19	2019/20	2020/21
Allied Health Assistant	0	0	447	2124	2666
Medical Practitioners, not elsewhere classified	0	1997	2070	1844	2031
Medical Registrar	5823	5970	6306	5989	7352
Nurse Practitioner #	41	19	228	695	327
Occupational Therapist	0	0	327	1510	1891
Orthopaedic Surgeon	14674	15001	14608	13647	16784
Orthotist / Prosthetist	0	0	252	2583	4079
Paediatrician	2667	1788	1102	720	587
Physiotherapist	140	109	1952	6569	8398
Registered Nurse, not elsewhere classified #	82	721	512	405	5862
Other	799	269	375	796	1051
Occasions of Service (OOS)	24226	25874	28179	36882	51028

6.8 Orthopaedic – R – Admitted Care

Orthopaedics as Discharging specialty	16/17	17/18	18/19	19/20	20/21	16/17	17/18	18/19	19/20	20/21
	Separations					Bed Days				
Day only	273	325	293	324	355	273	325	293	324	355
Overnight	719	669	672	768	744	2269	2188	2424	2769	2435
Total	992	994	965	1092	1099	2542	2513	2717	3093	2790
% day only	27%	33%	30%	30%	32%					
ALOS Excl DO - days						3.2	3.3	3.6	3.6	3.3

Source: *SCHN MSAU*

LHD	16/17	17/18	18/19	19/20	20/21	Change (%)	16/17	17/18	18/19	19/20	20/21	Change (%)
	Separations						Bed days					
ACT	45	31	44	22	25	-44%	129	133	143	104	81	-37%
CCLHD	2	4	10	12	12	500%	19	23	74	21	43	126%
HNELHD	22	14	19	25	21	-5%	127	47	114	60	55	-57%
ISLHD	83	78	50	100	91	10%	163	226	119	341	342	110%
MLHD	20	21	17	21	22	10%	71	101	61	170	85	20%
MNCLHD	7	12	9	8	13	86%	25	35	46	22	38	52%
NBMLHD	9	6	7	10	8	-11%	32	32	12	27	15	-53%
NNSWLHD	4	3	5	3	2	-50%	52	18	20	18	2	-96%
NSLHD	57	54	67	69	68	19%	194	154	204	255	226	16%
NSWNFD			1	1		n/a	0	0	2	7	0	n/a
NULL	14	14	24	4	3	-89%	62	66	94	4	12	-91%
OSEAS	2	5	5	6	0	n/a	11	6	5	11	0	n/a
QLD	6	3		4	1	-83%	14	6	0	16	1	-93%
SA	3	4	1	0	0	n/a	7	4	1	0	0	n/a
SESLHD	448	459	431	509	500	12%	932	893	905	1144	970	4%
SNSWLHD	19	26	23	20	35	84%	52	66	99	74	157	203%
SWSLHD	62	82	76	109	117	89%	166	214	247	419	348	110%
SYDLHD	157	154	140	142	158	1%	410	413	427	335	365	-11%
TAS			1			n/a	0	0	6	0	0	n/a
VIC	3	2	2	2	1	-67%	3	2	12	3	2	-33%
WA	1	3	0	0	0	n/a	1	4	0	0	0	n/a
WNSWLHD	17	6	19	11	3	-82%	43	31	83	43	14	-77%
WSLHD	11	13	14	14	19	73%	29	39	42	19	34	17%
Grand Total	**992**	**994**	**965**	**1092**	**1099**	11%	**2542**	**2513**	**2717**	**3093**	**2790**	**10%**

		16/17	17/18	18/19	19/20	20/21
I13C	Humerus, Tibia, Fibula and Ankle Interventions, Minor Complexity	0	0	107	100	109
I23B	Local Excision & Removal of Internal Fixation Device, Except Hip & Fmr, Min Comp	58	81	63	68	93
I74B	Injuries to Forearm, Wrist, Hand and Foot, Minor Complexity	102	40	77	114	83
I19B	Other Elbow and Forearm Interventions, Minor Complexity	36	52	41	60	62
I06Z	Spinal Fusion for Deformity	31	22	47	46	55
I08C	Other Hip and Femur Interventions, Minor Complexity	0	0	45	52	52
I20B	Other Foot Interventions, Minor Complexity	25	28	28	28	47
I27B	Soft Tissue Interventions, Minor Complexity	50	55	43	42	42
I76A	Other Musculoskeletal Disorders, Major Complexity		3	34	29	31
I64B	Osteomyelitis, Minor Complexity	34	21	23	16	30
I75B	Injuries to Shoulder, Arm, Elbow, Knee, Leg and Ankle, Intermediate Complexity	30	20	20	25	27
I73B	Aftercare of Musculoskeletal Implants or Prostheses, Minor Complexity	5	3	4	5	27
I76B	Other Musculoskeletal Disorders, Minor Complexity	4	6	17	15	24
I60Z	Femoral Shaft Fractures	19	15	21	31	20
I08B	Other Hip and Femur Interventions, Intermediate Complexity	46	54	21	15	20
X04B	Other Interventions for Injuries to Lower Limb, Minor Complexity	14	26	25	33	17
I21B	Local Excision and Removal of Internal Fixation Devices of Hip & Femur, Min Comp	0	0	8	20	15
B06B	Interventions for Cerebral Palsy, Muscular Dystrophy and Neuropathy, Interm Comp	1	10	13	5	14
I18B	Other Knee Interventions, Minor Complexity	4	5	18	8	12
I71B	Other Musculotendinous Disorders, Minor Complexity	7	10	11	18	12
X60B	Injuries, Minor Complexity	20	6	5	10	10
I75C	Injuries to Shoulder, Arm, Elbow, Knee, Leg and Ankle, Minor Complexity	0	0	6	3	10
I13B	Humerus, Tibia, Fibula and Ankle Interventions, Intermediate Comp	110	118	4	11	10
B65Z	Cerebral Palsy	0	0	11	9	10
I08A	Other Hip and Femur Interventions, Major Complexity	18	22	18	17	10
I29Z	Knee Reconstructions, and Revisions of Reconstructions	7	10	5	8	10
I23A	Local Excision & removal of Internal fixation device, except Hip & Fmr,Maj Comp	10	8	14	10	9
I68B	Non-surgical Spinal Disorders, Minor Complexity	4	1	11	5	9
J64B	Cellulitis, Minor Complexity	14	15	13	3	9
I12C	Misc Musculoskeletal Interventions for Infect/Inflam of Bone/Joint, Minor Comp	12	2	4	2	9
I72B	Specific Musculotendinous Disorders, Minor Complexity	10	17	14	14	9
X06C	Other Interventions for Other Injuries, Minor Complexity	3	8	9	2	8
B06A	Interventions for Cerebral Palsy, Muscular Dystrophy and Neuropathy, Major Comp	15	20	6	11	8
	Other AR-DRGs	605	316	179	257	186
	Total separations	992	994	965	1092	1099

6.9 Orthopaedics – R - Non admitted Care

SERVICE UNITS	16/17	17/18	18/19	19/20	20/21	16/17	17/18	18/19	19/20	20/21
	Occasions of Service					Patients (Unique MRNs)				
Allied Health Orthopaedic SCH	0	0	41	799	1049	0	0	34	381	435
ORTHO SCH	10138	10212	9758	9730	16953	3632	3701	3.555	3536	3850
PAC ORTHO C1SW SCH	18	0	1	6	2	5	0	1	5	2
SCOLIOSIS SCH	779	608	786	945	1945	310	286	404	433	551
Total	10935	10820	10586	11480	19949	3901	3951	3938	4133	4550

MODALITY	2016/17	2017/18	2018/19	2019/20	2020/21
Audio – Individual – Clinician end	0	0	3	47	100
Audiovisual – Group – Clinician end	0	0	0	1	6
Audiovisual – Group – Patient end with clinician	0	0	0	0	0
Audiovisual – individual – Clinician end	0	0	0	30	28
Audiovisual – Individual – Patient end with clinician	0	0	0	1	0
Email - Individual	0	0	5	37	44
In Person - Group	6	0	0	0	0
In Person - Individual	10929	10820	10575	11293	19706
No Client Contact – Case Conference	0	0	1	7	9
No Client Contact – Case Planning and Review	0	0	2	64	54
NULL	0	0	0	0	1
Other Technology - individual	0	0	0	0	1
Occasions of Service (OOS)	10935	10820	10586	11480	19949

PROVIDER TYPE	2016/17	2017/18	2018/19	2019/20	2020/21
Allied Health Assistant	0	0	0	18	470
Medical Practitioners, not elsewhere classified	197	284	231	113	100
Medical Registrar	1050	836	878	1067	991
Occupational Therapist	1	2	3	23	150
Orthopaedic Surgeon	1650	2629	1985	2113	2644
Orthotist / Prosthetist	496	286	237	247	19
Paediatric Gastroenterologist	0	0	839	889	1043
Paediatric Neurologist	1309	1164	1059	1021	992
Paediatric Surgeon	1650	2171	1985	1682	2644
Physiotherapist	3400	3435	3294	4276	3809
Registered Nurse, not elsewhere classified #	6	4	0	2	7614
Other	1176	9	75	29	0
Occasions of Service (OOS)	10935	10820	10586	11480	19949

7. References

Health Policy Analysis 2020, Update of Service Related Groups (SRGs) and Enhanced Service Related Groups (ESRGs) (version 6) – Final report. NSW Ministry of Health, Sydney.