Non-Arthroplasty Hip Registry

# 11TH ANNUAL REPORT 2026

Smith+Nephew



NTL Biologica

ADVANCING REGENERATIVE MEDICINE



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# CHAIRMAN'S FOREWORD

On behalf of the board, I am pleased to present the 11th Annual Report of the Non-Arthroplasty Hip Registry (NAHR).

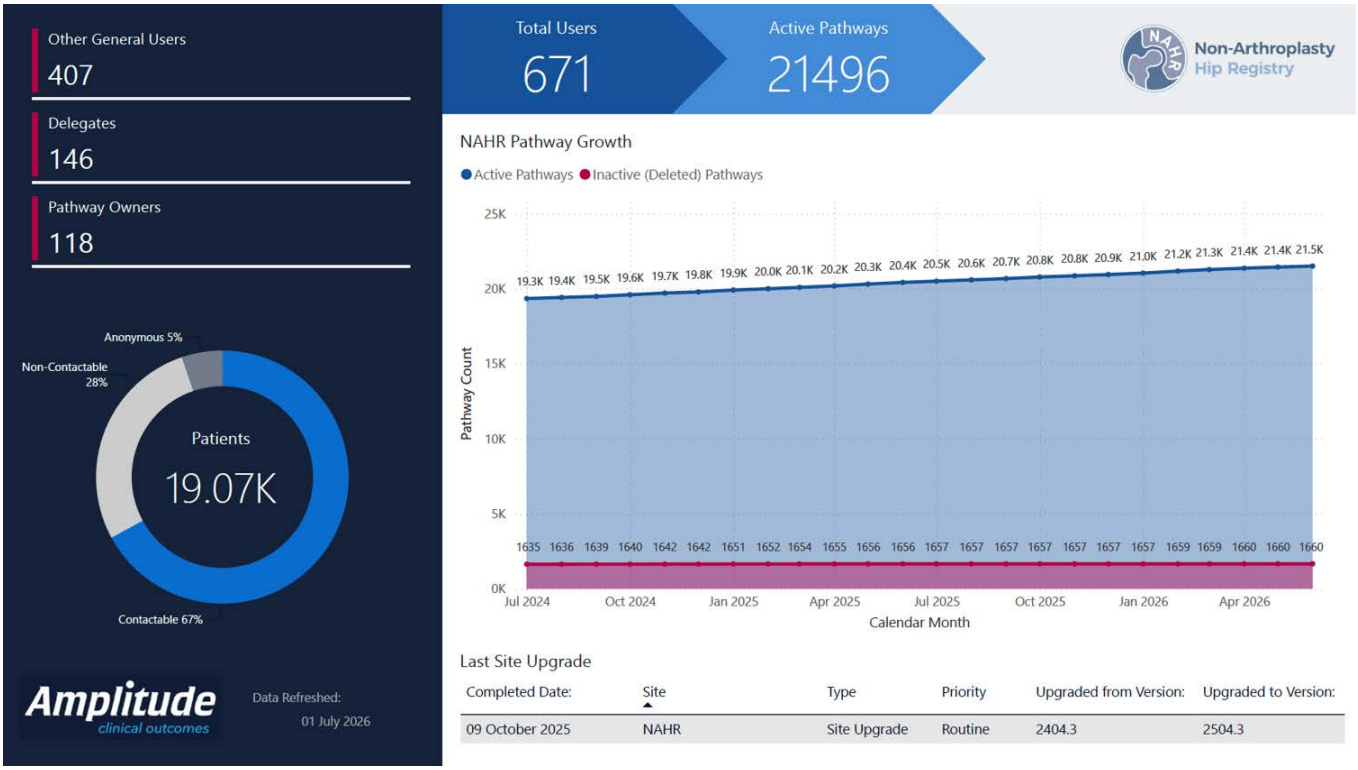
This has been another year of significant progress for the Registry. Since its establishment, the NAHR has continued to grow both in the breadth of procedures captured and in the depth of data submitted by participating units.

This year we have reached 21,496 active pathways with 671 total users. This is a testament to the continued commitment of surgeons, clinical teams, and data administrators across the country.

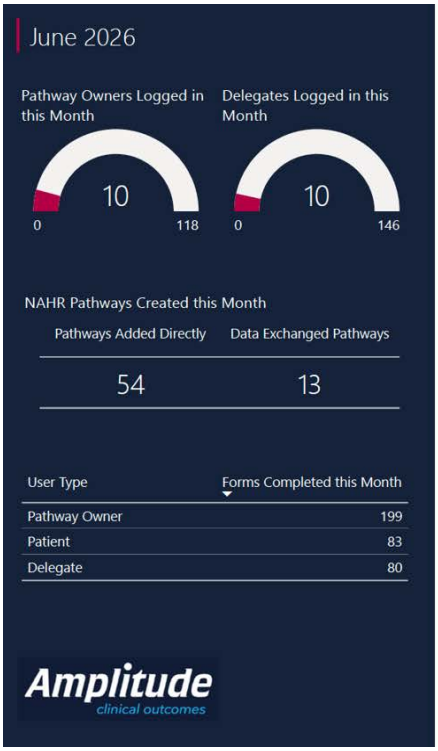


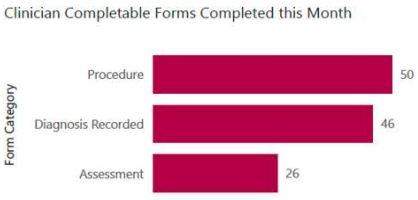
**Tony Andrade**

Chairman, Non-Arthroplasty Hip Registry



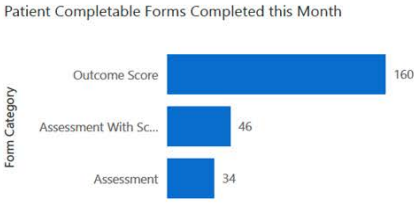
I share with you now, some of the information in the monthly report provided to us by Amplitude which illustrates the activity within the registry.

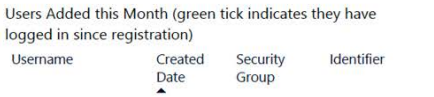












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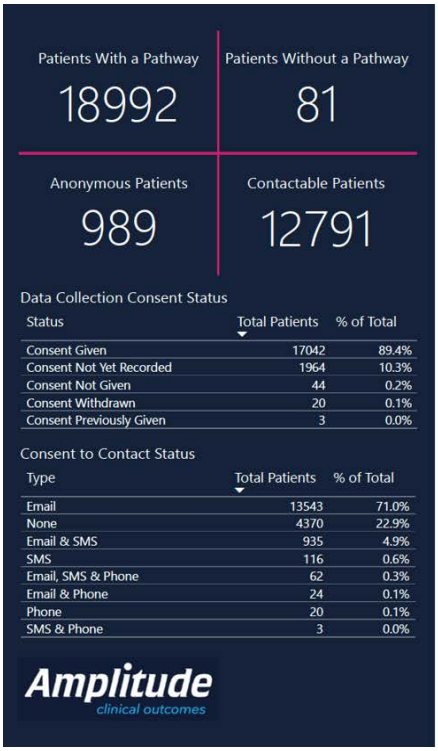


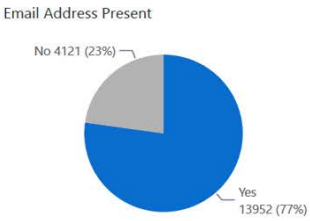


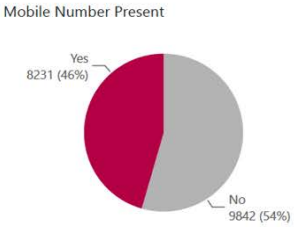


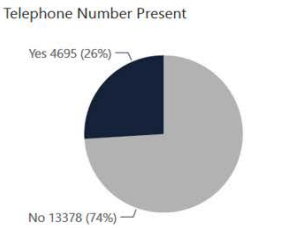


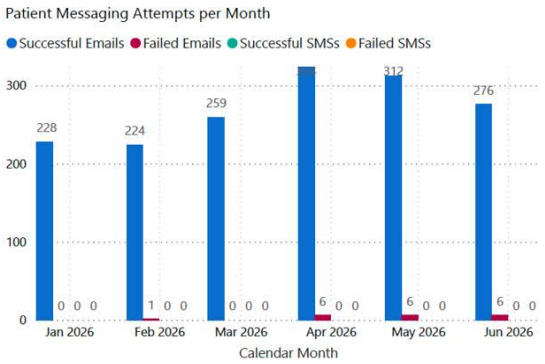


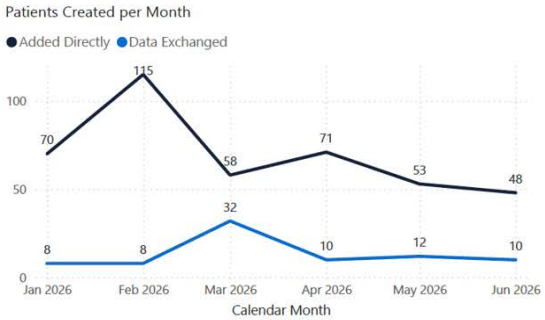


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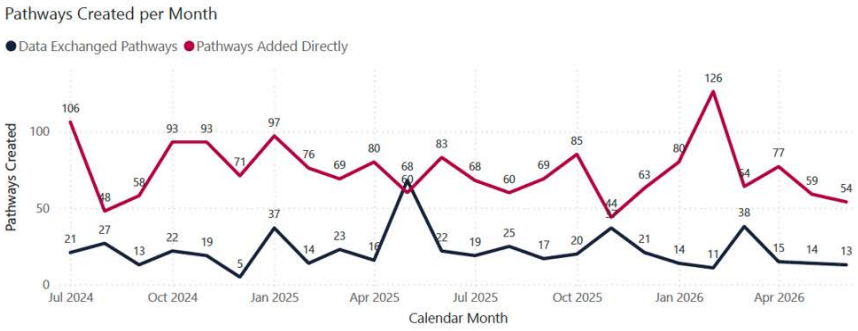
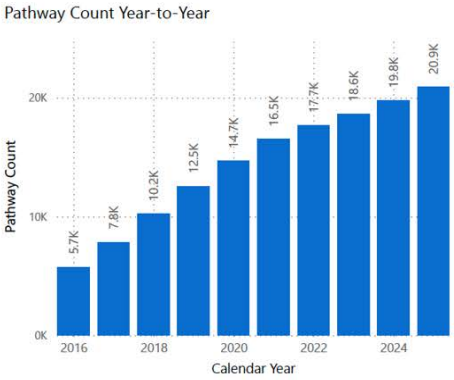



Active Pathway Count Data

| PathwayType | Hip (Non Arthroplasty) Pathway (NAHR) | |
|---|---|---|
| Calendar Month | Pathway Count | % Increase |
| July 2025 | 20489 | 0.4% |
| August 2025 | 20574 | 0.4% |
| September 2025 | 20660 | 0.4% |
| October 2025 | 20765 | 0.5% |
| November 2025 | 20846 | 0.4% |
| December 2025 | 20930 | 0.4% |
| January 2026 | 21024 | 0.4% |
| February 2026 | 21160 | 0.6% |
| March 2026 | 21262 | 0.5% |
| April 2026 | 21353 | 0.4% |
| May 2026 | 21426 | 0.3% |
| June 2026 | 21493 | 0.3% |




In 2025, 33 surgeons contributed to the NAHR with a median of 16 pathways, with 35 hospitals contributing to the Registry. This year's report continues to show meaningful and sustained improvements following both arthroscopic and open procedures, which provides ongoing evidence to support these procedures.

The value of a registry lies not simply in the volume of data it collects, but in what that data allows us to learn and, ultimately, act upon. The past year has been a particularly productive one for research using the NAHR dataset, with multiple podium presentations not only at the British Hip Society meeting, but also at numerous international meetings. There have been four peer-reviewed publications extending our understanding of outcomes after hip preservation surgery.

Yoshitani et al. used the Registry to map the trajectory of patient-reported outcomes over the two years following hip preservation surgery, providing valuable evidence on when and how patients can expect to see improvement (1). Building on this outcomes theme, Ekhtiari et al. examined the floor and ceiling effects of the international Hip Outcome Tool-12 (iHOT-12) in this population, work that has direct implications for how we interpret PROMs data and design future studies (3). van Duren et al. explored the relationship between psychological wellbeing and surgical outcome, showing that patients with higher anxiety and depression scores were less likely to achieve a meaningful improvement in PROMs after hip arthroscopy for femoroacetabular impingement — a finding with real relevance for patient selection and pre-operative counselling (2). Finally, Holleyman et al. used the Registry to shed light on an often under-reported outcome, patient-reported sexual function following periacetabular osteotomy, broadening the range of outcomes by which we judge the success of hip preservation surgery (4).

These findings matter: they inform clinical decision-making, support consent conversations with patients, and help commissioners and providers understand the true impact of non-arthroplasty hip preservation surgery.

They are also a powerful illustration of what a well-maintained national registry makes possible — research that no single centre could produce alone.

This year has also seen the updating of the Minimum Data Set (MDS) to the MDS 4.0, which is due to be launched at the British Orthopaedic Association meeting next month. Please look out for this. We are immensely grateful to Marcus Bankes for his superhuman efforts to get this update completed.

Another very important development was the launch of the QR code for patient self-registration.



I want to acknowledge the ongoing challenge of ensuring complete and accurate data submission. As the Medical Devices Outcomes Registry continues to gather momentum we may well see a day when data submission to the NAHR will become mandatory. The Orthopaedic Trauma Registry and the National Ligament Registry, are the first Orthopaedic registries to potentially benefit from this.

Registries are only as powerful as the data entered into them, and I would like to thank every surgeon, coordinator, and administrator who has prioritised this work amid competing clinical demands. I would also like to thank the NAHR board, our data analysts, and our partner organisations for their continued support and expertise.

Looking ahead, our priorities remain to increase surgeon engagement and patient data completion. We on the board are committed to ensuring the Registry continues to serve patients, clinicians, and the wider healthcare system as a robust, transparent, and clinically meaningful resource.

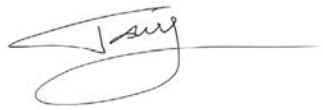
I commend this report to you and thank Richard Holleyman and Jonathan Hutt who have been responsible for its production.

I would like to thank Smith and Nephew who have supported the registry from inception and continue to do so.  I would also like to thank NTL Biologica who have renewed their support of the registry.

We look forward to welcoming Arthrex as they return as sponsors for the next year.

As this is my last year as Chair of the NAHR, I would like to extend my personal thanks to my colleagues on the NAHR board, for their complete dedication and willingness to join numerous Zoom calls at relatively short notice to tirelessly work on the evolution of the Registry. I would also like to extend my personal thanks to the British Hip Society Executive board who remain hugely supportive of the Registry.

Lastly, and most importantly, on behalf of the NAHR board, I would once more like to thank all patients and surgeons who, have in the past, and will in the future contribute to the registry. Your commitment to share your data is what fuels the NAHR's success, and we welcome any feedback you might have on how we can shape it for the future.



Tony Andrade
**Chairman, Non-Arthroplasty Hip Registry**

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1. Yoshitani J, Ekhtiari S, Malviya A, Khanduja V. The trajectory of patient-reported outcomes after hip preservation surgery: A National Registry Study. Knee Surg Sports Traumatol Arthrosc. 2025 Nov;33(11):4002-4011. doi: 10.1002/ksa.12771. PMID: 40827496.

2. van Duren BH, Pursun Y, Andrade AJ, Bankes MJK, Khanduja V, Malviya A. Patients With Increased Anxiety and Depression Scores Are at Greater Risk of Not Achieving a Meaningful Improvement in Patient-Reported Outcomes After Hip Arthroscopy for Femoroacetabular Impingement Syndrome. Arthroscopy. 2026 Feb;42(2):455-464. doi: 10.1002/arj.70014. PMID: 41877428.

3. Ekhtiari S, Yoshitani J, Green J, Malviya A, Khanduja V. Floor and ceiling effects of the international hip outcome tool-12 in patients undergoing hip preservation surgery: A national registry study. Int Orthop. 2026 Apr;50(4):777-786. doi: 10.1007/s00264-026-06766-7. PMID: 41840038.

4. Holleyman RJ, Smith C, Baig K, Bankes M, Witt J, Judge A, Khanduja V, Malviya A. Change in Early Patient-Reported Sexual Function After Periacetabular Osteotomy: A Study Utilizing the UK Non-Arthroplasty Hip Registry. Orthop J Sports Med. 2025 Jun 25;13(6):23259671251341475. doi: 10.1177/23259671251341475. PMID: 40575797.

# EXECUTIVE SUMMARY

**THE REGISTRY CONTINUES TO PROVIDE A UNIQUE NATIONAL DATASET ON HIP PRESERVATION SURGERY, WITH A TOTAL OF 21,624 PATIENT PATHWAYS RECORDED TO DATE, OF WHICH 15,412 CONTAIN COMPLETE OPERATIVE DATA AND ARE INCLUDED IN THE MORE DETAILED ANALYSIS IN THIS REPORT.**

During 2025, 867 procedures were recorded in the registry. Procedural volumes now appear to have stabilised following the decline observed during and after the COVID-19 pandemic, although activity remains below levels seen prior to 2019.

The data consistently demonstrate meaningful improvements in patient-reported outcomes following both open and arthroscopic hip preservation surgery. These findings reinforce the role of such interventions in improving symptoms and quality of life in appropriately selected patients.

Surgeon participation has declined from a peak of over 60 contributing surgeons prior to the pandemic to 33 in 2025. However, this reduction now appears to have stabilised over the past two years and may reflect the concentration of cases into more specialist services. Despite this, incomplete engagement with the registry remains a key limitation that requires continual improvement.

Arthroscopic surgery remains the predominant modality of treatment although there has been a notable shift in the balance between arthroscopic and open procedures over time. In 2019, approximately 81% of procedures were arthroscopic compared to 74% in 2025, with a corresponding increase in open procedures from around 15% to 25%. This change appears to reflect a shift in surgical practice rather than an absolute decline in arthroscopic surgery alone.

While baseline data capture is strong, data completeness remains a challenge. Follow-up rates decline substantially over time, with approximately one-third of eligible patients returning outcome data at six months and fewer at longer-term follow-up. This limits both the ability to draw robust conclusions regarding longer-term outcomes and the potential for high-quality research using registry data.

Looking ahead, the priorities for the NAHR remain clear: to improve surgeon engagement and enhance data completeness. Addressing these areas will allow us to fully realise the potential of the registry for benchmarking, research, and improving patient care.

All the relevant information is available on the NAHR website www.nahr.co.uk.

# ABOUT THE NAHR

**THE NON-ARTHROPLASTY HIP REGISTRY IS A NATIONAL UK REGISTRY ESTABLISHED TO COLLECT AND ANALYSE OUTCOMES OF HIP PRESERVATION SURGERY.**

**Since its launch in 2012 under the auspices of the British Hip Society it has grown to become the largest registry of its kind, capturing data on a wide range of non-arthroplasty hip procedures. The dataset has been continually expanded to further refine and capture relevant datapoints to keep pace with the evolution of modern hip preservation surgery.**

## AIM OF THE REGISTRY

The NAHR aims to improve patient outcomes by providing robust, real-world data on hip preservation surgery. By collecting longitudinal data on patient characteristics, surgical techniques, and outcomes, the registry enables:

- An overview of current hip preservation practice in the UK
- Evaluation of the effectiveness of different procedures
- Identification of factors associated with improved outcomes
- Benchmarking of individual and national performance
- Support for research, audit, and service development

Ultimately, the registry data can support both clinicians and patients in making better-informed treatment decisions.

## HOW THE REGISTRY WORKS

A patient pathway is created when a case is entered into the NAHR for a non-arthroplasty hip procedure. Data collection includes:

- Baseline data: patient demographics, diagnosis, and pre-operative outcome scores
- Operative data: details of surgical techniques and procedures performed
- Follow-up data: patient-reported outcome measures (PROMs), including iHOT-12 and EQ-5D, collected at defined intervals post-operatively

Ultimately, the registry data can support both clinicians and patients in making better-informed Where possible, unique patient identifiers such as NHS numbers enable linkage across procedures and with other datasets, supporting longitudinal tracking of patient outcomes.

Data entry is currently voluntary and relies on surgeon participation. Patients are invited to complete follow-up outcome measures electronically at 6, 12 and 24 months.

# NAHR ANNUAL REPORT



# REGISTRY ACTIVITY

As in previous reports, only pathways with complete operative data are included in the analysis to ensure consistency and reliability. Of the 21,624 patient pathways recorded on the registry to date, 15,412 meet this criterion.

Overall pathway volume per year increased steadily to a peak in 2019, followed by a decline during the COVID-19 pandemic (Fig 1). Activity has since stabilised, with 867 procedures recorded in 2025 and there could be a number of potential reasons for this variation.

One factor may have been a reduction in the volume of cases due to changes in patient selection criteria as our understanding of the value of appropriate hip preservation interventions has evolved. This could also reflect a reduction in the number of surgeons performing these procedures, but the lack of any notable upswing since the pandemic does also hint at a slow recovery of services and it remains to be seen whether the current plateau will continue in coming years.

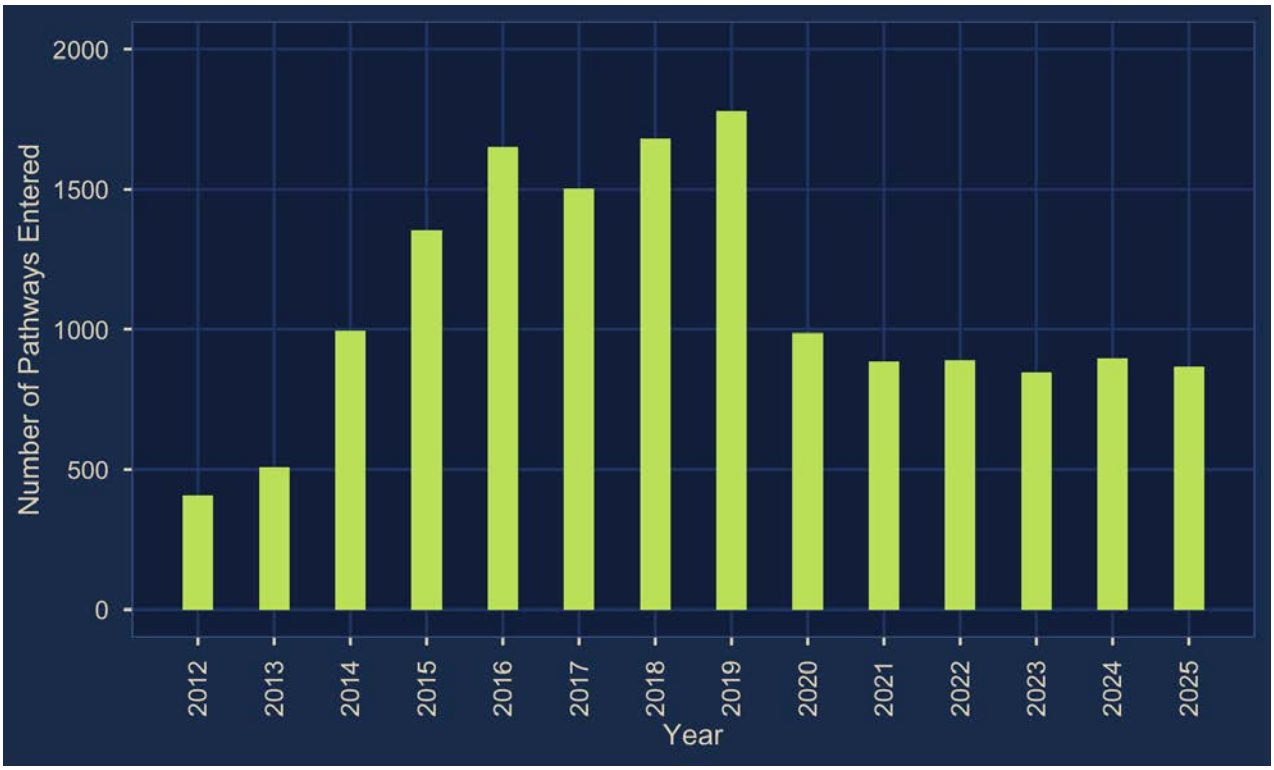


Fig 1: Procedural volume per year

# SURGEON DATA

The number of surgeons contributing to the NAHR has been decreasing after a peak in 2018 although this has also stabilized over recent years. This suggests that following a growth in interest in hip preservation techniques, cases may now be concentrating in more specialist practices (Fig 2).

Another explanation for both this and the fall in overall pathway numbers could be reduced surgeon engagement with the registry.

This remains a key limitation and concern for NAHR data - we would continue to encourage our colleagues in the field to contribute their cases to the registry to further bolster its usefulness and validity.

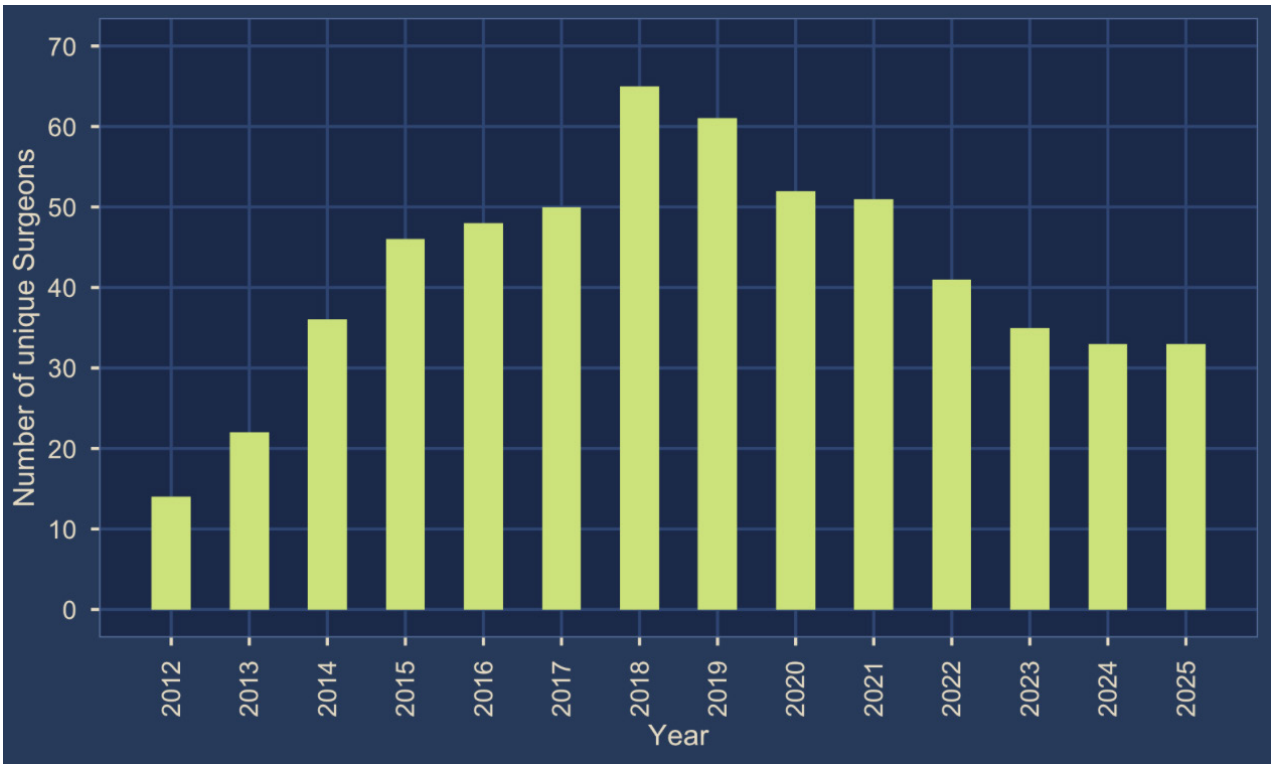



Fig 2: Number of surgeons contributing to the registry per year

# SURGEON CONTRIBUTION NUMBERS

The number of operative pathways per surgeon has also shown a recovery in recent years but there remains a decline from 2019 and earlier.

There is a considerable skew in the distribution of case numbers however, with a small number of surgeons contributing a larger proportion of the overall pathways (Fig 3).

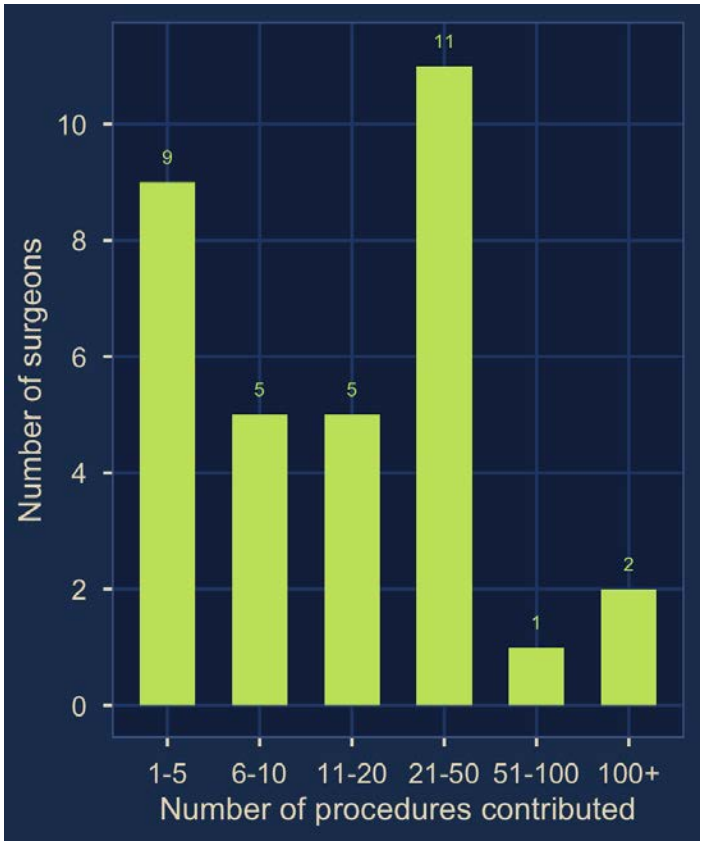



Fig 3: Case contribution numbers per surgeon

# GEOGRAPHICAL VARIATION

It is worth remembering that due to the voluntary nature of the reporting, the cases in the registry do not necessarily reflect real world practice volumes for every surgeon and may also result from challenges in administration and support which will vary geographically.

35 hospitals contributed data to the NAHR in 2025. Data submission is distributed across multiple centres within the UK, with variation between regions and concentration of activity in a smaller number of high-volume trusts.

This data is an important snapshot of UK practice and is important in evaluating the distribution of hip preservation services across the NHS to ensure equity of access and treatment for patients across the UK. (Fig 4).

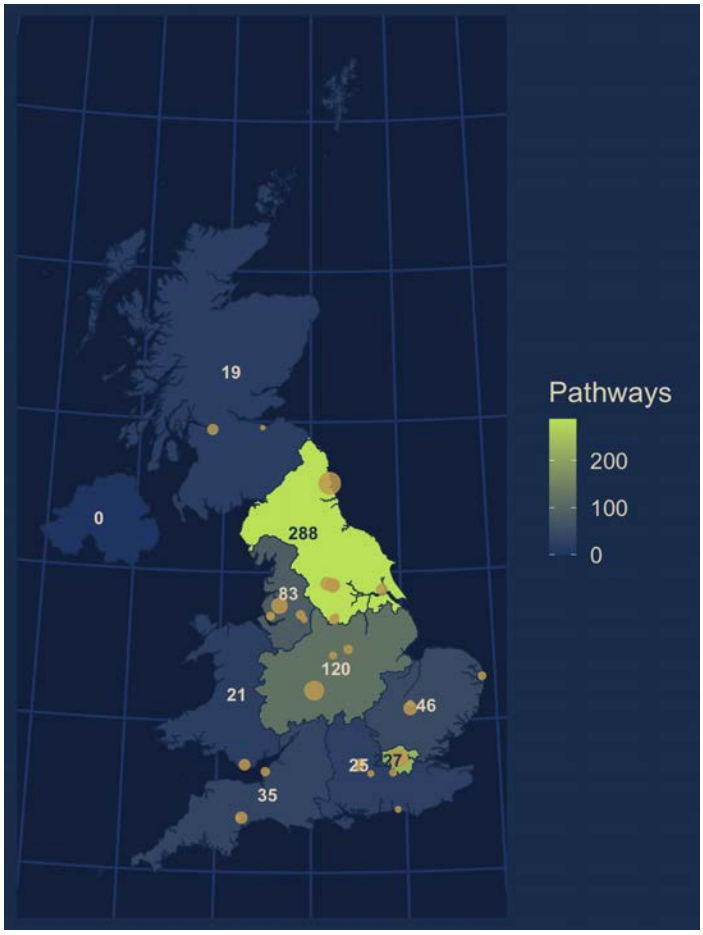



Fig 4: UK map of case distribution in 2025 across 9 NHS

# DATA OVERVIEW

## PROCEDURES RECORDED

Arthroscopic surgery remains the predominant modality of surgical intervention, although there has been a gradual increase in the proportion of open procedures over time (Fig 5).

This seems to be an evolution of surgical practice rather than simply a reduction in numbers of arthroscopic procedures and likely reflects an increasing understandings of the underlying biomechanics of non-arthritic hip pain which guide surgeons towards the most appropriate interventions.




*Fig 5: Distribution of arthroscopic vs open procedures*

As would be expected, the bulk of the procedures are performed in younger patients, with a continuing trend of female patients accounting for the majority of pathways.

Although arthroscopic procedures dominate overall, there are a greater proportion of open procedures performed in the female population, which is most likely due to the higher incidence of hip dysplasia in women (Fig 6).

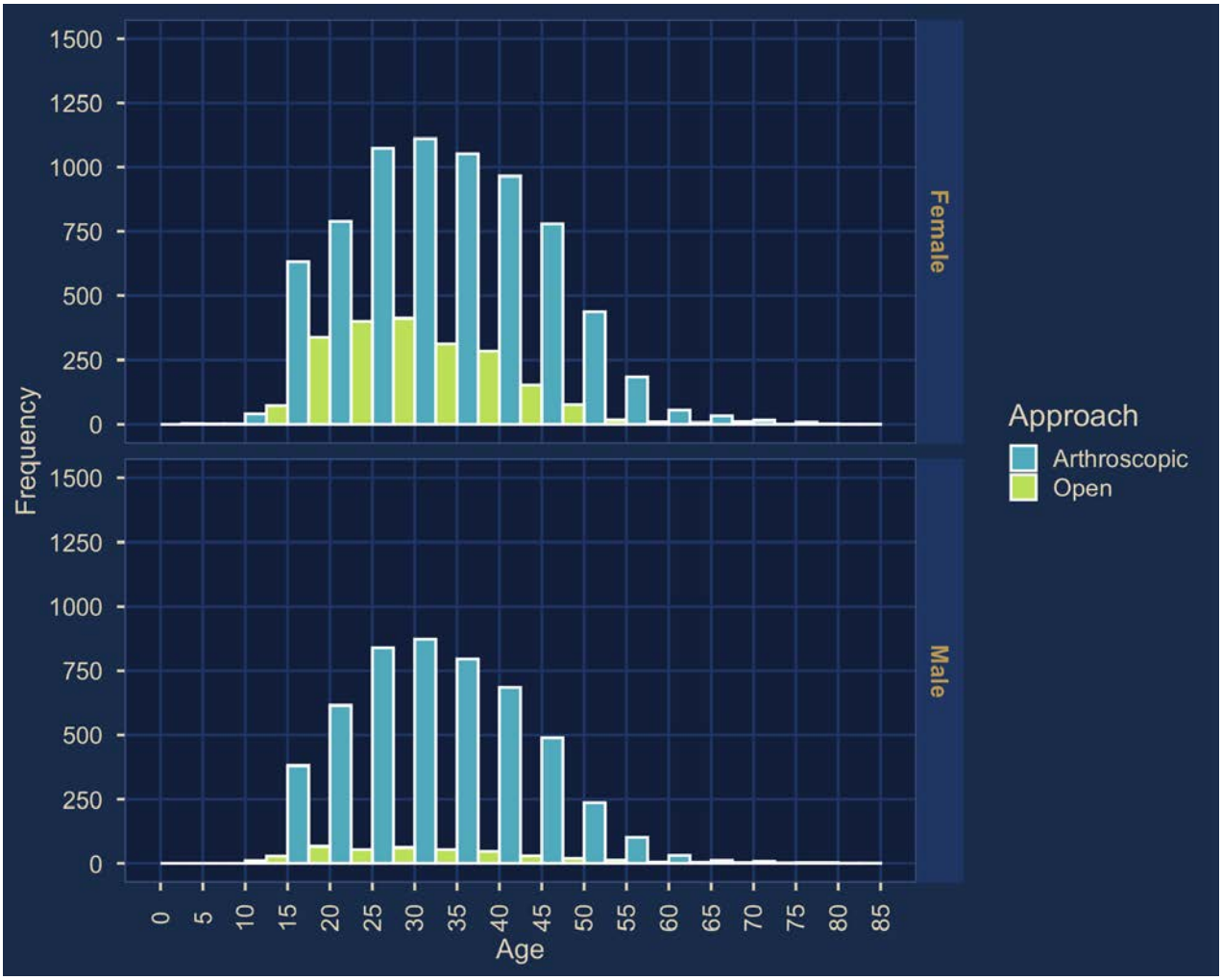



*Fig 6: Surgical approach grouped for sex and age*

# FUNDING DATA

The majority of procedures are NHS-funded, accounting for approximately two-thirds of cases in 2025, with a slight relative increase compared to earlier years.

However, the ratios have not completely returned to pre-pandemic levels, suggesting there may still be incomplete recovery of surgical provision for hip preservation in the NHS along with some NHS work still being undertaken in the independent sector (Fig 7).

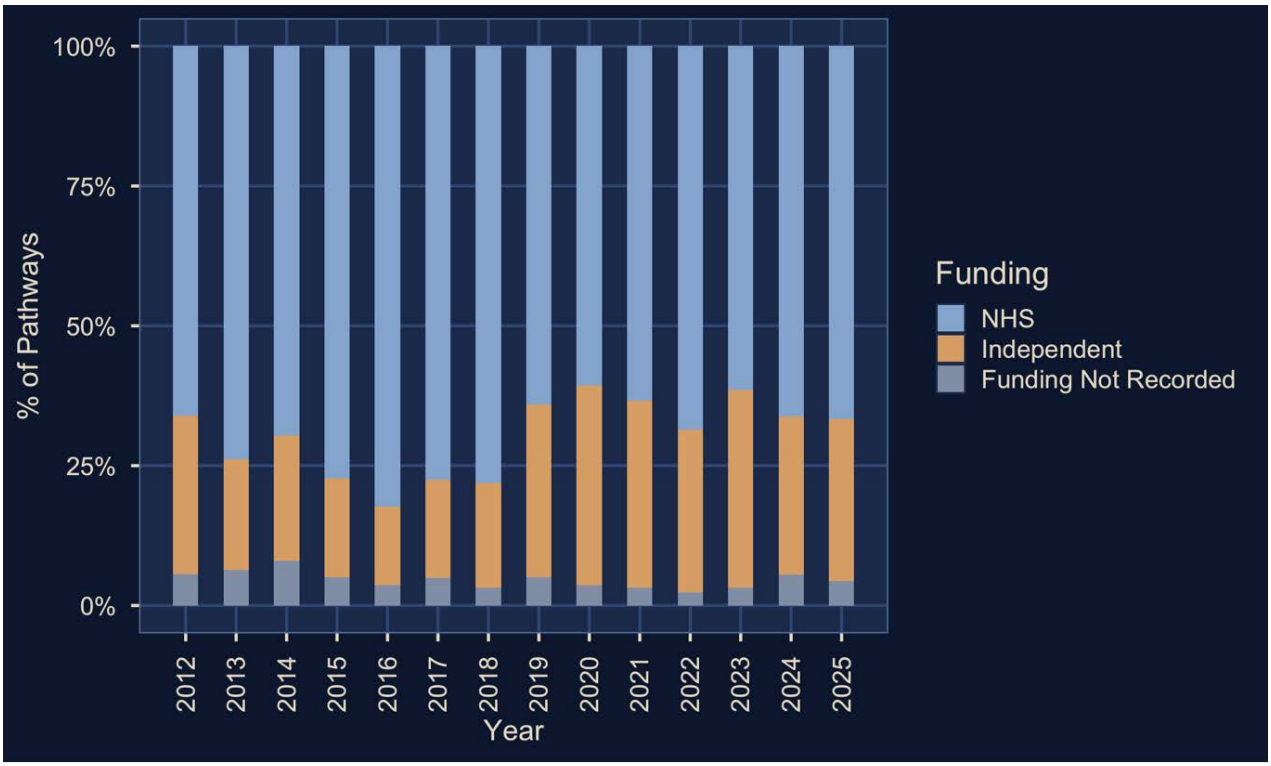



Fig 7: Funding routes for surgery by year

# BODY MASS INDEX (BMI) DATA

The distribution of BMI has remained broadly stable over time, with the majority of patients falling within the BMI <30 category (Fig 8).

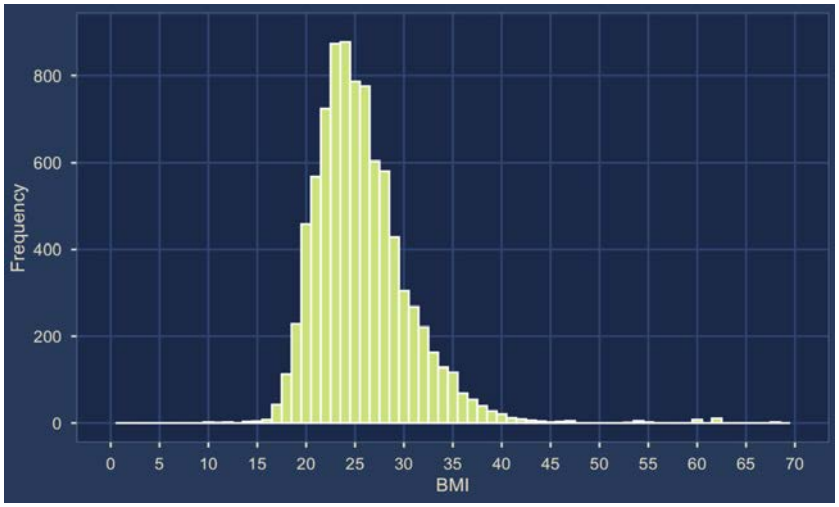



Fig 8: BMI distribution for 2025 (BMI <10 and >70 were considered inaccurate and data points removed)

Submission compliance with BMI data remains at under 80% as it has been in previous reports (Fig 9).




Fig 9: BMI compliance per year

# DATA QUALITY AND PROMS

Patient consent levels remain consistently high (Fig 10), but there remain ongoing challenges with collecting follow up data into the longer term.

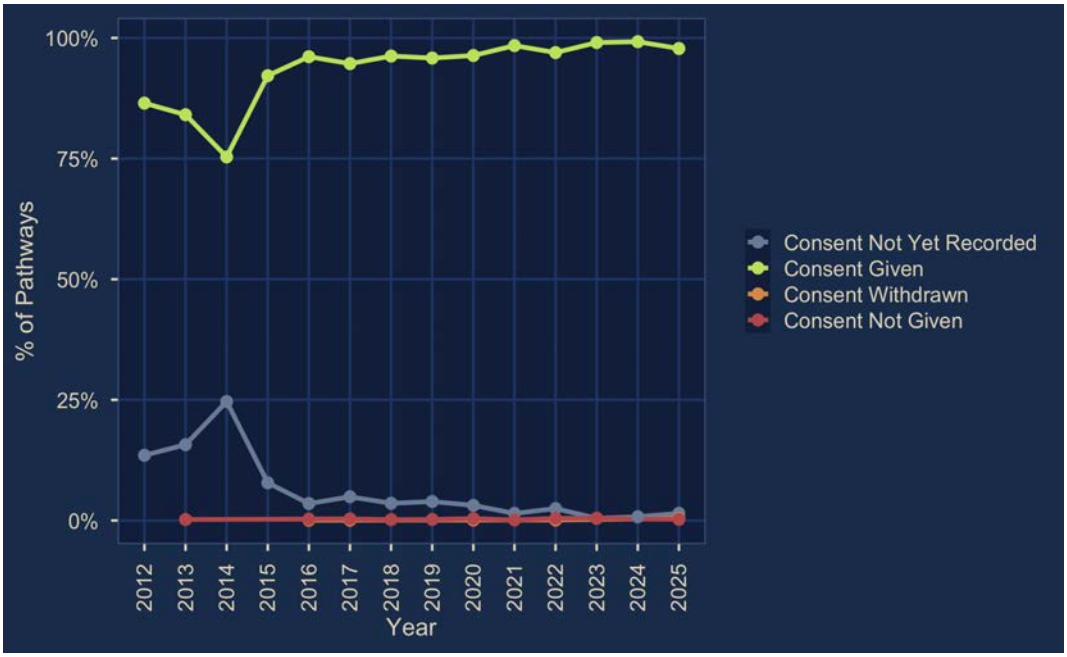



Fig 10: Patient consent for data collection

PROMS are currently sent electronically to patients automatically at 6, 12 and 24 months post operatively.

There remains a significant proportion of patients entered without follow-up email contact details, which limits the ability of the registry to capture outcomes and link to additional data sources.

Similarly, the percentage of pathways with a recorded NHS number continues to decline, affecting the ability to perform longitudinal linking of the data. We encourage clinicians to submit this data where possible – advice on how to obtain an NHS number for private patients is available on the NAHR website (Fig 11).

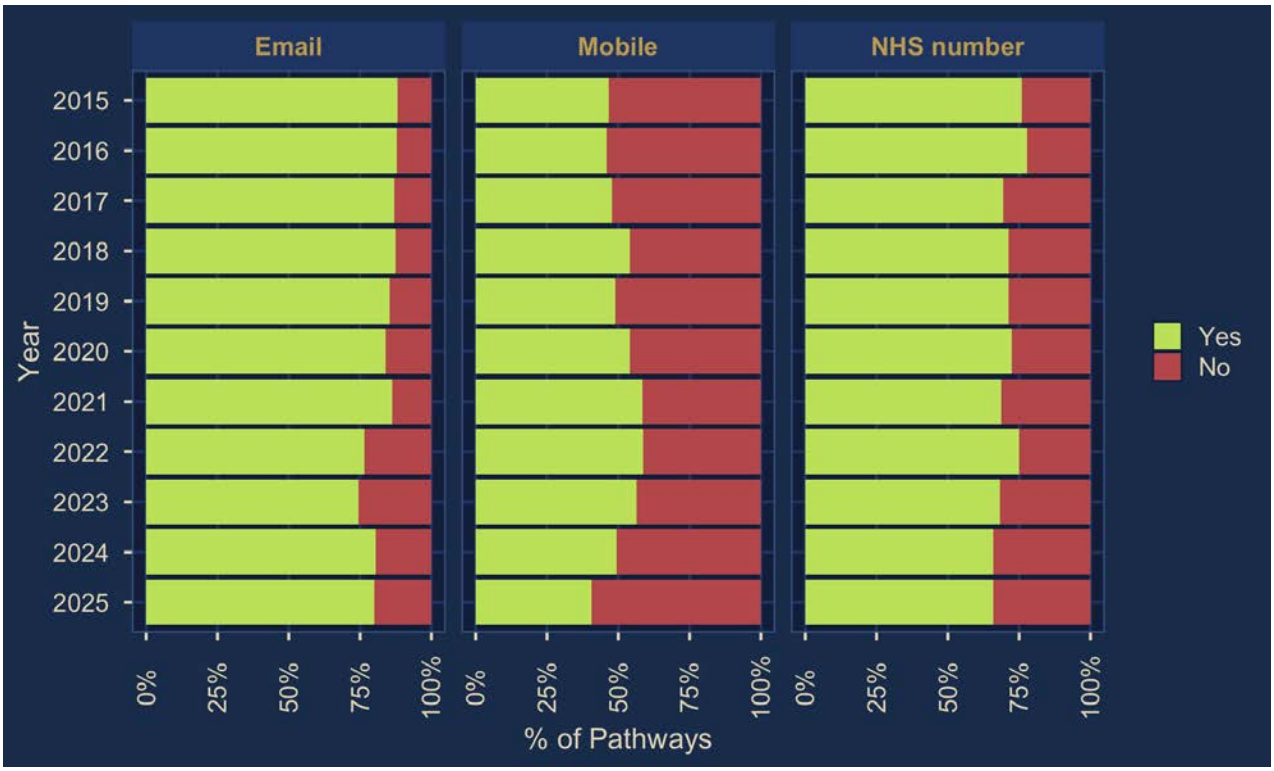



Fig 11: Compliance with contact and linkage data per year

The NAHR offers surgeons the opportunity to use a variety of patient recorded outcome measures and other hip scores for outcome assessment.

Only the EQ-5D and iHOT-12 are routinely collected in all cases. Whilst completion of PROMs at baseline is high, it declines substantially at follow-up time points.

This seems to represent a difficulty in longitudinal follow-up engagement and this, rather than cohort size, presents the most likely source of bias and inaccuracy in the evaluation of longer term follow-up from the registry data (Fig 12).

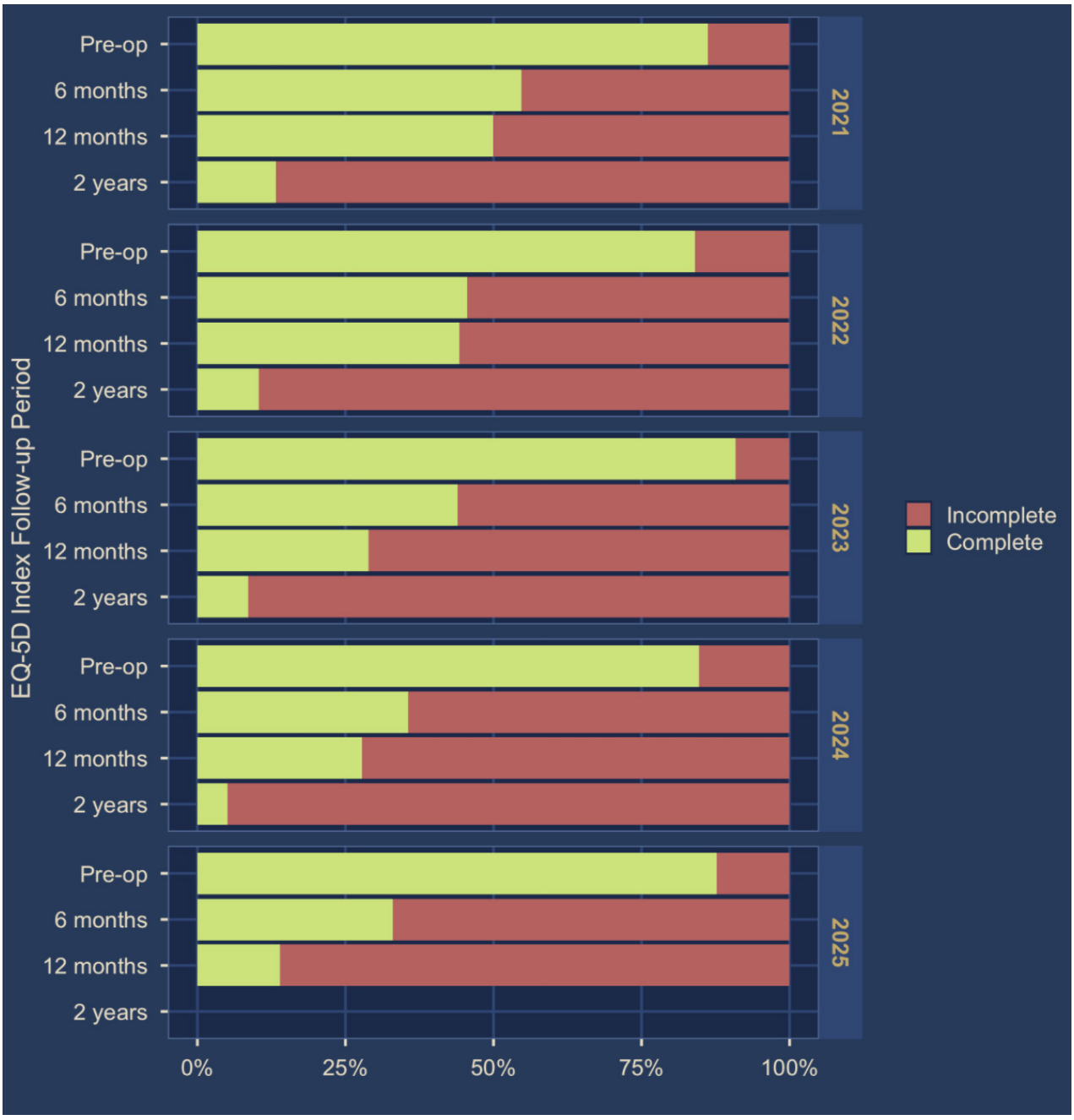



Fig 12: Compliance with IHot and Eq-5D scores

# SURGICAL PRACTICE

Surgical practice within the NAHR encompasses both arthroscopic and open hip preservation procedures and we will consider the variations in both of these groups separately.

## ARTHROSCOPIC PROCEDURES

There is considerable variation in the way arthroscopy is performed and what procedures are undertaken. The NAHR provides an insight into how these techniques have been evolving over time and the extent of adoption amongst hip preservation surgeons.

Capsular management techniques have been reported in the dataset since 2022. Interportal capsulotomy and portal widening techniques are used in the vast majority of procedures in the NAHR, with more extensive techniques less prevalent in UK practice (Fig 14).

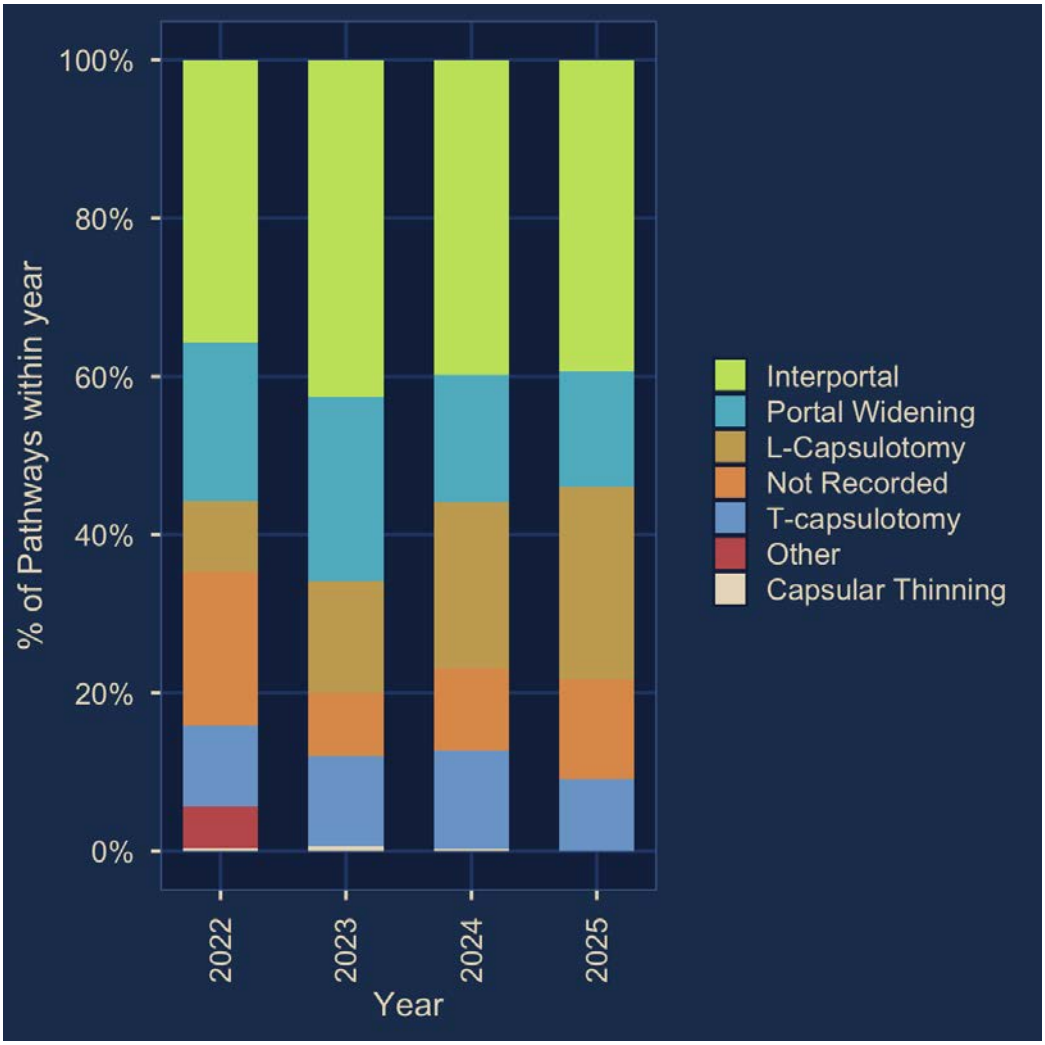



Fig 14: Overall distribution of capsulotomy methods per year

# ARTHROSCOPIC ACETABULAR PROCEDURES

On the acetabular side, labral procedures are the most common intervention recorded. Bone resection, mainly of the acetabular rim is performed in 20% of cases overall (Fig 15).

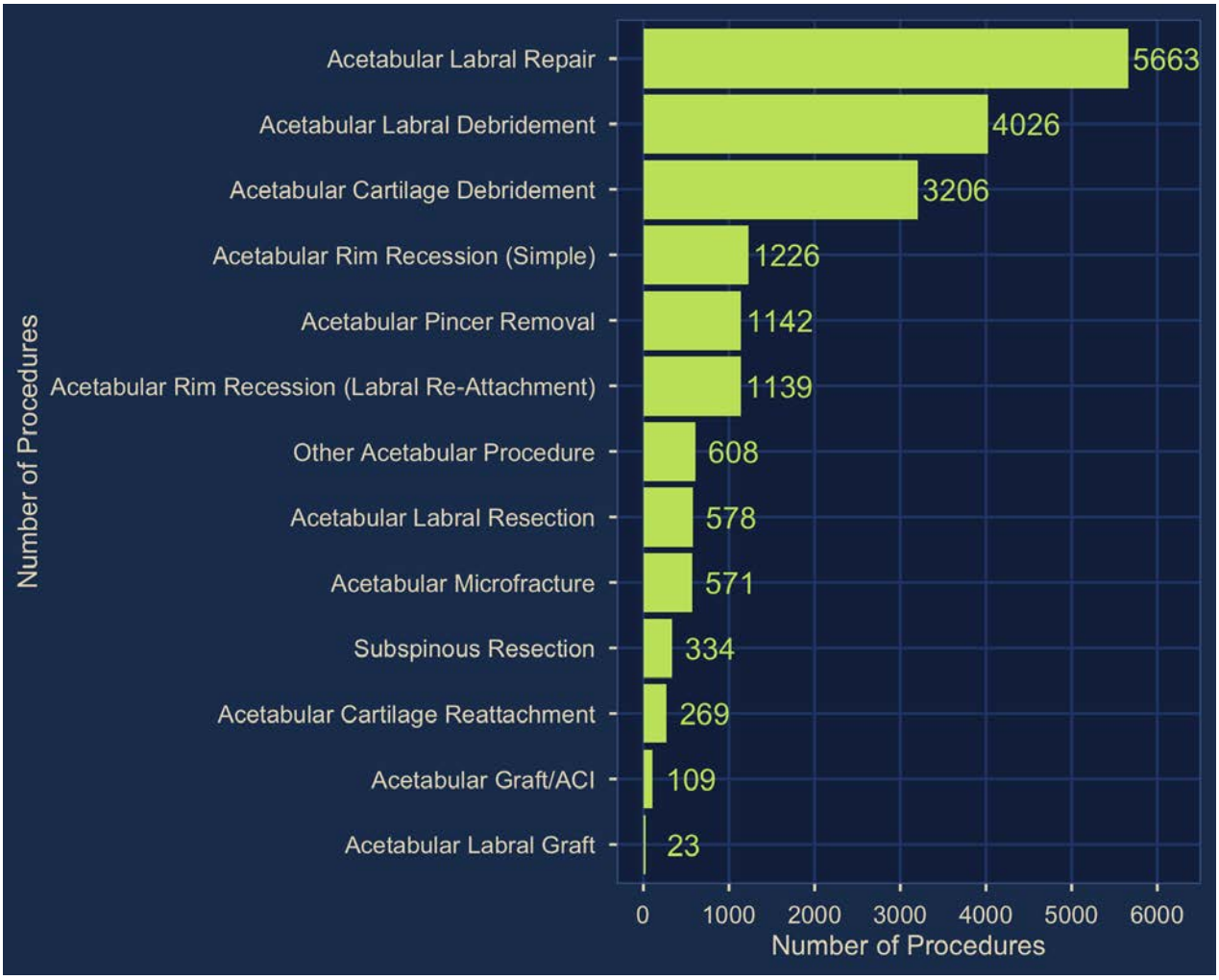



Fig 15: Arthroscopic acetabular procedures

Acetabular cartilage procedures are recorded in 22% of cases, but in the majority, intervention is limited to debridement, with restorative cartilage techniques used only in a minority of cases (Fig 16).

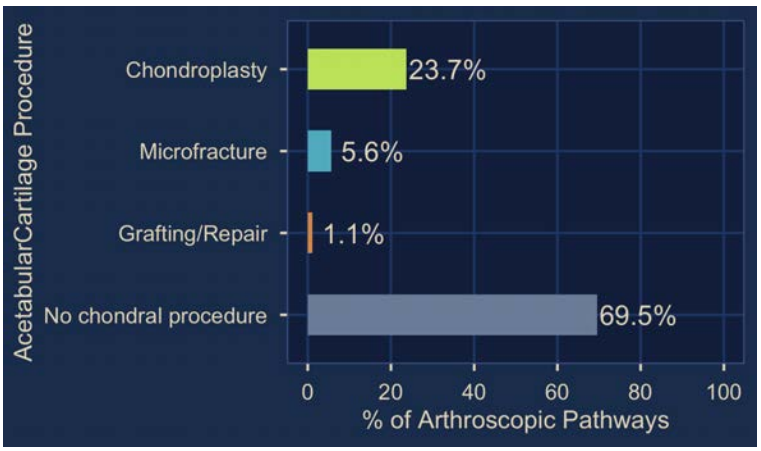



Fig 16: Acetabular cartilage procedures

Notably, the treatment of labral pathology since the inception of the NAHR has seen a significant shift from labral debridement to labral repair. Resection is rare, and labral grafting remains a very low volume procedure in the UK with only 23 recorded in the registry in total (Fig 17).




Fig 17: Comparison of labral debridement and repair over time

On the femoral side, bone removal is by far the most commonly performed procedure (Fig 18). Cam removal predominates, and is performed in 90% of arthroscopic procedures, with other bony corrections being less common.

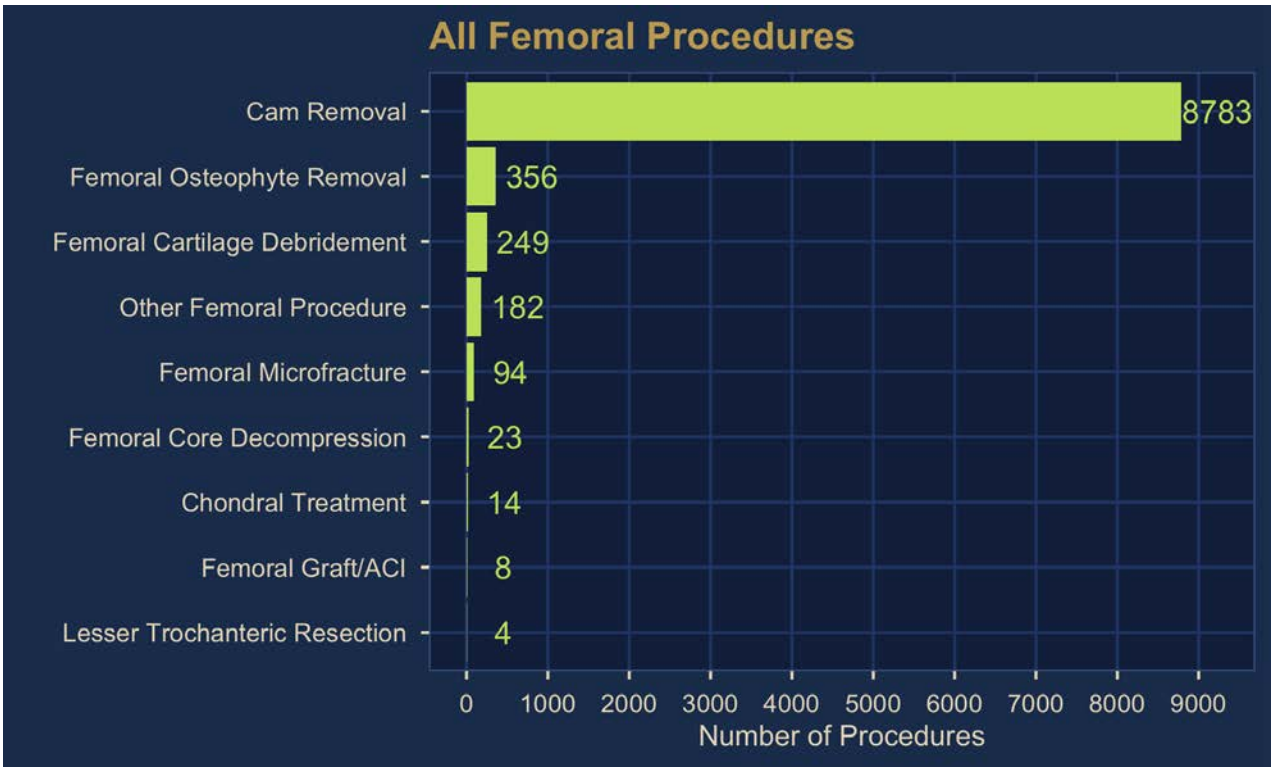



Fig 18: Overall distribution of femoral procedures

Cartilage procedures on the femoral side are relatively infrequently performed, in under 5% of cases overall. When it is recorded, debridement remains the most common treatment with restorative techniques only used in a small proportion of cases (Fig 19).

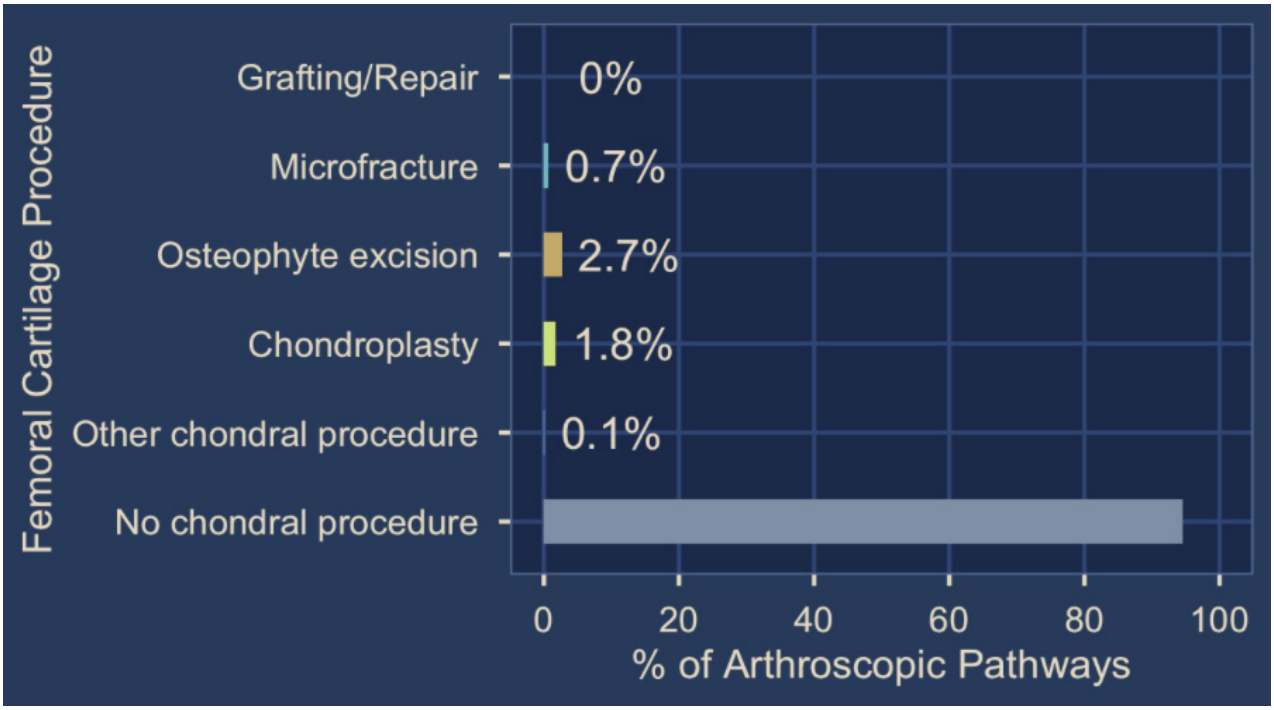


Fig 19: Distribution of cartilage procedures for the femur

# OPEN PROCEDURES

The majority of open procedures consist of a periacetabular osteotomy (PAO) performed in isolation, with a smaller number performed with additional femoral osteotomy. There is a smaller proportion of isolated femoral osteotomies (Fig 20).

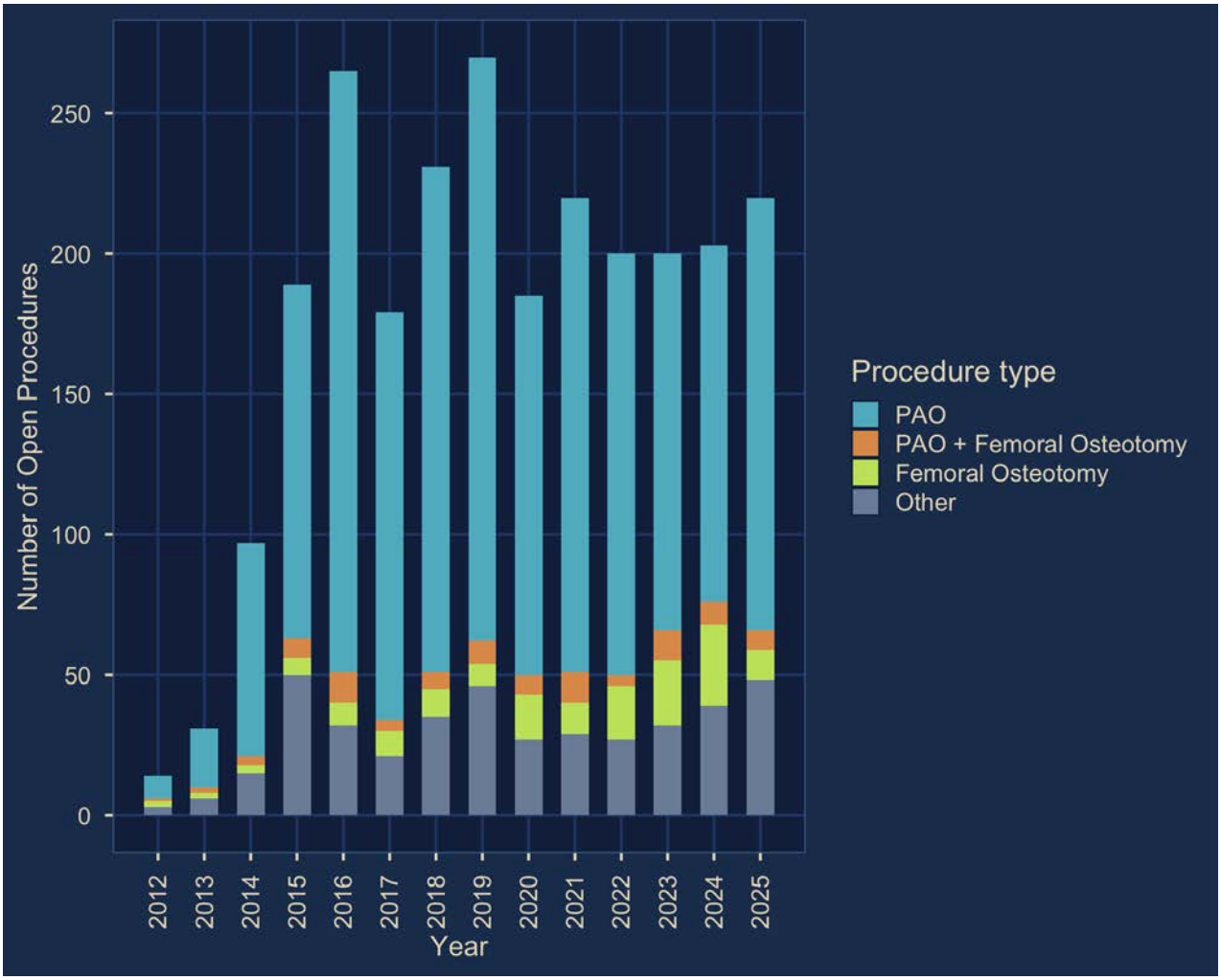



Fig 20: Distribution of open procedures 2025 on a per year

In common with all procedures, there was a small dip in overall PAO numbers following the COVID-19 pandemic, with some recovery and stabilisation in the following years (Fig 21).

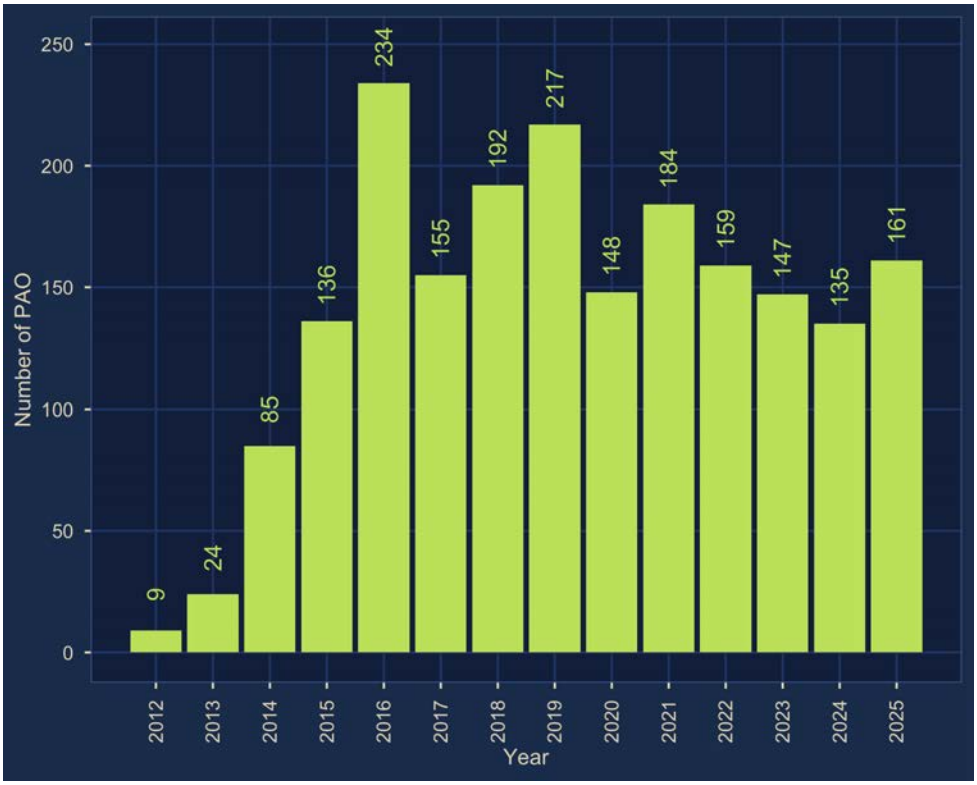



Fig 21: PAO procedures recorded per year

Most of the PAO surgery is being performed for dysplasia, with smaller numbers being for FAI (Fig 22).

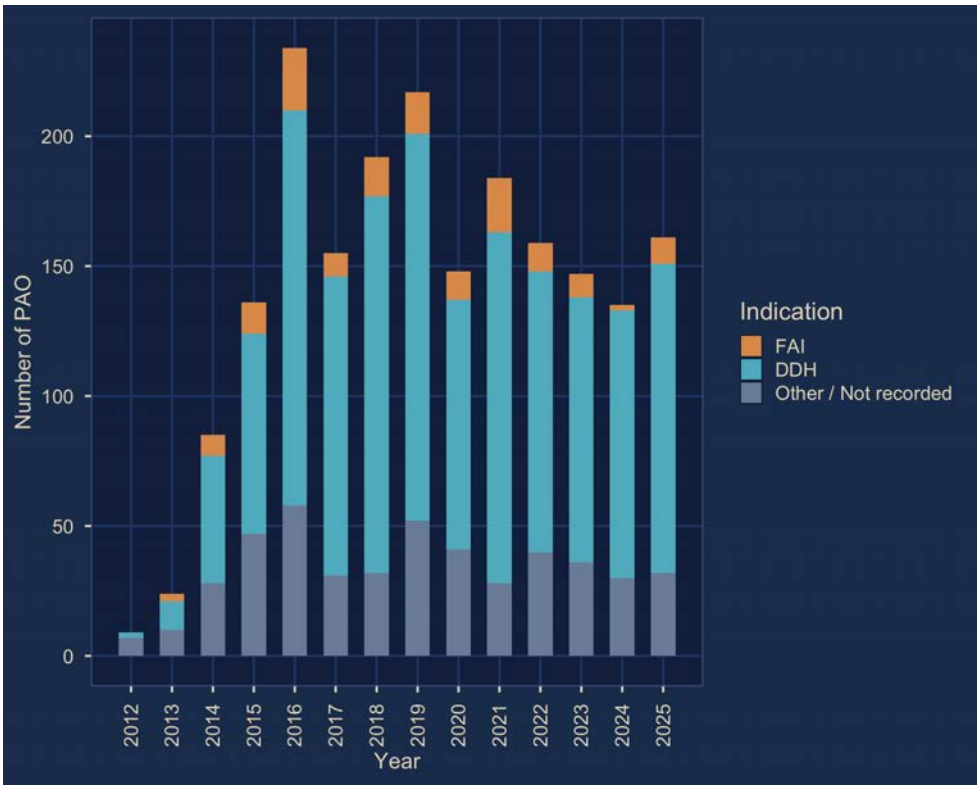



Fig 22: Principal Indication for PAO surgery

A smaller proportion of other primary or additional procedures are performed, as detailed in Fig 23. These remain a small proportion of the overall recorded cases.

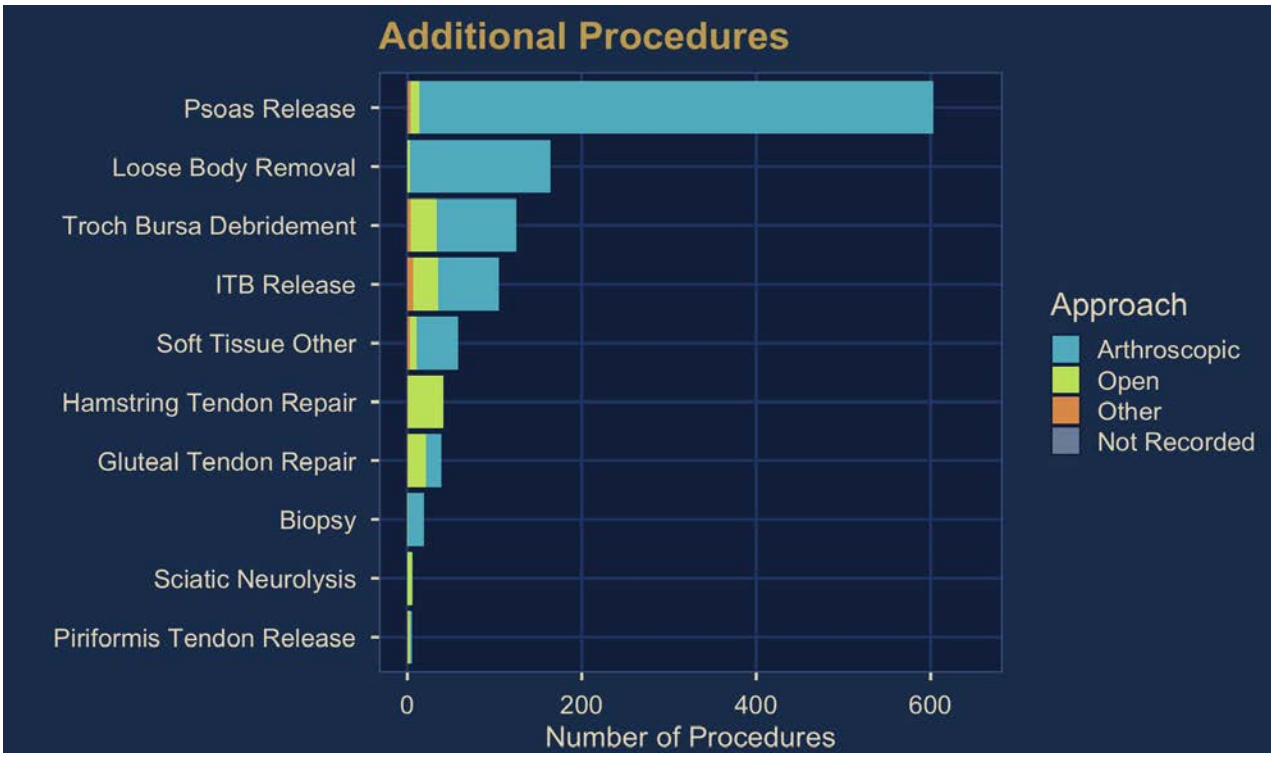



Fig 23: Breakdown of 'other procedures'

# SURGICAL OUTCOMES

## OUTCOMES OF ANTHROSCOPIC PROCEDURES

For analysis of arthroscopic outcomes, we have concentrated on the largest proportion of patients; those who have had surgery for FAI. Overall, these outcomes show meaningful and sustained improvements out to 12 months (Fig 24), with similar patterns of outcome for both male and female patients (Fig 25).

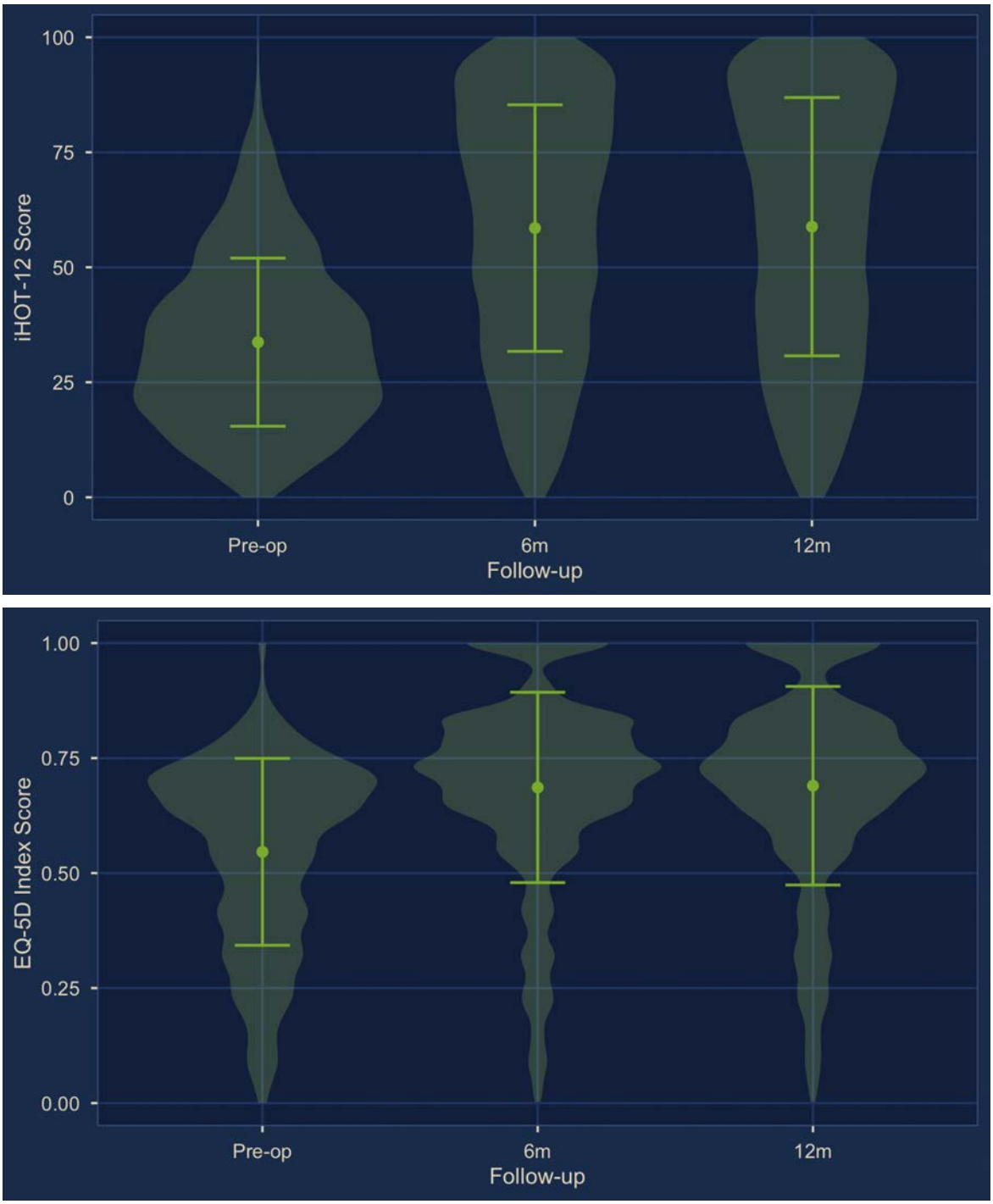



Fig 24: Outcomes of arthroscopy for FAI

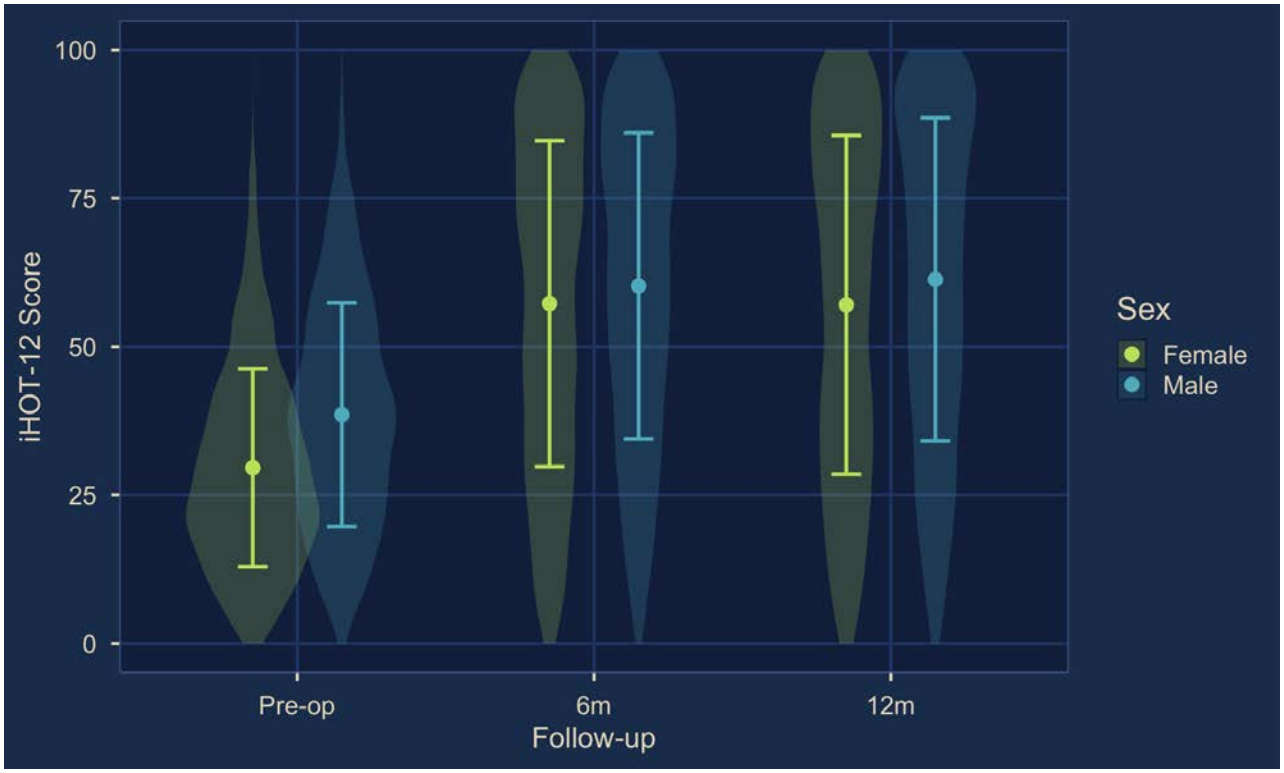
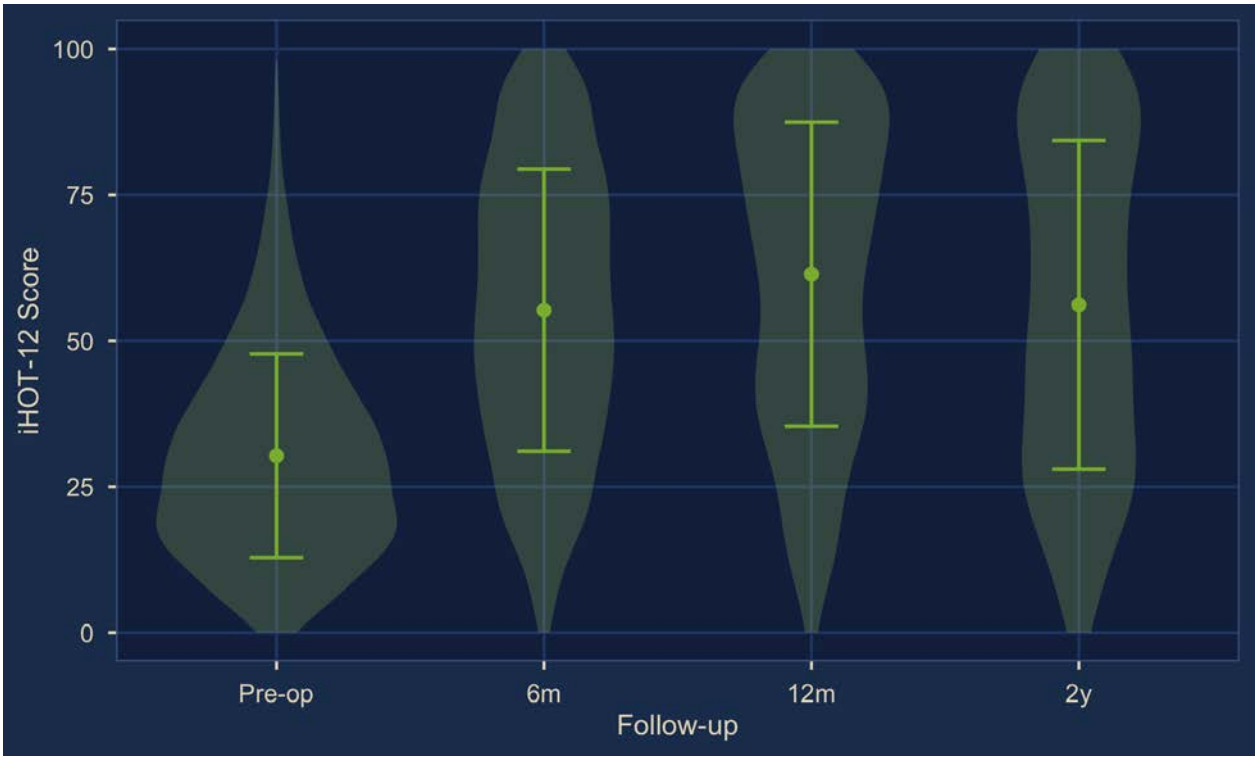



Fig 25: Outcomes of arthroscopy for FAI stratified by sex

# OUTCOMES OF PAO SURGERY

The outcomes of PAO surgery show meaningful improvements in both iHOT and Eq-5D scores maintained out to the 2yr follow up point (Fig 26). These improvements are seen in both male and female patients (Fig 27).



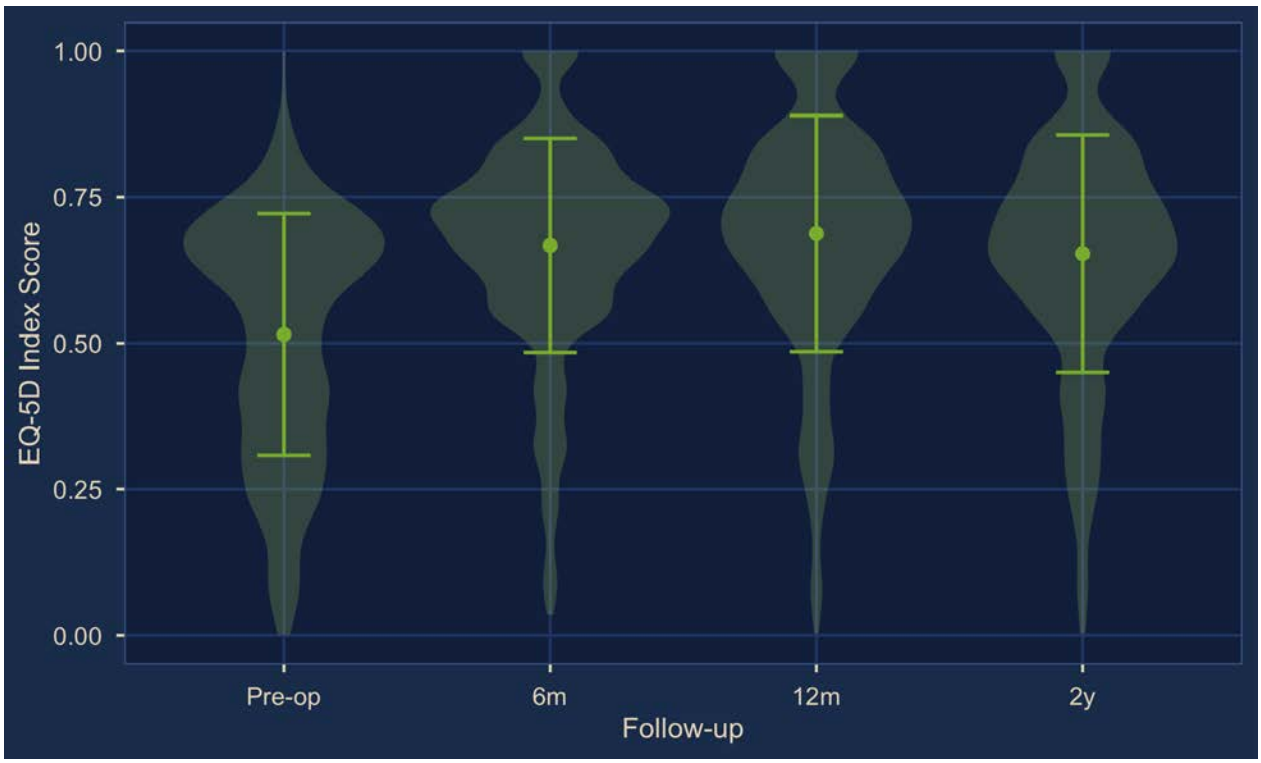
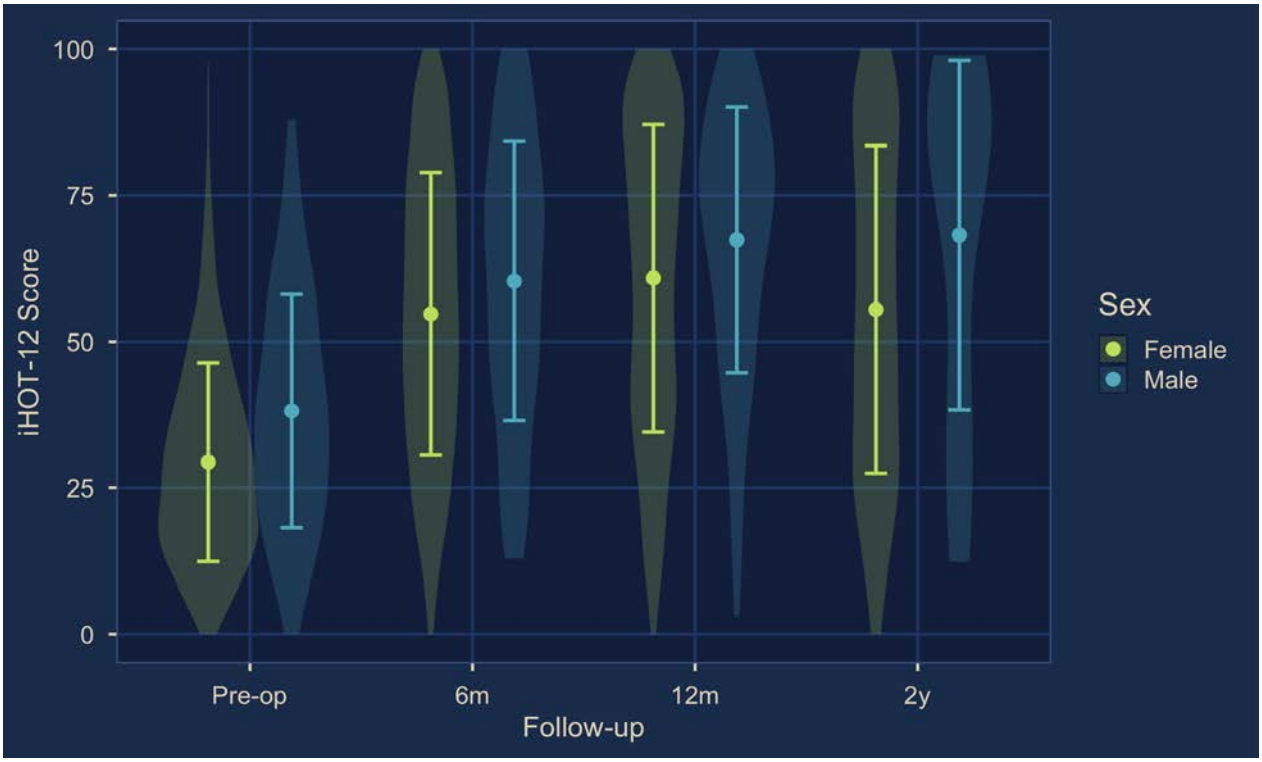


Fig 26: Overall Outcomes for PAO



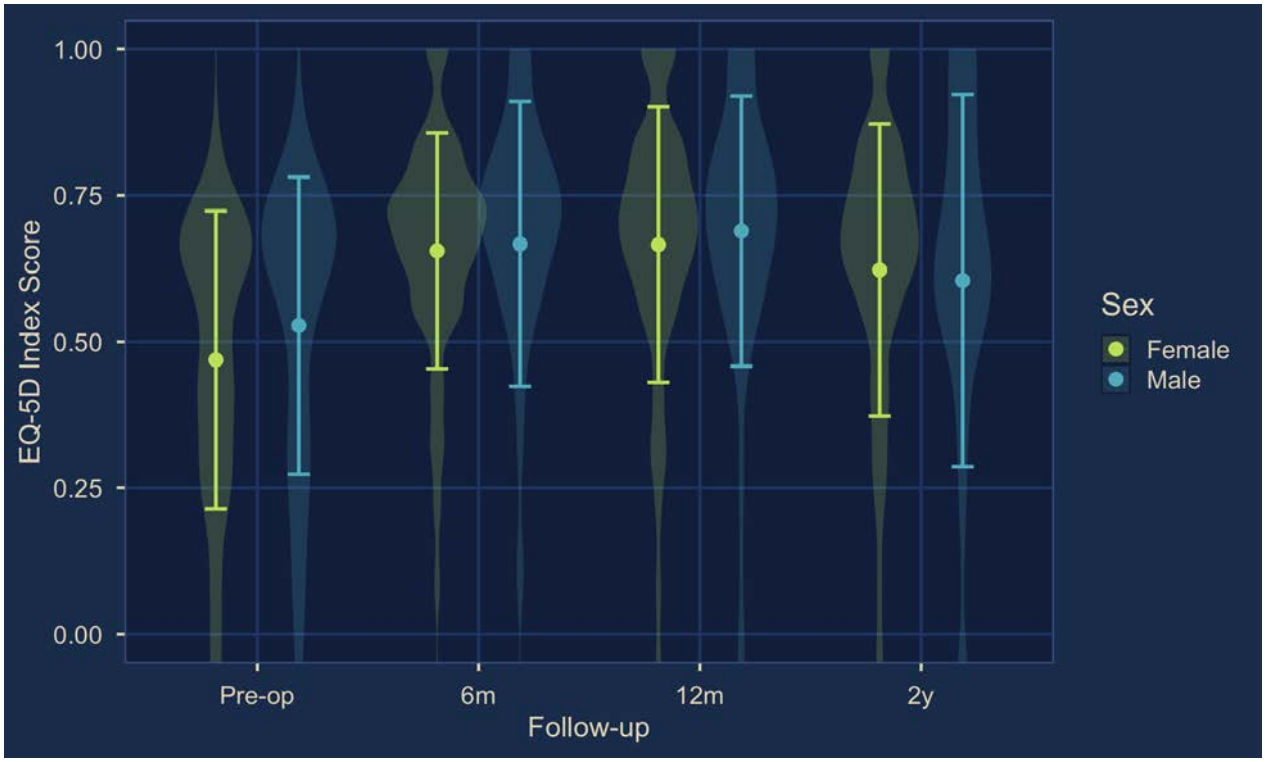


Fig 27: Outcomes for PAO stratified for sex

Overall outcomes are not particularly affected by age with similar improvements across the range but the vast majority of patients undergoing this procedure are under 40yrs old (Fig 28).

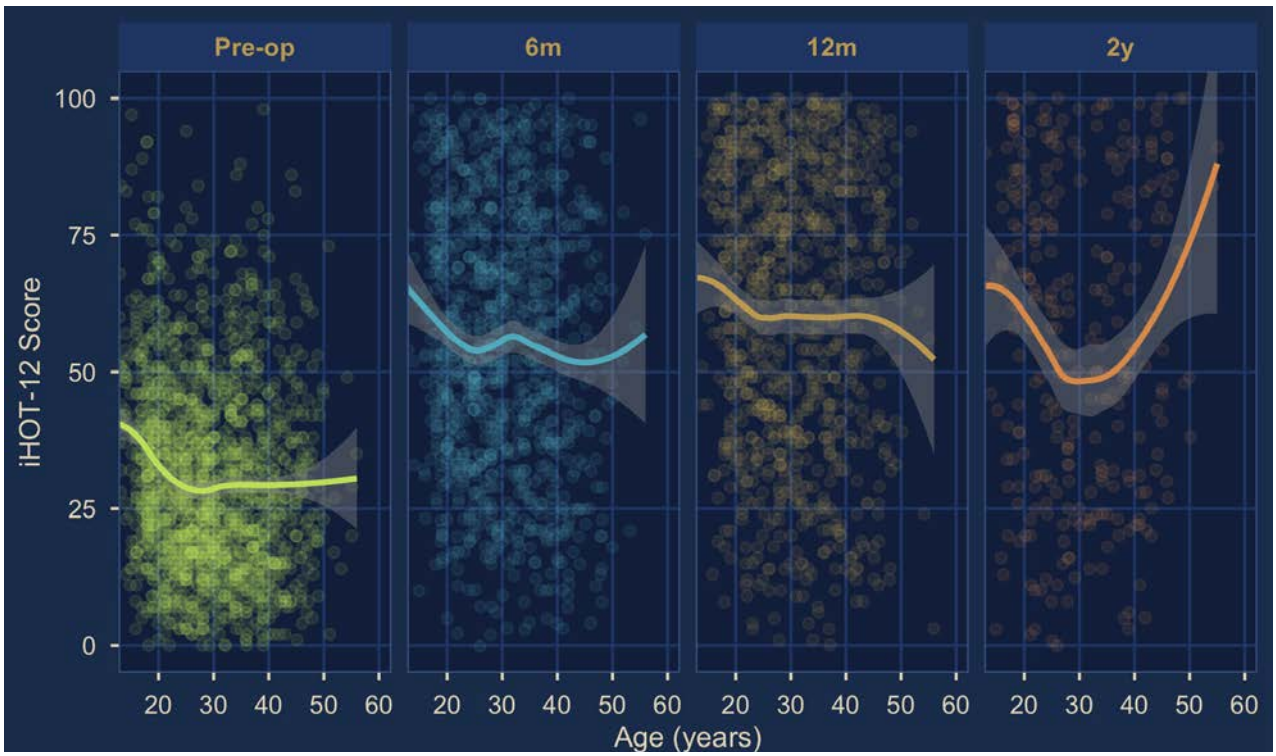


Fig 28: Outcomes for PAO stratified for Age

Outcomes are influenced by patient BMI, with higher BMI being associated with lower pre-operative and post-operative scores at all time points (Fig 29). Due to the drop off in data collection after surgery, there are wider confidence intervals at the 2 year follow up point for all of these analyses which needs to be taken into account.

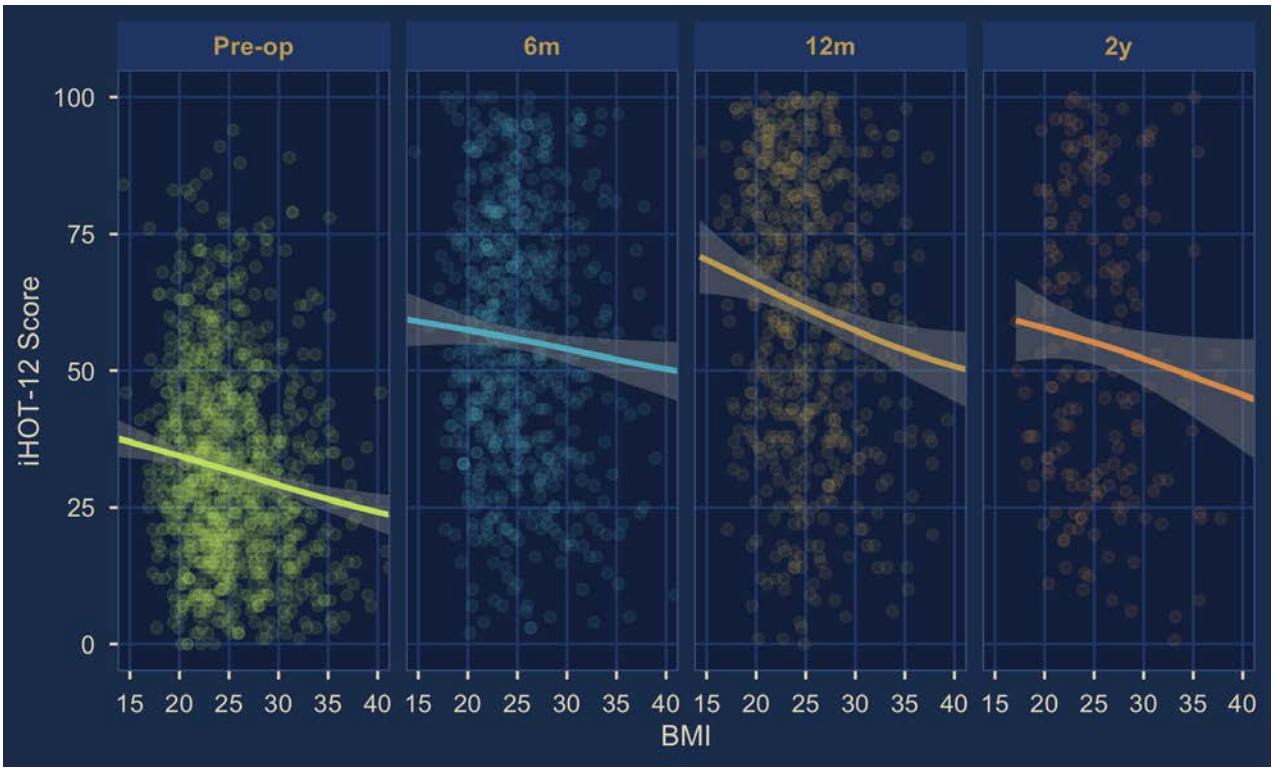


Fig 29: Outcomes for PAO stratified for BMI

# FUTURE DIRECTIONS

The NAHR represents an important and evolving national resource providing meaningful insights into contemporary hip preservation practice in the UK. While procedural data capture is robust, incomplete surgeon engagement and declining patient-reported outcome completion at longer follow-up time points remain key limitations. These issues reduce the reliability of long-term outcome analysis and may limit the potential for high-quality research using registry data – they are key areas for the ongoing development of the NAHR. That said, this remains an exciting time for the registry, now into it's 14th year. 'Bit on future plans'.

We are introducing a new MDS to enhance our data collection along with self registration portals for patients to increase capture, and will continue to encourage all UK surgeons engaged in hip preservation to contribute their data to help improve outcomes for all of our patients.

We look forward to the Medical Devices Outcomes registry project adding impetus to making data submission mandatory, and providing the infrastructure to support this. We also look forward to ongoing collaboration with the other international non-arthroplasty registries, and potential publications on the merged data.

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