



Supporting Information

Supplementary methods and results

**This appendix was part of the submitted manuscript and has been peer reviewed.
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Appendix to: Tran DT, Lewin AM, Jorm L, Harris IA. Elective spinal surgery in New South Wales adults, 2001–20, by procedure funding type: a cross-sectional study. *Med J Aust* 2023; doi: 10.5694/mja2.52046.

Supplementary methods

Table 1. International Statistical Classification of Diseases and Related Health Problems, tenth revision, Australian modification (ICD-10-AM) codes for principal diagnoses

Principal diagnoses	ICD-10-AM code
Intervertebral disc disorders	M50 to M53
Spondylopathies	M45 to M49
Back pain	M54
Deforming dorsopathies	M40.0 to M40.5, M41.0 to M41.5, M41.8, M41.9 M42.0, M42.1, M42.9, M43.0 to M43.6, M43.8, M43.9
Disorders of central nervous systems, nerve root	G00 to G47; G54.0 to G54.9; G55.0 to G55.3, G55.8 G56 to G94; G95.0, G95.1, G95.2, G95.8, G95.9 G96 to G99
Symptoms involved nervous and musculoskeletal systems	M24.28, M25.38, M25.78, M25.88 R25 to R29

Table 2. Australian Classification of Health Interventions (ACHI) and International Statistical Classification of Diseases and Related Health Problems, tenth revision, Australian modification (ICD-10-AM) codes for spine procedures

Spine procedures	ACHI codes	ICD-10-AM codes
Inclusion criteria		
Fusion	40332, 40335, 48606, 48609, 48612, 48613, 48621, 48624, 48627, 48640, 48642, 48645, 48648, 48651, 48654, 48657, 48660, 48669, 48678, 48681, 48684, 48687, 48690	
Decompression	40300, 40306, 40330, 40331, 40333, 40334, 40345, 40348, 40351, 48630, 48636, 48639, 90024	
Disc replacement	48691-00, 48691-01	
Exclusion criteria*		
Spinal fracture, trauma	47684, 47687, 47690, 47693, 47696, 47699, 47702	S12, S13, S22, S23, S32, S33, T06.0, T08, T09.2, T09.3, T91.1, T91.2
Tumor, lesion, congenital deformities	40303, 40309, 40312, 40318, 48632	
Tumor		C41.2, C41.9, D16.6, D16.9
Revision of scoliosis or kyphosis surgery, revision or removal of spinal fixation, revision or removal of intervertebral disc prosthesis	48615, 48618, 50616, 50620, 90025 48691-02, 48691-03, 48691-04, 48691-05	

* Procedures were excluded if any of these codes were present in the principal or additional procedural fields.

Table 3. Distribution by sex and age of adults who underwent elective procedures for degenerative spinal conditions, New South Wales, 2001–20, and 2016 New South Wales adult population*

Age group (years)	Funding of spine procedures			New South Wales population
	Private	Workers' compensation	Public	
Men				
18–29	2351 (4.4%)	1026 (8.1%)	855 (4.9%)	557 760 (19.6%)
30–34	2473 (4.6%)	1372 (10.9%)	799 (4.6%)	283 211 (9.9%)
35–39	3289 (6.2%)	1763 (14.0%)	1160 (6.6%)	257 039 (9.0%)
40–44	4003 (7.5%)	1955 (15.5%)	1460 (8.4%)	256 703 (9.0%)
45–49	4424 (8.3%)	1876 (14.9%)	1578 (9.0%)	243 631 (8.6%)
50–54	4710 (8.8%)	1668 (13.2%)	1596 (9.1%)	243 196 (8.5%)
55–59	5282 (9.9%)	1428 (11.3%)	1791 (10.2%)	233 212 (8.2%)
60–64	6056 (11.3%)	1039 (8.2%)	1950 (11.2%)	205 857 (7.2%)
65 and over	20 874 (39.0%)	489 (3.9%)	6286 (36.0%)	567 238 (19.9%)
Total	53 462	12 616	17 475	2 847 847
Women				
18–29	1415 (2.9%)	303 (6.0%)	697 (3.9%)	547 015 (18.4%)
30–34	1508 (3.1%)	342 (6.8%)	652 (3.7%)	286 915 (9.7%)
35–39	2305 (4.7%)	538 (10.7%)	977 (5.5%)	258 020 (8.7%)
40–44	3129 (6.4%)	799 (15.9%)	1308 (7.3%)	260 535 (8.8%)
45–49	3708 (7.6%)	980 (19.5%)	1599 (9.0%)	256 022 (8.6%)
50–54	4083 (8.4%)	892 (17.8%)	1599 (9.0%)	249 991 (8.4%)
55–59	4461 (9.2%)	620 (12.4%)	1747 (9.8%)	242 832 (8.2%)
60–64	5299 (10.9%)	376 (7.5%)	1892 (10.6%)	215 756 (7.3%)
65 and over	22 796 (46.8%)	169 (3.4%)	7341 (41.2%)	649 102 (21.9%)
Total	48 704	5019	17 812	2 966 188

* Used as the standard population to calculate age- and sex-adjusted rates of spinal fusion and decompression.¹

Supplementary results

Table 4. Demographic and clinical characteristics of adults who underwent elective procedures for degenerative spinal conditions in New South Wales, 2001–20, by funding type

Characteristic	Workers' compensation	Publicly funded	Privately funded	All procedures
All procedures	17 635	35 287	102 166	155 088
Men	12 616 (71.5%)	17 475 (49.5%)	53 462 (52.3%)	83 553 (53.9%)
Age (years) mean (SD)	46.2 (11.1)	58.2 (15.6)	59.8 (15.8)	57.9 (15.9)
18–29 years	1329 (7.5%)	1552 (4.4%)	3766 (3.7%)	6647 (4.3%)
30–34 years	1714 (9.7%)	1451 (4.1%)	3981 (3.9%)	7146 (4.6%)
35–39 years	2301 (13.0%)	2137 (6.1%)	5594 (5.5%)	10 032 (6.5%)
40–44 years	2754 (15.6%)	2768 (7.8%)	7132 (7.0%)	12 654 (8.2%)
45–49 years	2856 (16.2%)	3177 (9.0%)	8131 (8.0%)	14 165 (9.1%)
50–54 years	2560 (14.5%)	3195 (9.1%)	8793 (9.5%)	14 548 (9.4%)
55–59 years	2048 (11.6%)	3538 (10.0%)	9743 (9.5%)	15 329 (9.9%)
60–64 years	1415 (8.0%)	3842 (10.9%)	11 355 (11.1%)	16 612 (10.7%)
65 years and over	658 (3.7%)	13 627 (38.6%)	43 670 (42.7%)	57 955 (37.4%)
Living with a partner	11 594 (65.7%)	20 053 (56.8%)	72 517 (71.0%)	104 164 (67.2%)
Remoteness of residence*				
Major cities	13 045 (74.0%)	25 326 (71.8%)	78 616 (76.9%)	116 987 (75.4%)
Inner regional	3428 (19.4%)	7494 (21.2%)	17 185 (16.8%)	28 107 (18.1%)
Outer regional, remote, very remote	874 (5.0%)	2073 (5.9%)	3910 (3.8%)	6857 (4.4%)
Missing data	288 (1.6%)	394 (1.1%)	2455 (2.4%)	3137 (2.0%)
Financial year				
2001–02	640 (3.6%)	1170 (3.3%)	2637 (2.6%)	4447 (2.9%)
2002–03	672 (3.8%)	1338 (3.8%)	3135 (3.1%)	5145 (3.3%)
2003–04	716 (4.1%)	1227 (3.5%)	3247 (3.2%)	5190 (3.3%)
2004–05	602 (3.4%)	1367 (3.9%)	3222 (3.2%)	5191 (3.3%)
2005–06	567 (3.2%)	1556 (4.4%)	3533 (3.5%)	5656 (3.6%)
2006–07	659 (3.7%)	1689 (4.8%)	3846 (3.8%)	6194 (4.0%)
2007–08	644 (3.7%)	1604 (4.5%)	4205 (4.1%)	6453 (4.2%)
2008–09	919 (5.2%)	1781 (5.0%)	4376 (4.3%)	7076 (4.6%)
2009–10	1169 (6.6%)	1914 (5.4%)	4965 (4.9%)	8048 (5.2%)
2010–11	1243 (7.0%)	2040 (5.8%)	5572 (5.5%)	8855 (5.7%)
2011–12	1261 (7.2%)	1855 (5.3%)	5905 (5.8%)	9021 (5.8%)
2012–13	1129 (6.4%)	1885 (5.3%)	6434 (6.3%)	9448 (6.1%)
2013–14	957 (5.4%)	2087 (5.9%)	7181 (7.0%)	10 225 (6.6%)
2014–15	936 (5.3%)	2240 (6.3%)	7513 (7.4%)	10 689 (6.9%)
2015–16	859 (4.9%)	2217 (6.3%)	7248 (7.1%)	10 324 (6.7%)
2016–17	977 (5.5%)	2299 (6.5%)	7129 (7.0%)	10 405 (6.7%)
2017–18	1196 (6.8%)	2410 (6.8%)	7452 (7.3%)	11 058 (7.1%)
2018–19	1333 (7.6%)	2464 (7.0%)	7403 (7.2%)	11 200 (7.2%)
2019–20	1156 (6.6%)	2144 (6.1%)	7163 (7.0%)	10 463 (6.7%)
Principal diagnosis				
Intervertebral disc disorders	10 053 (57.0%)	11 585 (32.8%)	40 240 (39.4%)	61 878 (39.9%)
Spondylopathies	3169 (18.0%)	11 888 (33.7%)	34 936 (34.2%)	49 993 (32.2%)
Back pain	2732 (15.5%)	6085 (17.2%)	11 881 (11.6%)	20 698 (13.3%)
Deforming dorsopathies	670 (3.8%)	2013 (5.7%)	7185 (7.0%)	9868 (6.4%)
Disorders of central nervous systems, nerve root	519 (2.9%)	2596 (7.4%)	4186 (4.1%)	7301 (4.7%)
Symptoms involved nervous and musculoskeletal systems	91 (0.5%)	247 (0.7%)	782 (0.8%)	1120 (0.7%)
Others	401 (2.3%)	873 (2.5%)	2956 (2.9%)	4230 (2.7%)

SD = standard deviation.

* Based on the Australian Statistical Geography Standard 2016 classification;² remoteness categories were mapped to the Statistical Area Level 2 of residential postcodes.

Table 5. Adults who underwent elective procedures for degenerative spinal conditions in New South Wales, 2001–20, by procedure type and funding type: crude rates, with 95% confidence intervals*

Financial year	Privately funded	Workers' compensation	Publicly funded	
			Lower bound	Upper bound
Rates of spinal fusion per 100,000 people (age 18 years and over)				
2001–02	26.6 (24.5–28.9)	6.1 (5.1–7.1)	5.6 (5.0–6.3)	10.5 (9.2–11.8)
2002–03	34.0 (31.6–36.5)	5.1 (4.3–6.1)	5.9 (5.2–6.6)	10.9 (9.6–12.2)
2003–04	41.8 (39.1–44.6)	6.9 (5.9–8.0)	6.0 (5.3–6.7)	11.0 (9.8–12.4)
2004–05	40.6 (38.0–43.3)	5.9 (5.0–6.9)	7.5 (6.7–8.3)	13.8 (12.4–15.3)
2005–06	46.7 (44.0–49.6)	6.0 (5.1–7.0)	9.1 (8.3–10.0)	16.9 (15.4–18.5)
2006–07	51.0 (48.1–53.9)	7.2 (6.2–8.3)	9.9 (9.0–10.8)	18.6 (17.0–20.3)
2007–08	57.0 (54.1–60.1)	6.7 (5.8–7.7)	10.4 (9.5–11.3)	19.9 (18.2–21.7)
2008–09	57.8 (54.9–60.9)	11.0 (9.8–12.3)	11.2 (10.3–12.2)	21.5 (19.7–23.3)
2009–10	69.0 (65.7–72.4)	15.6 (14.2–17.2)	12.7 (11.8–13.7)	23.2 (21.5–25.0)
2010–11	77.7 (74.2–81.3)	17.1 (15.6–18.7)	13.2 (12.2–14.2)	24.2 (22.5–26.1)
2011–12	84.5 (80.9–88.2)	18.7 (17.2–20.3)	12.0 (11.1–13.0)	22.4 (20.7–24.2)
2012–13	87.8 (84.2–91.5)	15.7 (14.4–17.2)	12.6 (11.7–13.6)	23.6 (21.9–25.4)
2013–14	100.5 (96.7–104.5)	12.6 (11.4–13.9)	12.7 (11.8–13.7)	24.0 (22.3–25.8)
2014–15	103.7 (99.8–107.6)	12.0 (10.8–13.3)	14.5 (13.5–15.5)	27.4 (25.6–29.4)
2015–16	99.6 (95.8–103.4)	11.8 (10.7–13.1)	13.1 (12.2–14.1)	24.7 (23.0–26.5)
2016–17	97.9 (94.2–101.7)	12.6 (11.5–13.9)	13.8 (12.9–14.8)	25.7 (24.0–27.6)
2017–18	105.4 (101.6–109.4)	15.7 (14.3–17.0)	15.2 (14.3–16.3)	27.9 (26.1–29.7)
2018–19	105.6 (101.7–109.5)	17.9 (16.6–19.4)	14.5 (13.5–15.5)	26.2 (24.4–27.9)
2019–20	109.5 (105.6–113.5)	15.8 (14.5–17.2)	12.4 (11.6–13.3)	22.1 (20.6–23.8)
Rate of spinal decompression per 100,000 people (age 18 years and over)				
2001–02	93.4 (89.4–97.5)	19.7 (18.0–21.5)	19.0 (17.8–20.3)	35.4 (33.1–37.7)
2002–03	108.5 (104.1–112.9)	21.3 (19.5–23.1)	22.0 (20.7–23.3)	40.6 (38.1–43.1)
2003–04	105.2 (100.9–109.5)	20.8 (19.1–22.6)	19.3 (18.1–20.6)	35.5 (33.3–37.8)
2004–05	103.4 (99.3–107.7)	17.2 (15.7–18.9)	20.5 (19.3–21.8)	37.9 (35.6–40.3)
2005–06	108.8 (104.5–113.1)	15.3 (13.8–16.8)	22.5 (21.2–23.9)	41.8 (39.3–44.3)
2006–07	113.9 (109.6–118.3)	16.6 (15.2–18.2)	24.1 (22.7–25.5)	45.4 (42.9–48.0)
2007–08	117.2 (112.9–121.6)	16.4 (14.9–18.0)	21.4 (20.1–22.7)	41.0 (38.6–43.5)
2008–09	120.6 (116.3–125.1)	21.8 (20.1–23.6)	23.4 (22.1–24.8)	44.8 (42.3–47.4)
2009–10	141.0 (136.2–145.8)	25.9 (24.1–27.8)	23.8 (22.5–25.2)	43.4 (41.1–45.9)
2010–11	151.2 (146.3–156.1)	25.6 (23.8–27.5)	25.1 (23.7–26.4)	46.1 (43.7–48.6)
2011–12	151.3 (146.5–156.2)	23.9 (22.2–25.7)	22.2 (20.9–23.5)	41.3 (39.0–43.7)
2012–13	162.7 (157.8–167.7)	21.4 (19.8–23.1)	21.8 (20.6–23.1)	40.9 (38.6–43.2)
2013–14	171.2 (166.2–176.3)	17.6 (16.1–19.1)	24.4 (23.2–25.8)	46.1 (43.7–48.7)
2014–15	175.9 (170.8–181.0)	17.3 (15.9–18.8)	24.9 (23.7–26.3)	47.2 (44.8–49.7)
2015–16	167.4 (162.6–172.4)	14.1 (12.8–15.5)	25.3 (24.0–26.6)	47.6 (45.2–50.1)
2016–17	163.0 (158.2–167.9)	16.5 (15.1–18.0)	25.3 (24.0–26.6)	47.0 (44.7–49.5)
2017–18	167.5 (162.7–172.5)	18.5 (17.1–20.0)	24.9 (23.6–26.2)	45.4 (43.1–47.8)
2018–19	165.6 (160.8–170.6)	18.6 (17.2–20.1)	26.0 (24.8–27.4)	47.0 (44.7–49.4)
2019–20	153.6 (149.0–158.4)	16.7 (15.4–18.1)	22.4 (21.2–23.6)	39.8 (37.8–42.0)
Rate of disc replacement per 1,000,000 people (age 18 years and over)				
2010–11	6.2 (3.5–10.2)	3.8 (1.9–6.8)	1.1 (0.4–2.5)	2.1 (0.8–4.5)
2011–12	6.8 (4.0–10.9)	3.4 (1.6–6.3)	2.0 (1.0–3.7)	3.8 (1.9–6.8)
2012–13	19.2 (14.2–25.4)	3.7 (1.8–6.5)	1.5 (0.6–2.9)	2.7 (1.2–5.4)
2013–14	39.5 (32.3–48)	10.4 (7.1–14.7)	4.9 (3.2–7.1)	9.2 (6.1–13.4)
2014–15	33.9 (27.3–41.7)	7.4 (4.7–11.1)	3.7 (2.3–5.7)	7.1 (4.4–10.8)
2015–16	33.9 (27.3–41.7)	6.5 (4.0–9.9)	3.5 (2.1–5.4)	6.6 (4.0–10.2)
2016–17	40.1 (32.9–48.4)	6.1 (3.7–9.4)	4.6 (3.1–6.8)	8.6 (5.7–12.6)
2017–18	45.8 (38.1–54.7)	10.6 (7.4–14.7)	5.7 (4.0–8.0)	10.5 (7.3–14.7)
2018–19	45.1 (37.4–53.8)	12.8 (9.3–17.1)	3.8 (2.4–5.7)	6.9 (4.4–10.3)
2019–20	38.4 (31.3–46.6)	9.9 (6.8–13.8)	2.8 (1.6–4.5)	5.0 (2.9–7.9)

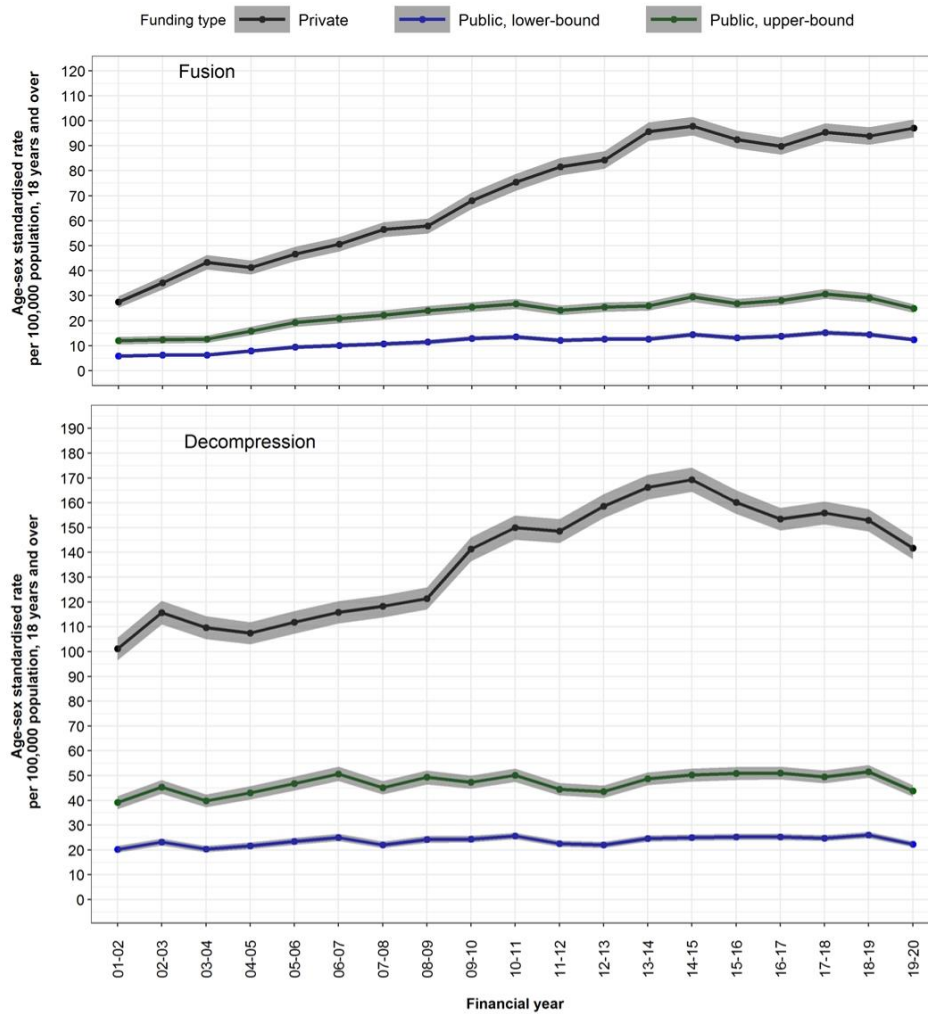
* Denominators for publicly funded, lower bound procedure rates: NSW people aged 18 years or more;¹ publicly funded, upper bound rates: NSW people aged 18 years or more who did not have hospital cover private health insurance;^{1,3} privately funded procedure rates: NSW people aged 18 years or more who had hospital cover private health insurance;³ workers' compensation procedure: NSW people aged 18 or more with workers' compensation cover.

Table 6. Adults who underwent elective fusion or decompression procedures in New South Wales, 2001–20, by funding type and age group: crude rates, with 95% confidence intervals*

Age group (years)	Privately funded	Workers' compensation	Publicly funded	
			Lower bound	Upper bound
Rates of spinal fusion per 100,000 people				
18–29	16.0 (15.0–17.0)	2.0 (1.8–2.2)	2.0 (1.8–2.2)	2.8 (2.5–3.1)
30–34	19.6 (18.2–20.9)	6.8 (6.2–7.4)	3.3 (3.0–3.7)	5.8 (5.2–6.4)
35–39	29.8 (28.3–31.5)	11.6 (10.8–12.5)	6.8 (6.3–7.3)	12.8 (11.9–13.8)
40–44	44.7 (42.8–46.6)	16.1 (15.2–17.1)	9.8 (9.1–10.4)	19.1 (17.9–20.3)
45–49	56.0 (53.9–58.2)	18.2 (17.2–19.3)	12.5 (11.8–13.3)	25.9 (24.5–27.5)
50–54	65.1 (62.9–67.5)	18.1 (17.0–19.2)	13.2 (12.4–14)	28.7 (27.0–30.4)
55–59	75.8 (73.3–78.3)	18.7 (17.5–20)	16.1 (15.2–17)	36.9 (34.9–39)
60–64	108.3 (105.1–111.6)	23.1 (21.4–25)	20.1 (19.1–21.2)	46.1 (43.7–48.6)
65 or more	176.5 (173.8–179.2)	20.0 (17.7–22.5)	21.2 (20.5–21.8)	40.1 (38.9–41.4)
Rates of spinal decompression per 100,000 people				
18–29	47.0 (45.3–48.8)	7.2 (6.8–7.7)	6.1 (5.7–6.4)	8.7 (8.2–9.2)
30–34	73.3 (70.7–75.9)	16.8 (15.9–17.8)	11.1 (10.4–11.8)	19.2 (18.1–20.4)
35–39	90.2 (87.5–93.1)	21.9 (20.8–23.1)	15.0 (14.2–15.8)	28.3 (26.9–29.8)
40–44	103.7 (100.8–106.6)	24.1 (22.9–25.3)	18.7 (17.8–19.6)	36.5 (34.8–38.2)
45–49	109.5 (106.5–112.5)	24.3 (23.2–25.5)	21.2 (20.3–22.2)	43.9 (42.0–45.9)
50–54	116.7 (113.7–119.8)	24.9 (23.6–26.2)	22.7 (21.8–23.8)	49.5 (47.3–51.7)
55–59	134.8 (131.5–138.2)	25.1 (23.6–26.5)	27.2 (26.0–28.3)	62.4 (59.8–65.0)
60–64	177.7 (173.6–181.9)	28.5 (26.5–30.5)	34.3 (33.0–35.7)	78.5 (75.4–81.7)
65 or more	288.9 (285.5–292.4)	25.9 (23.3–28.6)	47.5 (46.5–48.4)	90.0 (88.2–91.8)

* Denominators for publicly funded, lower bound procedure rates: NSW people aged 18 years or more;¹ publicly funded, upper bound rates: NSW people aged 18 years or more who did not have hospital cover private health insurance;^{1,3} privately funded procedure rates: NSW people aged 18 years or more who had hospital cover private health insurance;³ workers' compensation procedure: NSW people aged 18 or more with workers' compensation cover.

Figure 1. Adults who underwent privately or publicly funded elective fusion or decompression procedures in New South Wales, 2001–20, by funding type and age group: age- and sex-adjusted rates, with 95% confidence intervals*



* Denominators for publicly funded, lower bound procedure rates: NSW people aged 18 years or more;¹ publicly funded, upper bound rates: NSW people aged 18 years or more who did not have hospital cover private health insurance; ^{1,3} privately funded procedure rates: NSW people aged 18 years or more who had hospital cover private health insurance.³ Standardisation for age and sex based on 2016 national census data for NSW.¹ The data for this graph are included in table 7.

Table 7. Adults who underwent privately or publicly funded elective fusion or decompression procedures in New South Wales, 2001–20, by funding type and age group: age- and sex-adjusted rates, with 95% confidence intervals*

Financial year	Privately funded	Publicly funded	
		Lower bound	Upper bound
Age- and sex-adjusted rates of spinal fusion per 100,000 people (age 18 years and over)			
2001–02	27.5 (25.2–29.8)	5.9 (5.1–6.6)	12.0 (10.5–13.5)
2002–03	35.1 (32.5–37.7)	6.2 (5.5–7.0)	12.4 (10.9–13.9)
2003–04	43.4 (40.5–46.3)	6.3 (5.6–7.1)	12.6 (11.1–14.1)
2004–05	41.3 (38.5–44.1)	7.9 (7.1–8.7)	15.9 (14.2–17.6)
2005–06	46.7 (43.8–49.6)	9.5 (8.6–10.3)	19.3 (17.5–21.2)
2006–07	50.6 (47.7–53.5)	10.1 (9.2–11.0)	20.8 (18.9–22.7)
2007–08	56.5 (53.4–59.5)	10.7 (9.8–11.6)	22.3 (20.3–24.2)
2008–09	57.9 (54.8–60.9)	11.5 (10.5–12.4)	24.0 (22.0–26.0)
2009–10	68.0 (64.7–71.4)	12.9 (12.0–13.9)	25.5 (23.5–27.4)
2010–11	75.4 (72.0–78.8)	13.5 (12.5–14.5)	26.7 (24.7–28.7)
2011–12	81.6 (78.1–85.1)	12.1 (11.2–13.0)	24.2 (22.3–26.1)
2012–13	84.3 (80.8–87.9)	12.6 (11.7–13.6)	25.4 (23.5–27.3)
2013–14	95.6 (91.9–99.3)	12.7 (11.8–13.7)	25.9 (24.0–27.8)
2014–15	97.8 (94.1–101.5)	14.5 (13.5–15.5)	29.5 (27.5–31.5)
2015–16	92.4 (88.9–96.0)	13.1 (12.2–14.1)	26.8 (24.9–28.8)
2016–17	89.8 (86.4–93.3)	13.8 (12.9–14.8)	28.1 (26.2–30.1)
2017–18	95.4 (91.9–99.0)	15.2 (14.2–16.2)	30.7 (28.7–32.7)
2018–19	93.9 (90.4–97.4)	14.5 (13.5–15.5)	29.2 (27.2–31.1)
2019–20	97.0 (93.4–100.5)	12.4 (11.6–13.3)	24.9 (23.1–26.6)
Age- and sex-adjusted rates of spinal decompression per 100,000 people (age 18 years and over)			
2001–02	101.1 (96.5–105.7)	20.2 (18.9–21.6)	39.2 (36.5–41.8)
2002–03	115.7 (110.9–120.5)	23.2 (21.8–24.6)	45.4 (42.6–48.2)
2003–04	109.7 (105.0–114.3)	20.4 (19.1–21.7)	39.8 (37.2–42.4)
2004–05	107.4 (102.9–111.9)	21.7 (20.4–23.1)	43.0 (40.3–45.7)
2005–06	111.8 (107.2–116.3)	23.5 (22.1–24.9)	46.8 (44.0–49.6)
2006–07	115.8 (111.3–120.3)	25.0 (23.6–26.5)	50.7 (47.8–53.6)
2007–08	118.3 (113.8–122.7)	22.1 (20.8–23.4)	45.1 (42.4–47.8)
2008–09	121.4 (117.0–125.9)	24.2 (22.8–25.6)	49.3 (46.4–52.1)
2009–10	141.3 (136.4–146.1)	24.4 (23.1–25.8)	47.3 (44.7–50.0)
2010–11	150.0 (145.1–154.9)	25.7 (24.3–27.0)	50.1 (47.4–52.9)
2011–12	148.6 (143.8–153.4)	22.6 (21.3–23.8)	44.5 (42.0–47.0)
2012–13	158.6 (153.8–163.5)	22.0 (20.8–23.3)	43.5 (41.0–46.0)
2013–14	166.2 (161.3–171.2)	24.6 (23.3–25.9)	48.7 (46.1–51.3)
2014–15	169.3 (164.4–174.2)	25.0 (23.7–26.3)	50.2 (47.5–52.8)
2015–16	160.2 (155.5–165.0)	25.3 (24.0–26.6)	50.9 (48.2–53.5)
2016–17	153.4 (148.8–158.0)	25.3 (24.0–26.6)	51.0 (48.4–53.6)
2017–18	155.9 (151.3–160.6)	24.8 (23.6–26.1)	49.5 (46.9–52.0)
2018–19	152.9 (148.4–157.5)	26.0 (24.7–27.3)	51.6 (49.1–54.2)
2019–20	141.7 (137.2–146.1)	22.3 (21.1–23.5)	43.8 (41.5–46.2)

* Denominators for publicly funded, lower bound procedure rates: NSW people aged 18 years or more;¹ publicly funded, upper bound rates: NSW people aged 18 years or more who did not have hospital cover private health insurance;^{1,3} privately funded procedure rates: NSW people aged 18 years or more who had hospital cover private health insurance.³ Standardisation for age and sex based on 2016 national census data for NSW.¹ The data for this graph are included in table 7.

Table 8. Adults who underwent privately or publicly funded elective fusion or decompression procedures in New South Wales, 2001–20: incidence rate ratios, with 95% confidence intervals, for crude and age- and sex-adjusted annual rate changes*

Procedure	Privately funded	Workers' compensation	Publicly funded	
			Lower bound	Upper bound
Change in crude rates, age ≥ 18 years				
Fusion	1.06 (1.05–1.07)	1.04 (1.01–1.06)	1.03 (1.01–1.06)	1.03 (1.01–1.05)
Decompression	1.02 (1.01–1.03)	0.98 (0.96–0.99)	1.00 (0.98–1.01)	1.00 (0.98–1.01)
Change in age- and sex-adjusted rates, age 18–64 years				
Fusion	1.05 (1.04–1.07)	1.04 (1.02–1.07)	1.04 (1.01–1.07)	1.02 (1.00–1.04)
Decompression	1.02 (1.01–1.03)	0.98 (0.96–1.00)	1.00 (0.98–1.02)	0.99 (0.98–1.00)
Change in age- and sex-adjusted rates, age ≥ 18 years				
Fusion	1.05 (1.04–1.06)	NA	1.03 (1.00–1.05)	1.03 (1.01–1.04)
Decompression	1.01 (1.00–1.02)	NA	0.99 (0.98–1.01)	0.99 (0.98–1.00)

NA = not applicable (age- and sex-adjusted rates for people aged 18 years or over were calculated for only privately or publicly funded elective fusion or decompression procedures)

* Incidence rate ratio and 95% were calculated using generalised linear models (PROC GENMOD, Poisson distribution, log-link function, an offset term as the log of the denominator. Denominators for publicly funded, lower bound procedure rates: NSW people aged 18 years or more or 18–64 years;¹ publicly funded, upper bound rates: NSW people aged 18 years or more or 18–64 years who did not have hospital cover private health insurance; ^{1,3} privately funded procedure rates: NSW people aged 18 years or more or 18–64 years who had hospital cover private health insurance; ³ workers' compensation procedure: NSW people aged 18–64 years with workers' compensation cover. Standardisation for age and sex based on 2016 national census data for NSW.¹

Table 9. Working age adults (18–64 years) who underwent elective fusion or decompression procedures in New South Wales, 2001–20, by funding type: age- and sex-adjusted rates, with 95% confidence intervals*

Financial year	Privately funded	Workers' compensation	Publicly funded	
			Lower-bound	Upper-bound
Age- and sex-adjusted rates of spinal fusion per 100,000 people (age 18–64)				
2001–02	20.1 (18.0–22.1)	5.8 (4.8–6.8)	4.9 (4.2–5.6)	11.0 (9.3–12.6)
2002–03	23.4 (21.2–25.6)	5.3 (4.3–6.3)	4.3 (3.7–5.0)	9.7 (8.6–11.2)
2003–04	28.2 (25.8–30.6)	6.9 (5.8–8.1)	4.5 (3.8–5.2)	10.0 (8.4–11.5)
2004–05	26.3 (24.0–28.6)	5.9 (4.9–6.9)	5.9 (5.2–6.7)	13.1 (11.4–14.8)
2005–06	31.4 (28.9–33.9)	6.0 (5.0–7.0)	6.8 (6.0–7.7)	15.3 (13.4–17.2)
2006–07	33.6 (31.1–36.1)	7.4 (6.3–8.5)	7.8 (6.9–8.7)	17.2 (15.3–19.1)
2007–08	39.1 (36.4–41.8)	6.6 (5.6–7.6)	7.9 (7.0–8.8)	17.8 (15.8–19.7)
2008–09	34.9 (32.4–37.4)	10.9 (9.7–12.2)	8.9 (8.0–9.8)	19.8 (17.7–21.8)
2009–10	40.0 (37.3–42.7)	15.5 (14.0–17.1)	10.3 (9.4–11.3)	21.2 (19.2–23.2)
2010–11	49.0 (46.0–52.0)	17.1 (15.5–18.7)	9.8 (8.9–10.7)	20.5 (18.5–22.4)
2011–12	53.3 (50.2–56.4)	18.7 (17.0–20.3)	9.8 (8.9–10.7)	20.1 (18.2–22.0)
2012–13	53.3 (50.3–56.4)	15.7 (14.2–17.1)	9.8 (8.9–10.7)	20.2 (18.3–22.2)
2013–14	57.8 (54.6–60.9)	13.0 (11.7–14.4)	9.9 (8.9–10.8)	20.6 (18.6–22.5)
2014–15	62.3 (59.1–65.6)	12.6 (11.3–14.0)	11.8 (10.8–12.8)	24.3 (22.2–26.4)
2015–16	58.1 (55.0–61.3)	12.1 (10.8–13.4)	10.6 (9.7–11.6)	21.9 (19.9–23.8)
2016–17	60.0 (56.8–63.2)	12.9 (11.6–14.2)	11.6 (10.6–12.6)	23.4 (21.4–25.4)
2017–18	62.6 (59.2–65.9)	15.9 (14.5–17.3)	12.4 (11.4–13.4)	24.7 (22.7–26.7)
2018–19	58.3 (55.1–61.6)	18.2 (16.7–19.7)	11.5 (10.5–12.4)	22.6 (20.7–24.6)
2019–20	64.3 (60.9–67.7)	16.3 (14.9–17.8)	10.2 (9.2–11.1)	19.8 (18.0–21.6)
Age- and sex-adjusted rates of spinal decompression per 100,000 people (age 18–64)				
2001–02	68.0 (64.2–71.9)	19.1 (17.2–20.9)	13.7 (12.5–14.9)	29.9 (27.2–32.5)
2002–03	76.9 (72.8–80.9)	21.1 (19.1–23.0)	16.6 (15.3–17.9)	36.0 (33.1–38.9)
2003–04	74.2 (70.2–78.1)	19.8 (18.0–21.7)	14.0 (12.8–15.2)	30.2 (27.6–32.8)
2004–05	69.9 (66.1–73.7)	16.9 (15.2–18.5)	14.5 (13.3–15.7)	31.8 (29.1–34.5)
2005–06	75.3 (71.4–79.2)	15.2 (13.6–16.7)	16.2 (14.9–17.4)	35.0 (32.2–37.8)
2006–07	82.6 (78.5–86.6)	16.0 (14.5–17.6)	17.9 (16.6–19.2)	39.0 (36.1–41.9)
2007–08	83.5 (79.5–87.4)	16.3 (14.7–17.8)	16.1 (14.8–17.3)	35.2 (32.4–37.9)
2008–09	86.3 (82.3–90.4)	21.2 (19.4–22.9)	17.1 (15.9–18.4)	36.9 (34.2–39.7)
2009–10	98.2 (93.8–102.6)	25.4 (23.5–27.3)	18.6 (17.3–19.9)	37.4 (34.8–40.0)
2010–11	108.2 (103.7–112.8)	25.5 (23.6–27.4)	18.5 (17.2–19.8)	37.6 (35.0–40.3)
2011–12	110.5 (105.9–115.0)	23.6 (21.8–25.4)	16.1 (14.9–17.0)	32.8 (30.3–35.2)
2012–13	117.3 (112.7–122.0)	21.0 (19.3–22.7)	16.5 (15.3–17.7)	33.2 (30.7–35.6)
2013–14	120.9 (116.2–125.6)	17.5 (15.9–19.0)	19.0 (17.7–20.3)	38.0 (35.4–40.6)
2014–15	124.5 (119.7–129.2)	17.6 (16.1–19.1)	18.9 (17.6–20.1)	38.0 (35.5–40.6)
2015–16	117.8 (113.1–122.4)	14.5 (13.1–15.8)	19.7 (18.4–20.9)	39.4 (36.8–42.0)
2016–17	113.0 (108.5–117.6)	16.7 (15.2–18.1)	19.5 (18.3–20.8)	39.0 (36.5–41.6)
2017–18	111.1 (106.6–115.7)	19.0 (17.4–20.5)	18.7 (17.5–20.0)	36.6 (34.1–39.0)
2018–19	110.6 (106.1–115.2)	18.4 (16.9–19.9)	20.0 (18.7–21.3)	38.7 (36.2–41.2)
2019–20	104.8 (100.3–109.3)	16.7 (15.2–18.1)	16.2 (15.1–17.4)	30.6 (28.4–32.7)

* Denominators for publicly funded, lower bound procedure rates: NSW people aged 18–64 years;¹ publicly funded, upper bound rates: NSW people aged 18–64 years who did not have hospital cover private health insurance;^{1,3} privately funded procedure rates: NSW people aged 18–64 years who had hospital cover private health insurance;³ workers' compensation procedure: NSW people aged 18–64 years with workers' compensation cover. Standardisation for age and sex based on 2016 national census data for NSW.¹

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