BSR ANNUAL REPORT 2021

Aims of the Registry

The BSR has been collecting data on spinal surgery in the United Kingdom since 2012.

Submitting data to the registry was mandated by specialist commissioning since 2016 and has been subject to a Best Practice Tariff since April 2019.

The aims of the registry are to improve patient care and the understanding of spinal surgery through the collection of clinical data. The specific aims remain:

1. To quality assure surgery at unit and surgeon level.
2. To perform clinical research
3. To assess device performance

Registry Usage Data

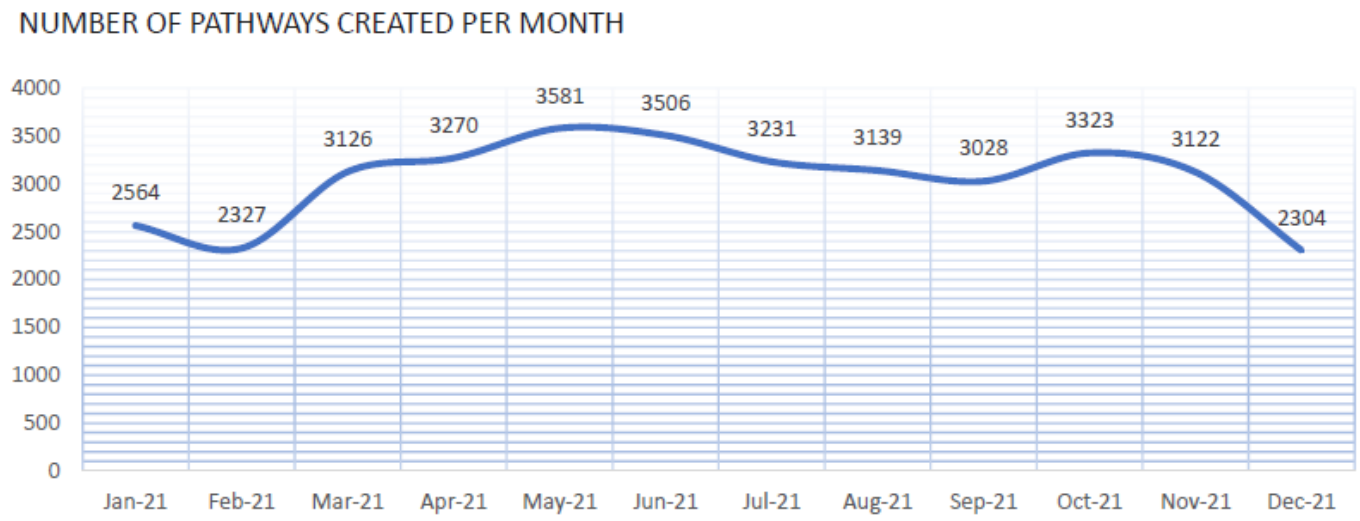
Total number of Users: 2,703 (11% increase from 2020)

Total Number of Patients (including those without pathways): 255,463 (16% increase from 2020)

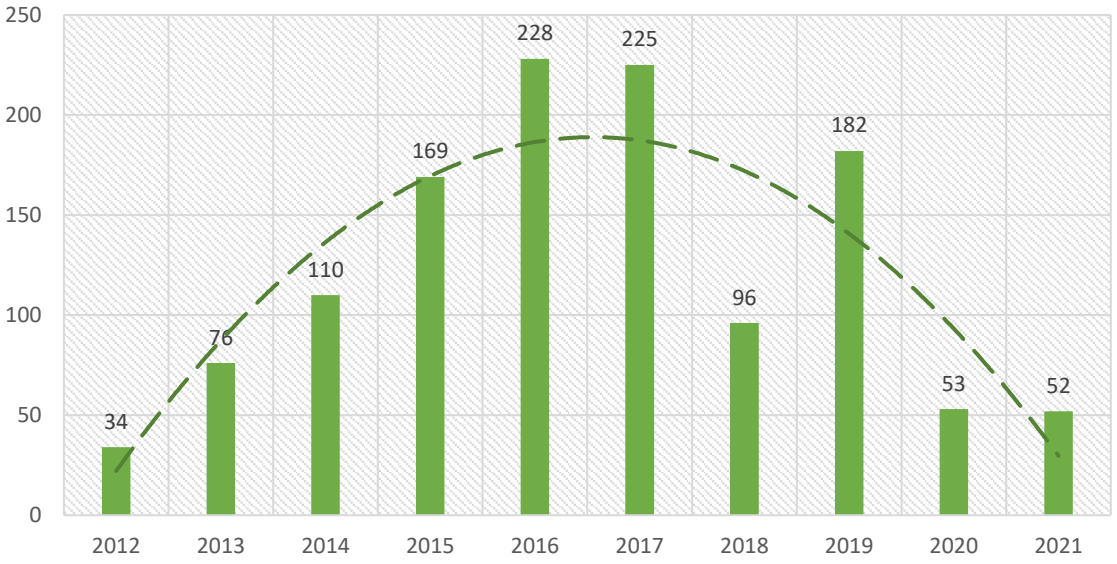
970 Delegates actively* adding data into the BSR.

586 Pathway Owners actively* adding data into the BSR.

*Active defined as users that have logged into the BSR within the past 2 years.

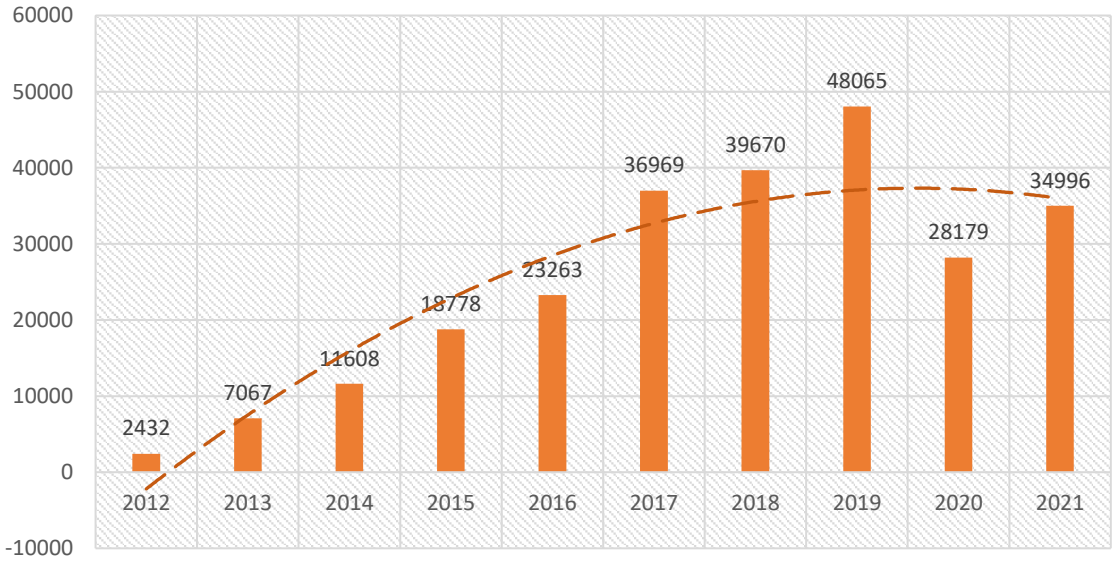


Increase in Pathway Owners per Year



PATIENTS ON PATHWAYS COUNT	TOTAL
Spinal (Lumbar Degenerative) Pathway	178552
Spinal (Cervicothoracic Degenerative) Pathway	40825
Spinal (Deformity) Pathway	22774
Spinal (Trauma) Pathway	6404
Spinal (Tumour) Pathway	3754
Spinal (Intradural) Pathway	1789
Spinal (Infection) Pathway	988
Spinal (Night Bracing) Pathway (BASIS)	1

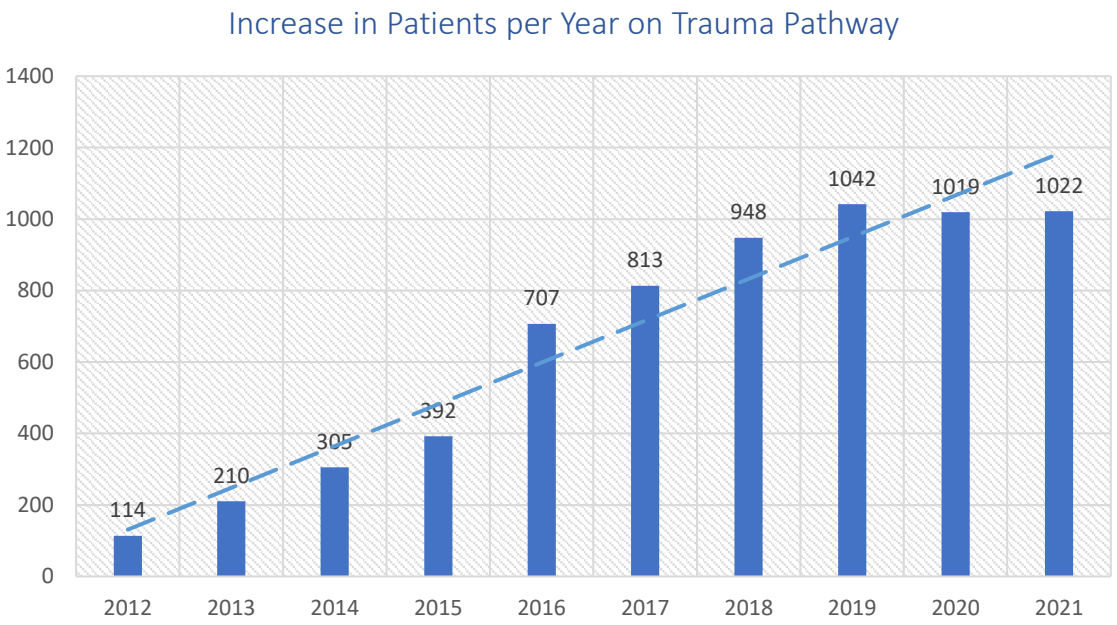
Increase in Number of Patients per Year

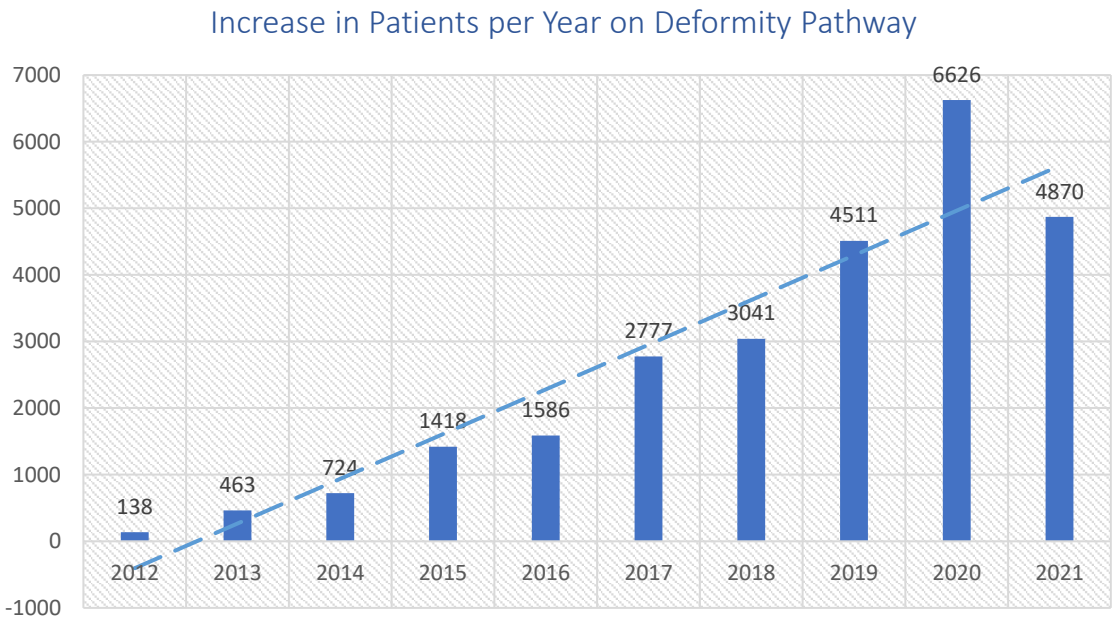


Pathway Increases

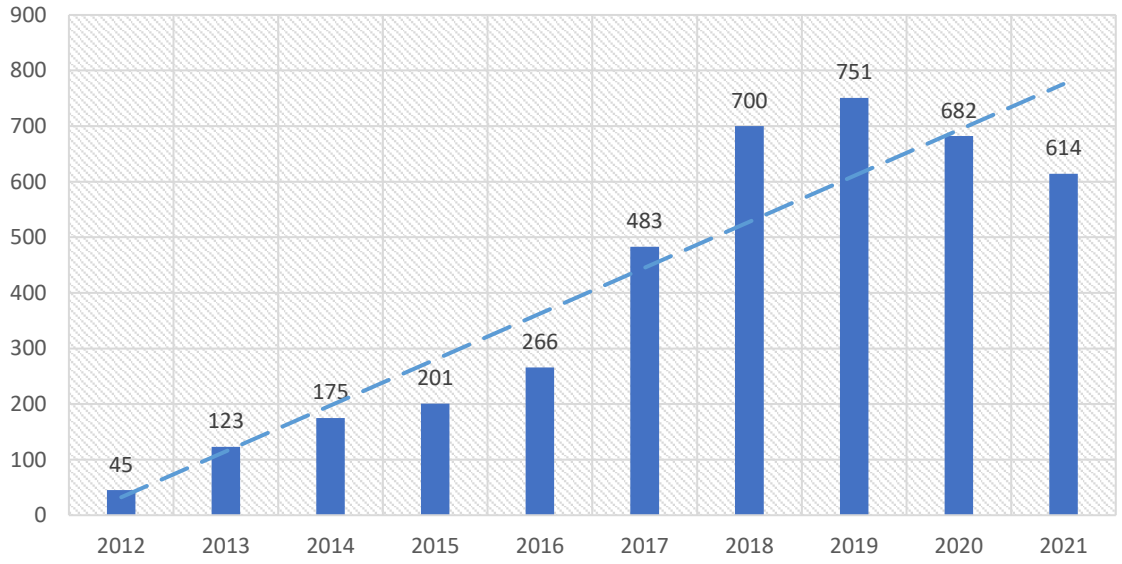
As would be expected, the pathway increase rate fell during 2020 and 2021 likely due to the Covid-19 pandemic.

In November 2021 the Spinal Night Bracing (BASIS) Pathway was launched.

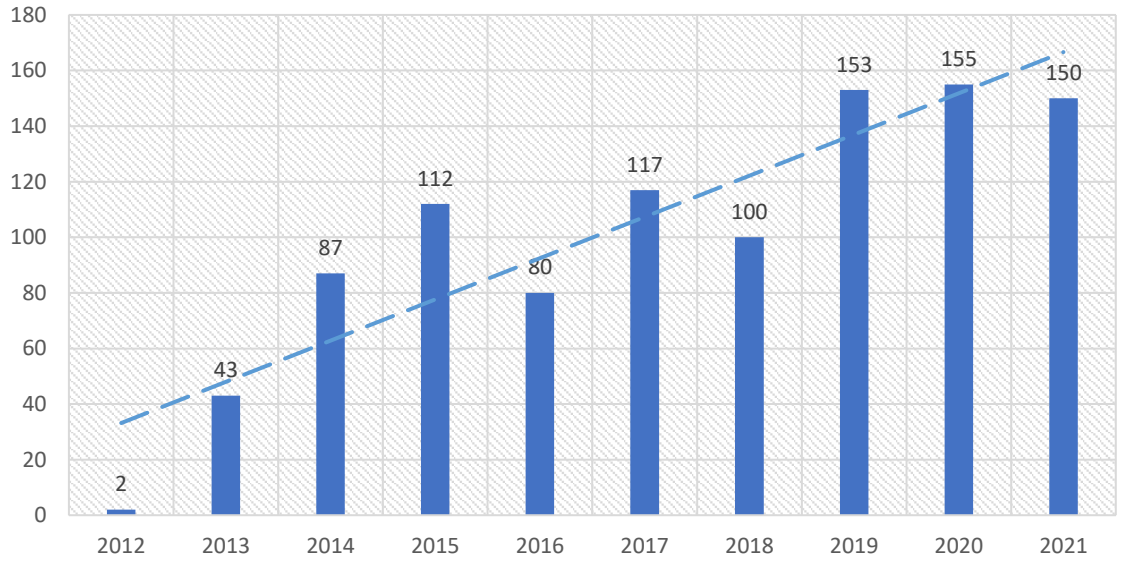




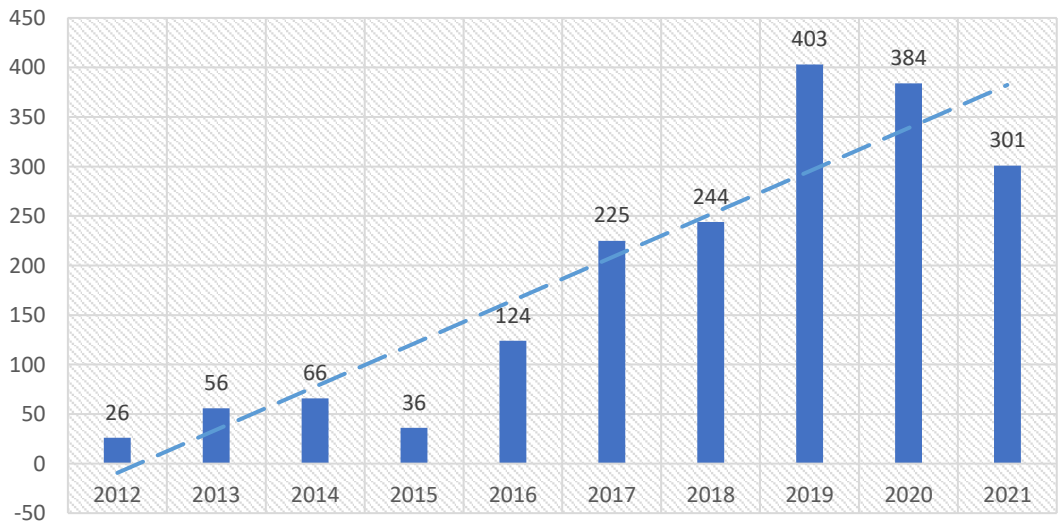
Increase in Patients per Year on Tumour Pathway



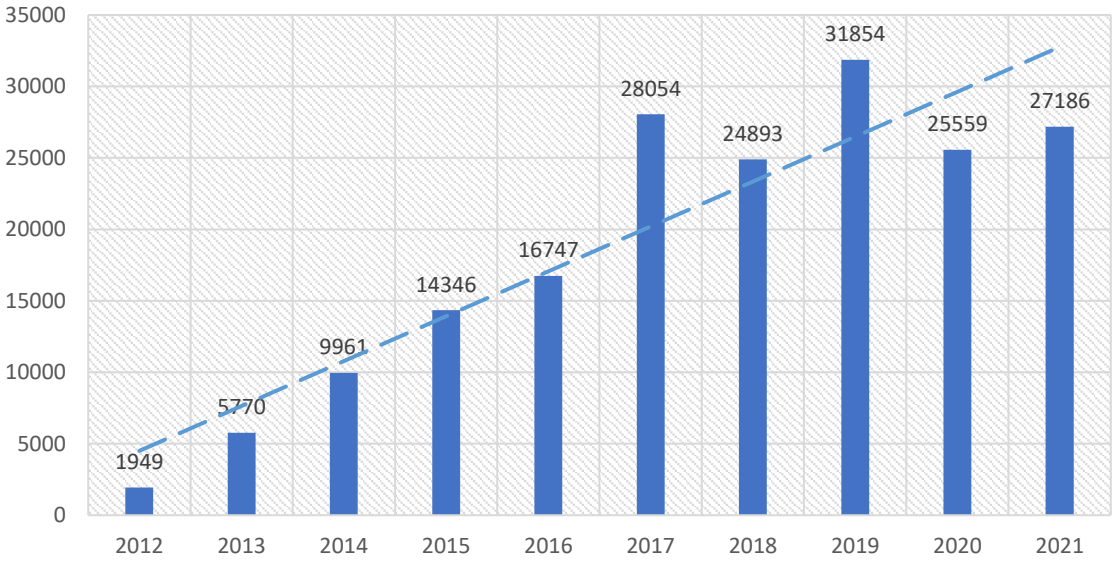
Increase in Patients per Year on Infection Pathway



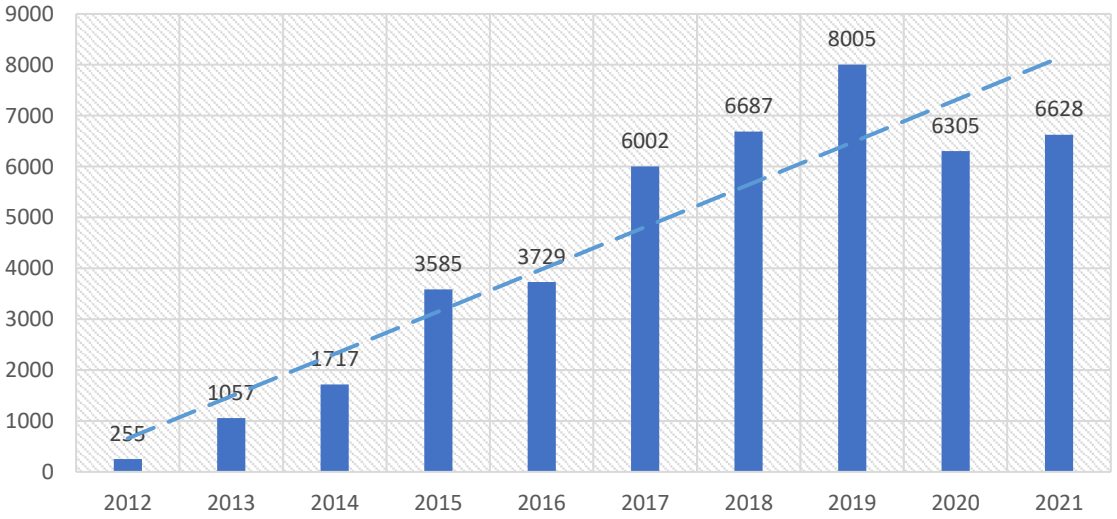
Increase in Patients per Year on Intradural Pathway

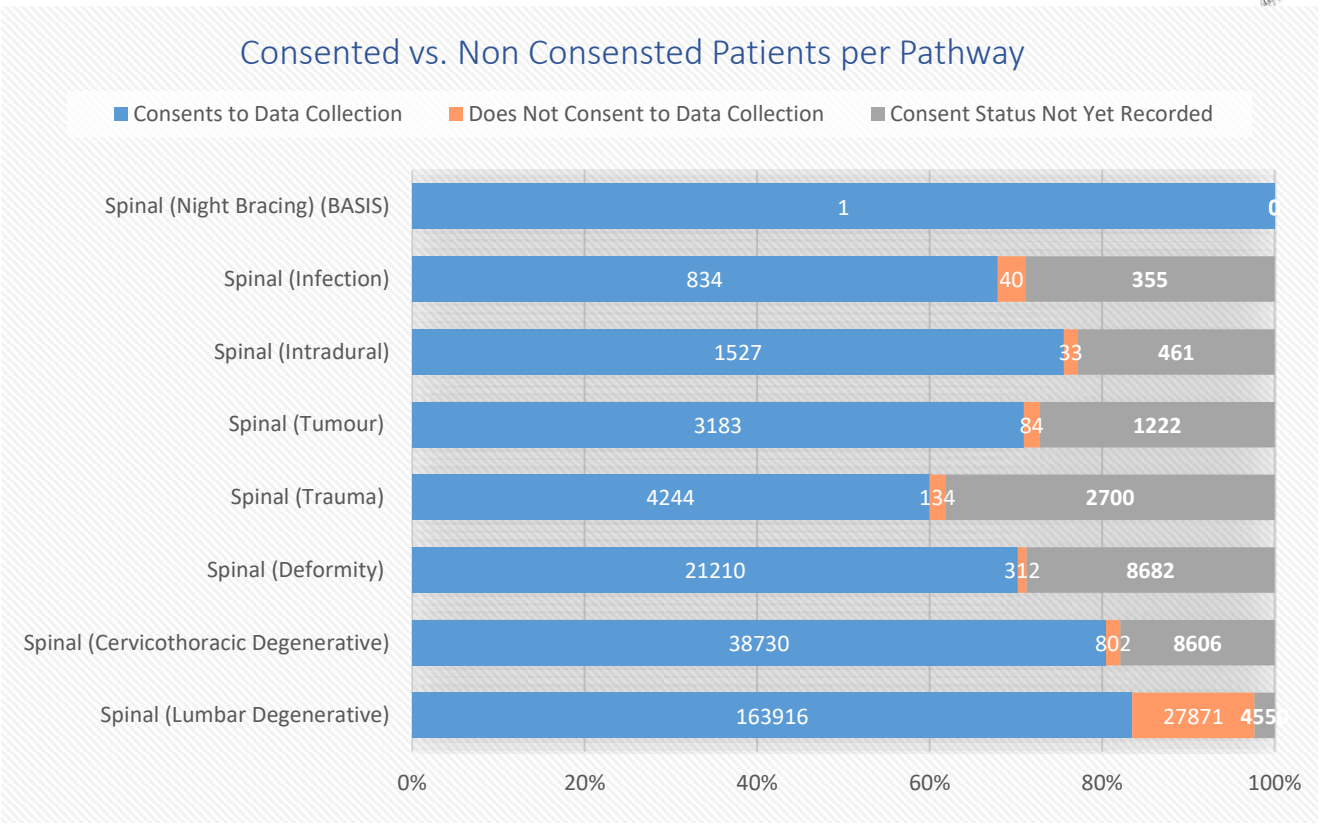


Increase in Patients per Year on Lumbar Degenerative Pathway

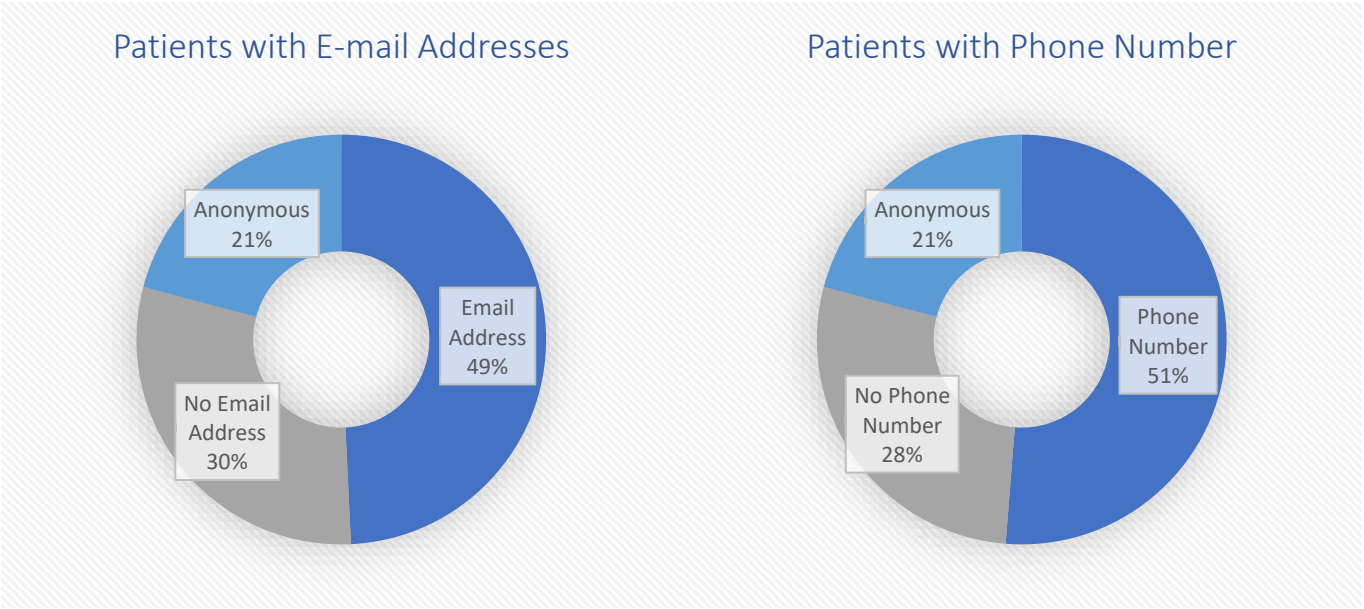


Increase in Patients per Year on Cervicothoracic Degenerative Pathway



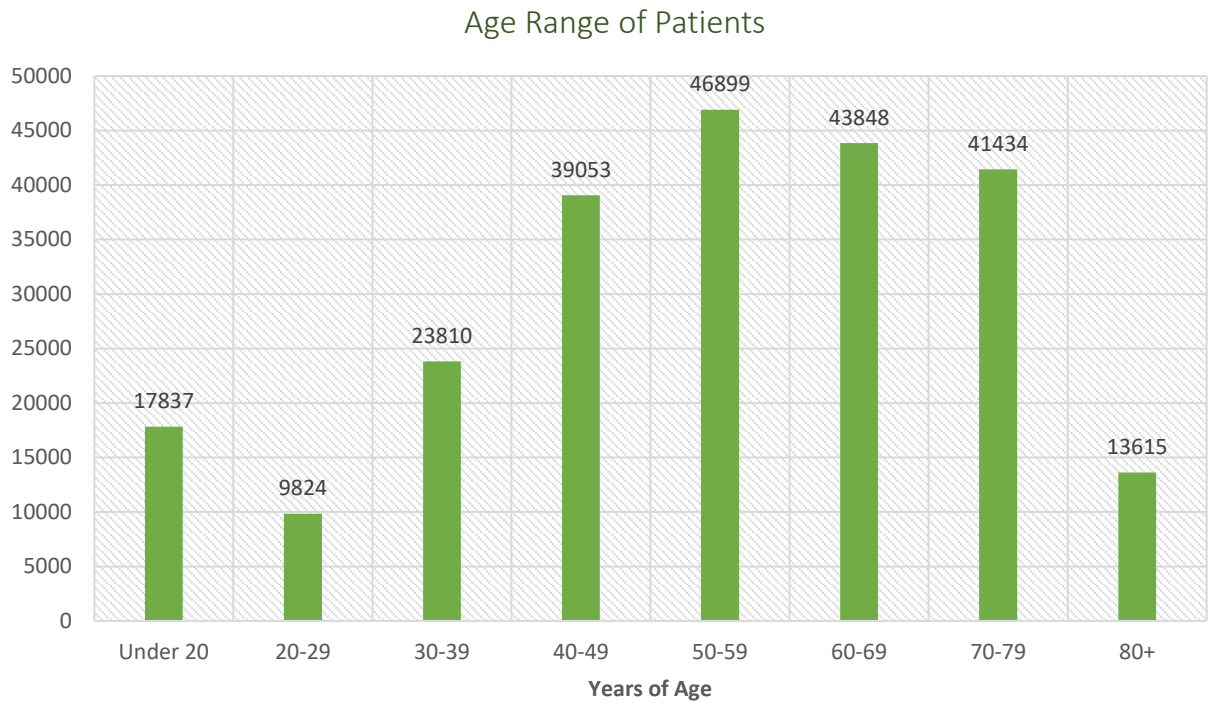


Overall, of those that have recorded their consent, 89% of patients on the BSR consent to their data being collected.



Clinical Analysis

To date the BSR includes 73,787Primary Lumbar Decompressions recorded, which include 38,399 Discectomies. The total complication rate for these Decompressions, including intra and post-op complications was 6.5%.



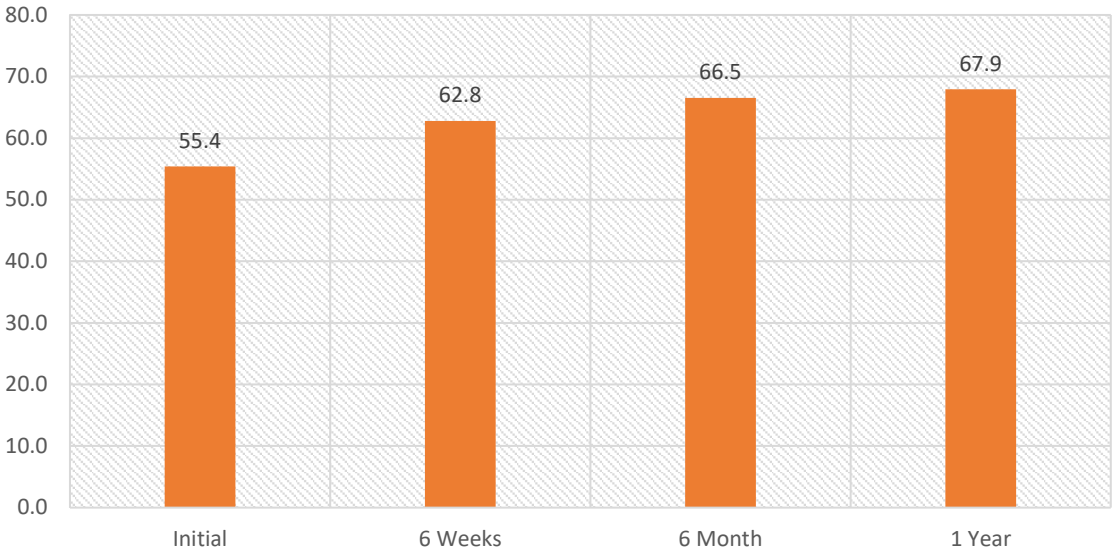
These statistics demonstrate that 23% of patients on the BSR are 70+ years of age, 79% of those coming from the Lumbar Degenerative Pathway. Whilst under 20s make up 8% of the registry, 85% of those coming from the Deformity Pathway.

The recorded Patient Reported Outcome Measures (PROMs) are measured as follows:

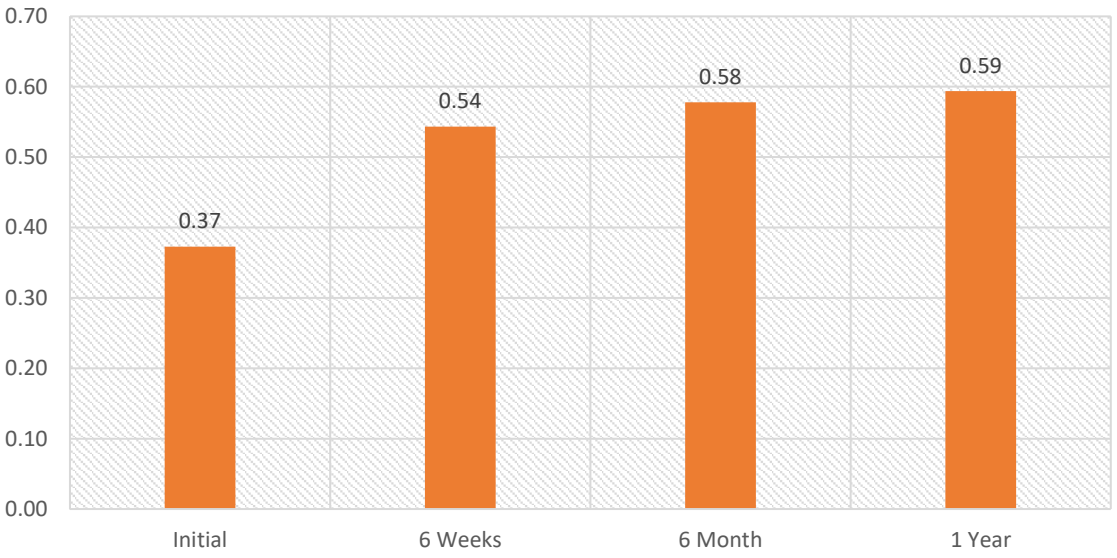
- Pre-Op from 180 days before the intervention to 14 days after the intervention.
- 6 weeks from 15 to 98 days after the intervention.
- 6 months from 134 to 274 days after the intervention.
- 12 months from 275 to 547 days after the intervention.

The PROM averages are as below, representing averages across all pathways.

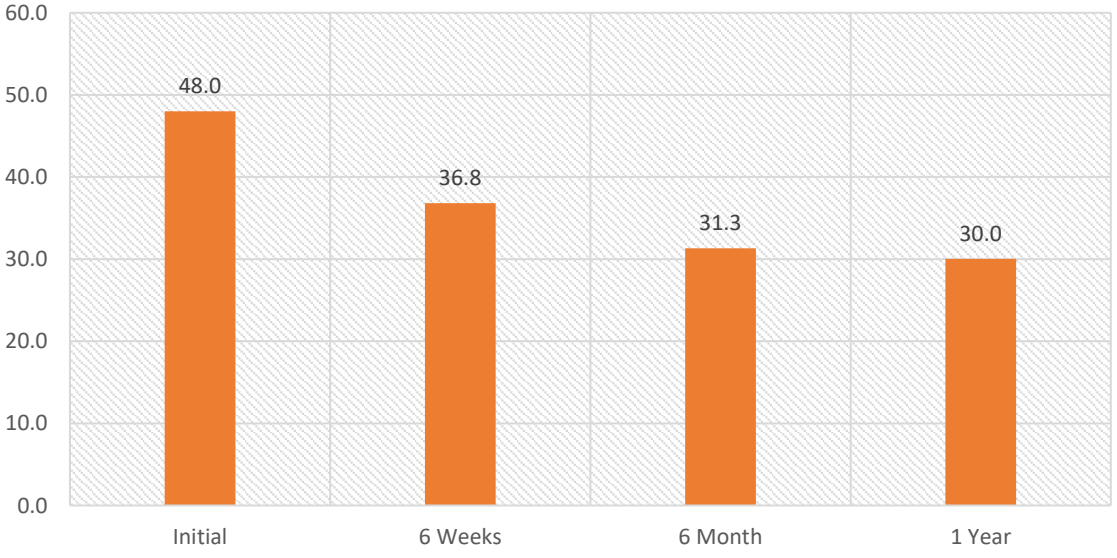
EQ-5D Health VAS

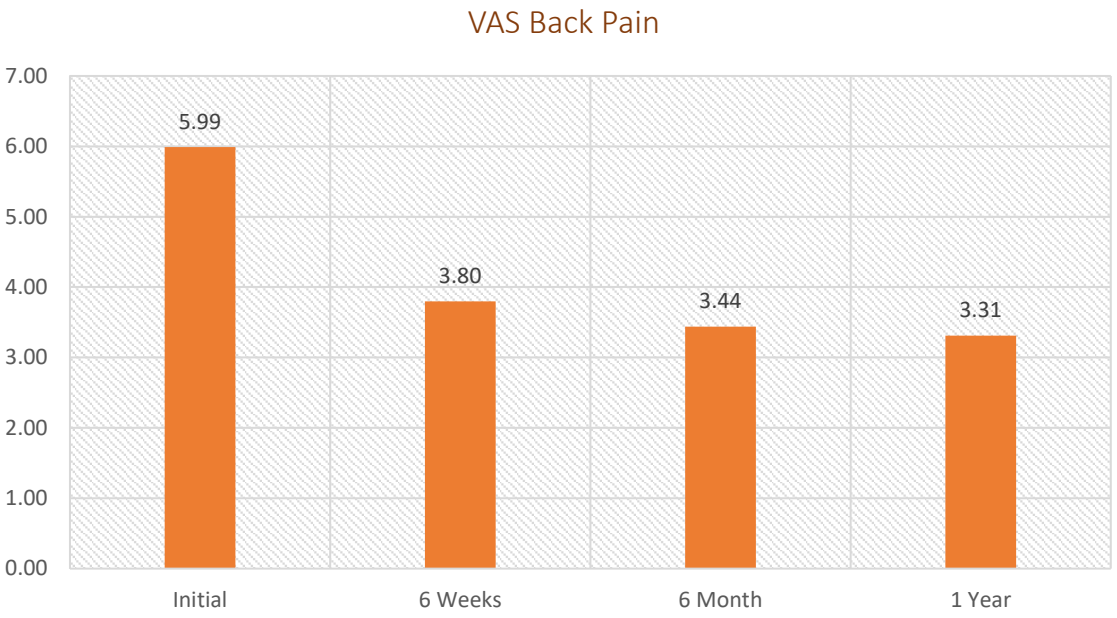


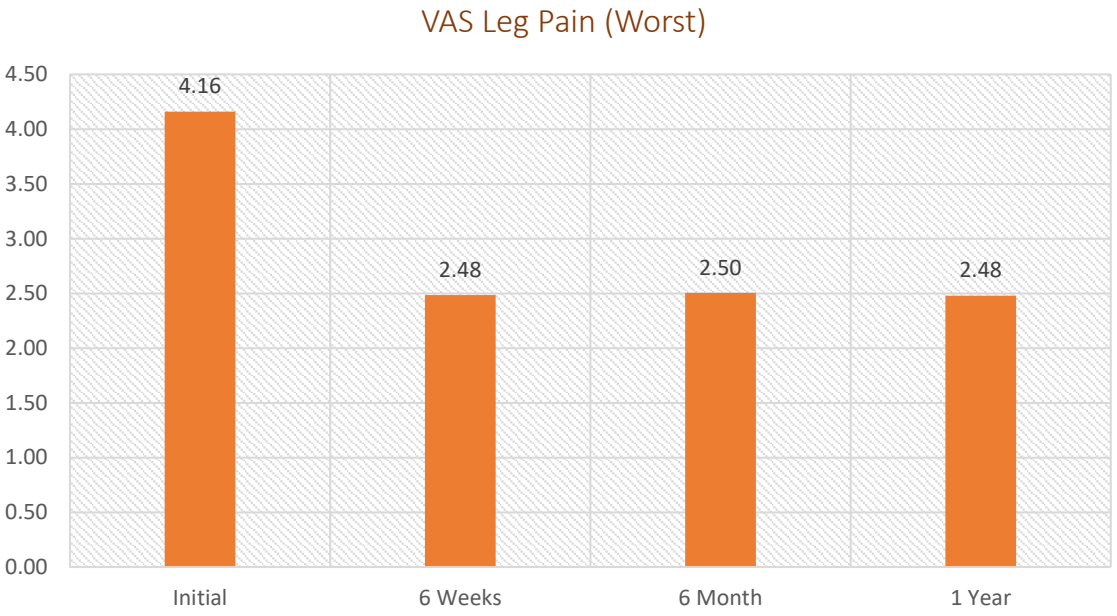
EQ-5D Index



Oswestry Disability Index

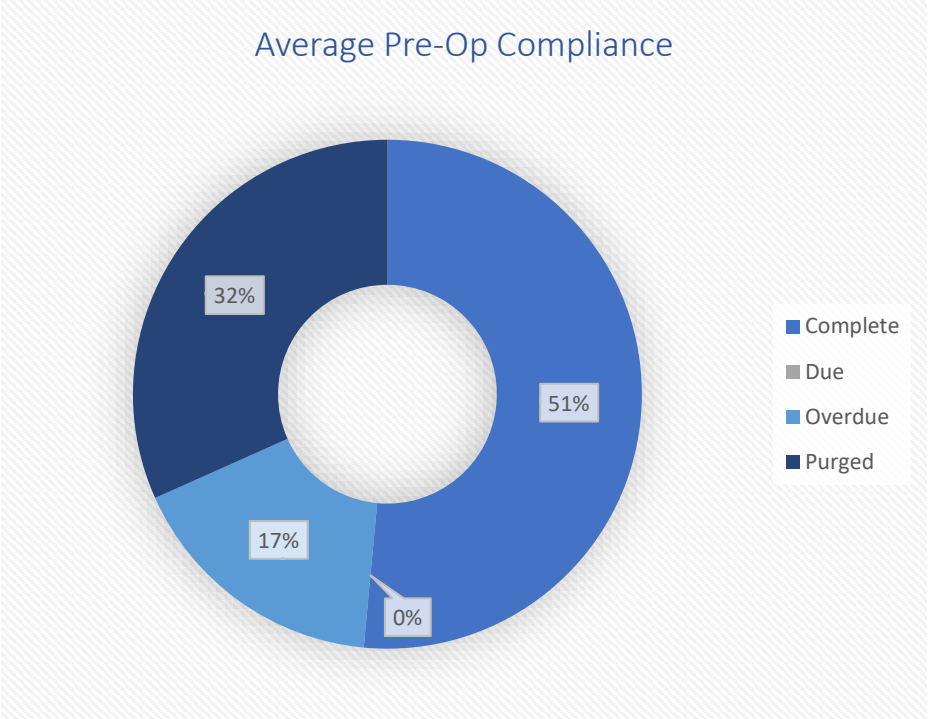


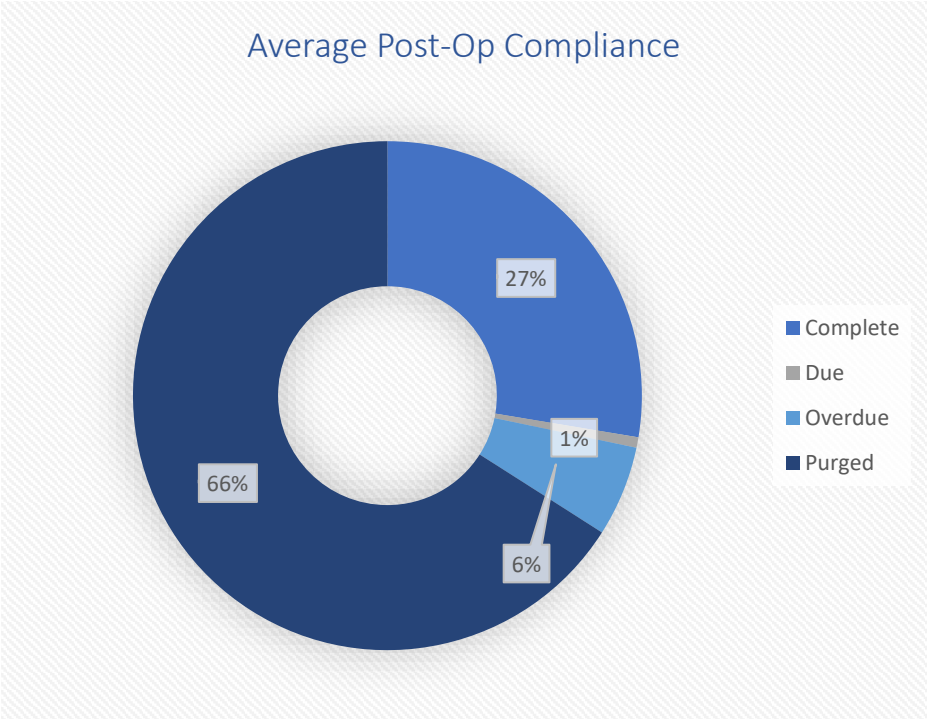




Pre-Op compliance compared with Post-Op compliance. Graphs show an average compliance for all BSR pathways, percentages are of the total number of forms due or past due date i.e. excludes those which are not yet due.

The EQ-5D 5L score is used to determine compliance as this is a universal measure.


Average Pre-Op Compliance
32%
51%
17%
0%
Complete
Due
Overdue
Purged


Average Post-Op Compliance
27%
1%
66%
6%
Complete
Due
Overdue
Purged

Clinical Research

In November 2021 the Spinal Night Bracing (BASIS) Pathway was launched. This is to support the Bracing Adolescent Idiopathic Scolio-sis (BASIS) Study and is for research only.

Research completed this year includes:

McIlroy S, Jadhakhan F, Bell D, Rushton A. Prediction of walking ability following posterior decompression for lumbar spinal stenosis. Eur Spine J. 2021 Nov;30(11):3307-3318. doi: 10.1007/s00586-021-06938-6. Epub 2021 Aug 5. PMID: 34351524; PMCID: PMC8550110.

Gardner A, Cole A, Harding I. What does the SRS-22 outcome measure tell us about spinal deformity surgery for Adolescent Idiopathic Scoliosis in the UK? Ann R Coll Surg Engl. 2021 Jul;103(7):530-535. doi: 10.1308/rcsann.2021.0005. PMID: 34192483.

Habeebullah A, Rajgor HD, Gardner A, Jones M. The impact of a spinal best practice tariff on compliance with the British Spine Registry. Bone Jt Open. 2021 Mar;2(3):198-201. doi: 10.1302/2633-1462.23.BJO-2020-0182. PMID: 33739139; PMCID: PMC8009900.

Best Practice Tariff (BPT)

In 2019/20, NHS England and NHS Improvement introduced a BPT to improve the proportion of spinal surgery cases entered into the BSR. This BPT aims to support meaningful comparison and analysis of spinal surgery and help to reduce variation in the treatment and outcomes for patients. The BPT price is made up of two components: a base price and a BPT price (based on a conditional top-up payment added to the base price). The base price is payable for all activity, irrespective of whether the provider has met best practice characteristics. The BPT conditional top-up price is payable only if the provider meets the 50% case ascertainment rate.

Providers that do not achieve the criteria will not be eligible for the BPT conditional top-up and will only be able to claim the base price for all activity within the period. There was an intention stated in the 2019/20 and 2020/21 national tariffs to increase the 50% case ascertainment threshold to 80% in the future – that is, 80% of a provider's relevant patient spells would need a corresponding BSR entry in order to be eligible for the BPT top-up payment. However, this change has not yet been made.

Provider performance was calculated and published quarterly for 2019/20. This was done by matching individual records in BSR with corresponding records of patient spells in SUS (Secondary Uses Service). The total number of matched records was divided by the total number of relevant spells in SUS to derive the ascertainment rate.

When the quarterly data for 2019/20 in 2020/21 was refreshed, the overall case ascertainment levels fell. Upon investigation this was found to be due to the way patient consent for data use in the BSR is obtained and recorded.

A patient may give consent for their data to be used in BSR in two ways:

- active consent which is recorded at the time of procedure/admission, or
- consent which is given by interacting with patient questionnaires and the entering of PROMS data at set points after the procedure/admission.

Equally, patient consent may not be given/attained in two ways:

- actively opting out at the time of procedure/admission or

- not further interacting with the patient questionnaires and PROMS data.

It has also been reported that although a patient may have given consent for their data to be used, there is variable recording of this in the correct way in BSR, which shows as patient consent not obtained.

As such, when the data for 2019/20 was refreshed, a number of records which had previously been counted in the ascertainment rate had now defaulted to patient consent not obtained as the patient had not interacted with the service post discharge and the initial patient consent had not been obtained and/or recorded in BSR. This had the effect of slightly reducing the ascertainment rates for providers. While the issue was investigated, the previous reports were removed from the portal.

Given the issues around consent, NHS England and NHS Improvement have decided to change the basis on which the ascertainment rate is calculated. This means that only patients who have actively given consent, recorded correctly in BSR, for their data to be used will be counted in the numerator. All patient spells in SUS will continue to be counted in the denominator.

As this will be very slightly harder for providers to achieve, compared to the previous calculation, the increase in the attainment threshold to 80% has been suspended until a future tariff year. This should also encourage the correct recording of patient consent in BSR.

All provider ascertainment rates from 2019/20 Q1 have been recalculated so that a comparable times series is available for providers and commissioners. NHS England and NHS Improvement do not recommend reopening payments that have already been made based on the previous calculation.

To provide more certainty around reporting timelines, the publication of compliance reports will be standardised. Relevant BSR records will be extracted four weeks after quarter end and matched with relevant SUS post reconciliation data to produce compliance rates. BPT reports will not be updated later in the year – the report for each quarter will be the final report upon which to base payments. The reports will be available around 2 months after the end of the relevant quarter.

Device Surveillance and Industry Engagement

The BSR met with the Association of British Healthcare Technology Industries (ABHI) to discuss possible funding of the BSR in exchange for periodic data sharing but no agreement was achieved.

However, the BSR has been approached by several companies and datasets have been sold to some of these companies for specific implants. The quality of the data has improved due to the introduction of the BPT, making the BSR an attractive data source for companies looking for data to meet Medicines and Device Regulation (MDR) requirements. Any data provided is anonymized and surgeon level data is withheld.

The BSR (via BASS) is collaborating with NEC Software Solutions UK Limited to provide data for ODEP (Orthopaedic Data Evaluation Panel) and Beyond Compliance. This will allow companies to apply to ODEP for ratings for their spinal implants, a process which is well established with hip and knee implants. The BSR is close to finalising a data sharing agreement with NEC Software Solutions UK Limited. This should be signed in early 2022.

Thanks to Amplitude and in particular to Rhiannon Hornett for the data provided in this report.