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BOFAS

British Orthopaedic Foot & Ankle Society

Registry Report 2019

INTRODUCTION

The data presented in this report cover procedures entered into the British Orthopaedic Foot & Ankle Society (BOFAS) Registry from 2014 until the end of 2018. The 1st Metatarsophalangeal Joint Arthrodesis Pathway (1st MTPJAP) and the Ankle Arthrodesis Pathway (AAP) have been open since the registry started, however the Foot and Ankle Pathway (FAP) was only opened towards the end of 2016.

Over this period of time we have seen a steady increase in data entry but, it is clear that as it currently stands, the registry only captures a small proportion of national activity, both in the Private & NHS sectors. The majority of the information in this report is summary data, it is anticipated that as the number of cases increase, we will be able to analyse the outcomes statistically.

The information contained within this report will be useful for BOFAS members in their appraisals and, as we continue to collect data, it will aid quality improvement and help direct practice nationally.

The BOFAS Registry is one of the eight Emerging Registries forming part of the Trauma & Orthopaedic Registries Unifying Structure (TORUS). TORUS is a collaborative project of the British Orthopaedic Association (BOA) in conjunction with the specialist societies.

AIMS

The broad aims of the BOFAS Registry are in line with those of the BOA Quality Outcomes project:

- Help surgeons to track the outcomes of their patients.
- Allow Surgeons/Trusts to compare themselves to others or the average and to identify areas for improvement.
- Provide surgeons with information for revalidation.
- Provide evidence on trends in outcomes, performance of different implants/procedures/etc.
- Enable individuals and Trusts who may be potential outliers to be alerted to this in order to take action.

BACKGROUND

The BOFAS Registry is the responsibility of the BOFAS Outcomes Committee. The role of the committee is to support the Society and Council in developing suitable processes to collect patient outcome measures.

Duties of the Outcomes Committee include:

- Working with the platform provider to enable collection of information into central BOFAS registry
- Ensuring that the consent form remains compliant with legal requirements.
- Oversight of information governance.
- Publication of data.
- Registry funding.
- Long term strategy.

Further details regarding the BOFAS Registry can be found on the BOFAS Website.

MEMBERSHIP OF OUTCOMES COMMITTEE

- Chair: Paul Halliwell
- Member: Nick Harris
- Member: Lyndon Mason
- Member: Nilesh Makwana
- Member: James McKenzie
- Member: Ed Wood
- Caldicott Guardian: Stephen Bendall
- President: Tricia Allen
- Treasurer: Heath Taylor
- Secretary: Mark Davies
- Co-opted: Andy Goldberg
- Co-opted: Karan Malhotra

LIST OF CONTRIBUTING SURGEONS / UNITS

Andrea Sott	Epsom St Helier NHS Trust
Arshad Khaleel	
Ashok Acharya	
Barry Rose	Eastbourne District General Hospital
Billy Jowett	
Claire Topliss	ABMU HB
Cliff Butcher	University Hospital Aintree
Davenport James	Wrightington Hospital
David Townshend	
Devendra Mahadevan	Royal Berkshire NHS Foundation Trust
Edward Wood	Countess of Chester Hospital
Heath Taylor	Royal Bournemouth Hospital
Iain Bissell	
Jamie McKenzie	Royal Orthopaedic Hospital, Birmingham
John Stuart Moir	Greater Glasgow & Clyde
Jonathan May	Chesterfield
Julian Grundy	YDH
Katharine Thomason	Countess Of Chester Hospital
Lyndon Mason	University hospital Aintree
Mark B Davies	Sheffield Teaching Hospital NHS
Melwyn Pereira	Joint Clinic, Droitwch
Michael Karski	Wrightington Hospital
Nicholas Savva	Dorset County Hospital
Nilesh Makwana	RJAH
Osmond Thomas	NewCross Hospital
Paul Halliwell	Royal Surrey County Hospital NHS Trust
Paul Hamilton	Epsom & St. Helier
Peter Robinson	Southmead Hosptial, Bristol
Robert Smith	
Robin Elliot	Hampshire Hospital
Robin Rees	University Hospital of North Midlands NHS
Sanjeev Goswami	Walsall Healthcare NHS Trust
Simon Henderson	Musgrave Park Hospital
Stephen Hepple	Southmead Hospital Bristol
Steve Milner	Royal Derby Hospital
Sue Kendall	
Tim Clough	Wrightington Hospital
Tim Millar	University Hospitals of Morecambe Bay
Tristan Barton	Royal United Hospital Bath
Turab Syed	Royal Free London Hospital
Vivek Dhukaram	University Hospitals Coventry & Warwickshire
Williams Harries	Southmead Hospital Bristol

*Where Organisation is blank – information not available from individual's BOFAS Profile.

SUMMARY

UPTAKE OF THE REGISTRY

The degree of uptake of the registry by the BOFAS membership is increasing with time. We have seen a more than doubling of the total number of cases in the combined pathways over the course of 2018 (413 – 850). This is still however only a small proportion of the national figures. In 2018 we saw 103 1st MTPJ Fusion and 41 Ankle Fusion cases registered. Nationally, for the 2017/18 period, HES data indicate there were 5940 1st MTPJ fusion cases and 2045 primary ankle fusions. At the end of 2018 there were 42 surgeons actively inputting cases with a total of 55 registered. Clearly there is still a lot of scope for growth.

BARRIERS TO UPTAKE

A number of factors may prevent surgeons from registering and entering cases: time pressure, unfamiliarity, concern regarding data use. As the registry is not currently mandated, support from Trusts regarding data collection & input is widely variable. We believe this will be a valuable tool for our members for revalidation & appraisal and may become something that the Responsible Officers look to.

COMPLIANCE

Compliance for consent is high across the three pathways (≥95%). Where consent has been gained, surgeons can look back at individual outcomes. Where consent is absent, the record is anonymised. In this scenario, the PROMS enter the registry summary data, but it is not possible to identify the individual or add follow up data. It is still necessary to take paper consent and file this in the notes even though patients confirm consent online when they first log in, since their details have been entered to enable them to be contacted, and that is only legal if consent has already been taken.

Between 15% and 34% of cases have no email address associated with their entry. This removes the ability of the registry to automate data collection. In this scenario different strategies for post-op PROMS collection need to be put in place. Making use of telephone review streams can be a good solution.

We have also seen a significant proportion of patients registered but with no initial PROMS entered (18% - 39% depending on pathway). It is not clear if this reflects patients registered in clinic, who are yet to come to their procedure, or if it has simply not been recorded.

DATA ANALYSIS

As the number of cases are small, only summary data is presented in this report. As the numbers grow we aim to provide more robust, statistical analysis. For the 1st MTPJ fusion & Ankle Fusion pathways the criteria are clearly defined and analysis of the variables should be easily achieved. The more generic Foot & Ankle pathway will be more difficult to analyse because of the sheer variety of procedures undertaken. We are working with Amplitude to try to achieve consistency, particularly with definition of procedures, to help us achieve this in the future.

OVERVIEW OF PROM SCORES

The BOFAS registry allows foot and ankle surgeons to use the outcome scores to assess patients both pre and post operatively. The Outcomes committee, following a review defined that the following scores would be collected as the Minimum Dataset:

1. MOXFQ
2. EQ- 5D-5L
3. EQ-5D Health VAS

The database is hosted by Amplitude. Other scores may be available depending on surgeon choice. Scores are recorded pre-operatively then routinely, via email or in person, at six months and one year post-operatively.

EQ-5D-5L AND EQ-5D HEALTH VAS

EQ-5D is a standardised measure of health status developed by the EuroQol Group in order to provide a simple, generic measure of health for clinical and economic appraisal. The five level EQ-5D consist of two pages: the EQ-5D descriptive system and the EQ VAS. The EQ-5D comprises five domains: mobility, self-care, usual activities, pain/discomfort and anxiety/depression. Each dimension has 5 levels: no, slight, moderate, severe and extreme problems. The digit generated for each dimension is combined into a 5 digit number that describes the patient's health state. For example a health state 21143 represents a patient who indicates slight problems with mobility, no problems with self care, and usual activities dimension, severe pain or discomfort and moderate problems on the anxiety/depression dimension. The health states can then be converted into a single Index value.

The EQ VAS records the patient's self-rated health on a vertical 20cm VAS line, where the end points are labelled `The best health you can imagine` (100 points) and `The worst health you can imagine` (0 points). The VAS can be used as a quantitative measure of health outcome that reflect the patient's own judgement.

The EQ-5D-5L has been validated in a diverse patient population in 6 countries. The EQ-5D data can be compared against data for the average person of the same age and/or gender in the general population, helping identify the burden of disease in a particular patient population.

MOXFQ

The Manchester-Oxford Foot Questionnaire is a 16 –item PROM instrument, which is self administered. It assesses how foot and ankle problems impair health-related quality of life and is completed pre and post-operatively. It was originally intended for use for hallux valgus surgery and more recently proven for use with a variety of foot and ankle problems

The questionnaire consist of three domains/scales:

1. Walking/standing – 7 items. (MOxFQ-W)

2. Pain – 5 items. (MOxFQ- P)

3. Social interaction – 4 items (MOxFQ-S)

The responses consist of a 5 point Likert scale (0-4) which ranges from no limitation (0) to maximum limitation(4). Scores for each domain are calculated by summing the responses in each domain. The raw scale scores are then converted to a metric from 0-100, where 100 denotes the most severe. The raw scores can also be used to generate a summary Index score (MOxFQ- Index). The questionnaire has been validated.

1ST METATARSOPHALANGEAL JOINT ARTHRODESIS PATHWAY

Within the registry, 288 pathways have been instituted since the pathway went live in 2016. Of this 288 pathways, 86 have completed 6 month follow up scores and 50 patients have completed follow up scores to 12 months. The age range for this patient cohort is illustrated in figure 1. The 11 patients over 100 are likely to represent an incorrect date submitted. The BMI range is illustrated in figure 2. The operation was undertaken on the right foot in 49% of individuals and left side in 43% of individuals, 8% the side was not recorded. Smoking was recorded in 7% of individuals, ex-smoker in 19% of individuals and non-smoker in 74% of individuals. The numbers for smoking was too small to make any comparison in outcomes.

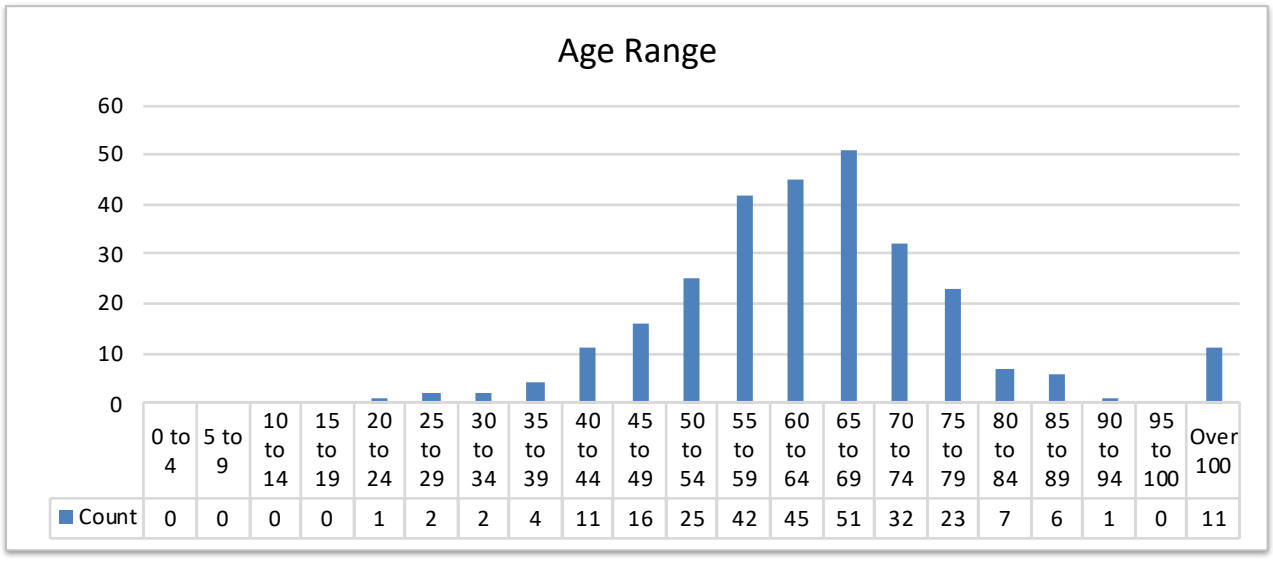

Figure 1 - Age range of individuals placed on the 1st MTPJ Arthrodesis pathway.

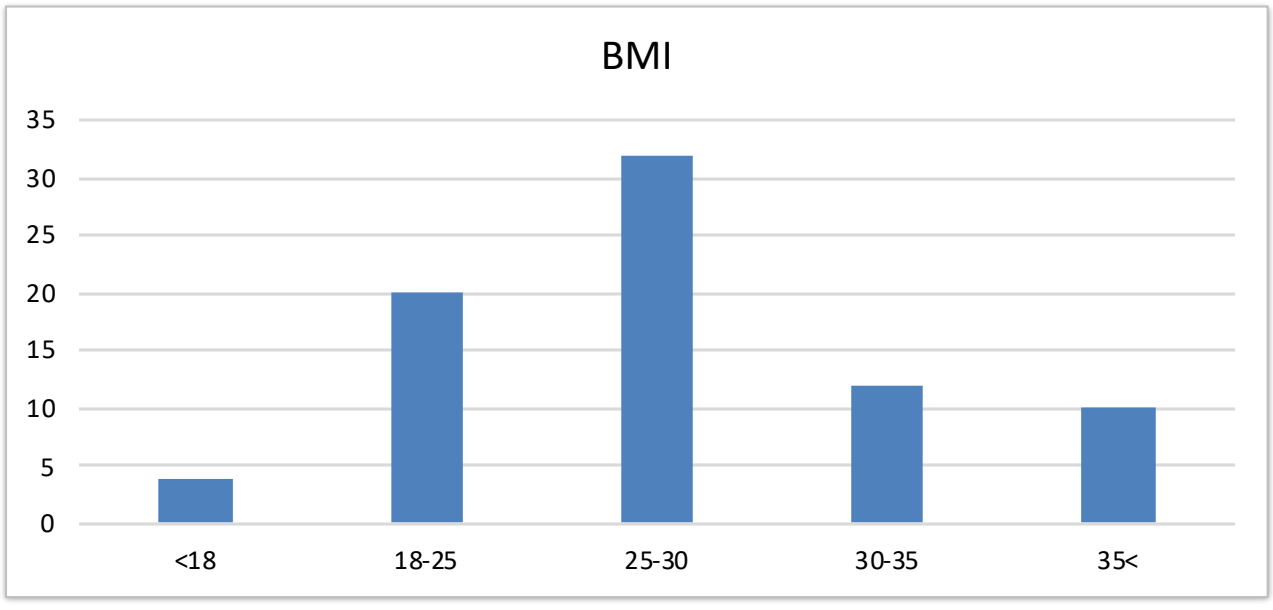

Figure 2 - Body Mass Index of individuals placed on the 1st MTPJ Arthrodesis pathway.

The majority of patients were classed as primary procedures, with only 2 revision procedures and 1 conversion of arthroplasty on the database. 70% of procedures were performed alone and with 30% undergoing additional surgical procedures.

The average increase in the EQ-5D index was from 0.54 preoperative to 0.82 at 1 year post operative. In comparison to population norms((Kind P, Hardman G, Macran S 1999. "UK population norms for EQ-5D," Working Papers 172chedp, Centre for Health Economics, University of York), this is favourable as the mean EQ-5D index is 0.713 (Std Dev 0.229, Median 0.786) for England.

The pain scores improved significantly in both the VAS pain and MOxFQ pain indices as illustrated in figures 4 and 6. The Social and Walking/standing indices also improved significantly as illustrated in figure 6.

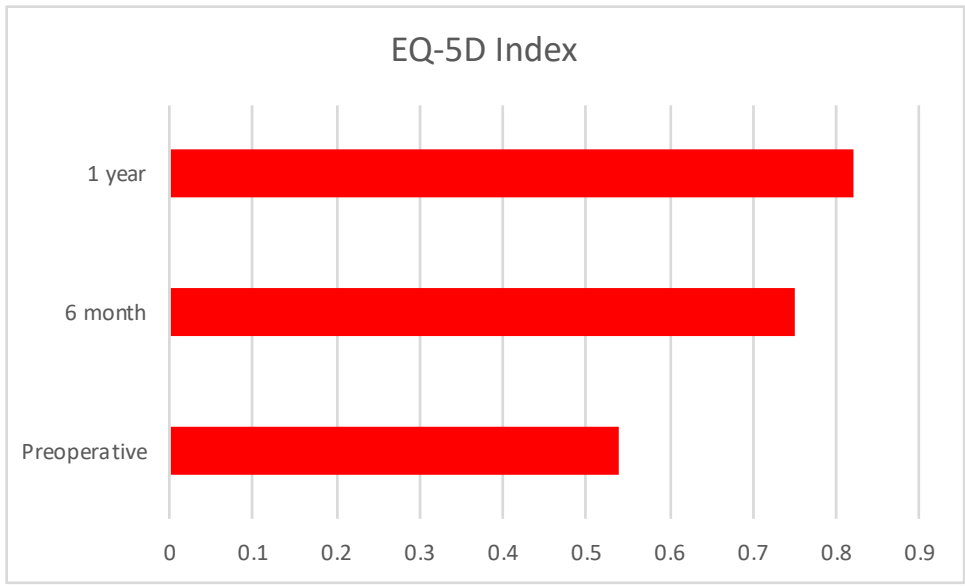

Figure 3 - EQ-5D Index illustrating average scores preoperative, 6 months and at 1 year follow up for 1st MTPJAP.

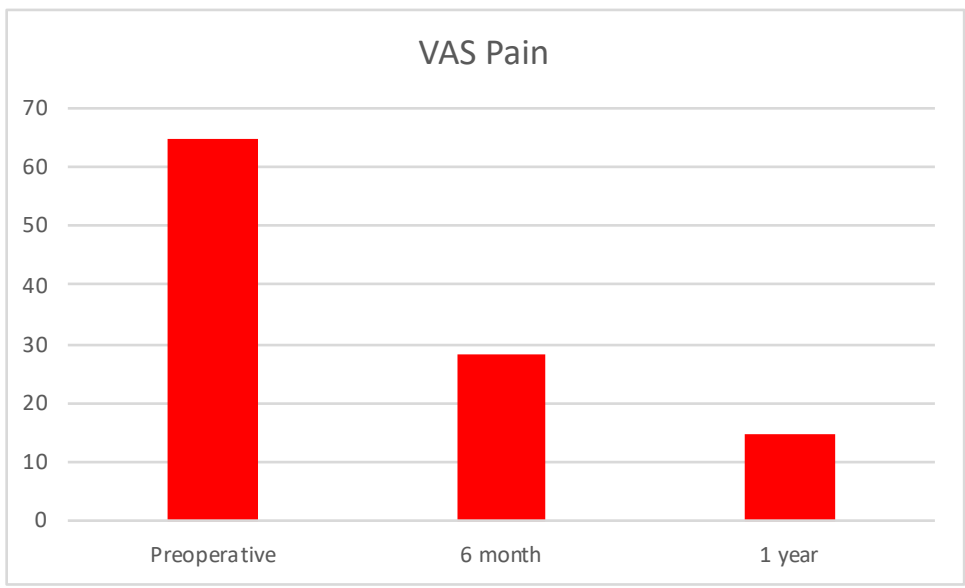

Figure 4 - VAS Pain illustrating average scores preoperative, 6 months and at 1 year follow up for 1st MTPJAP.

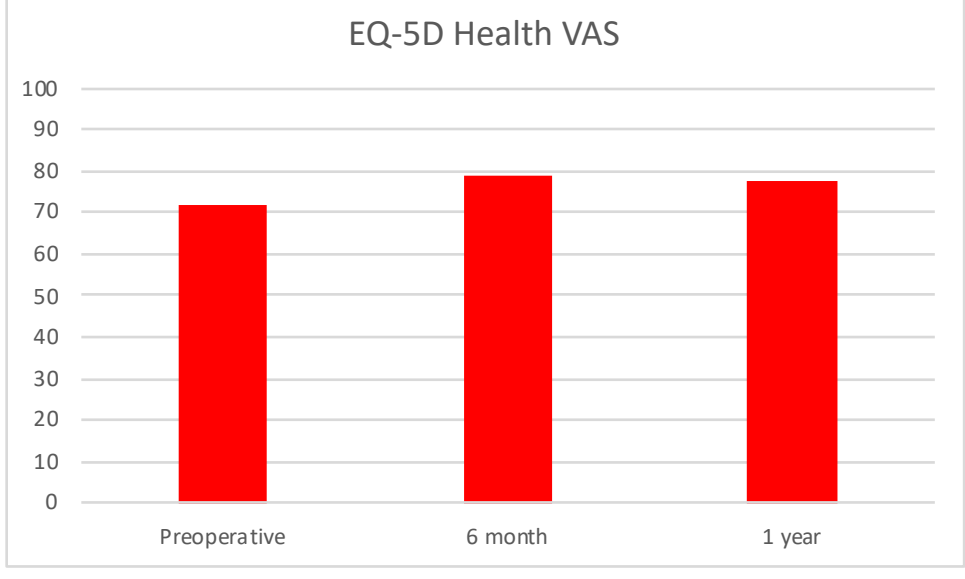

Figure 5 - EQ-5D Health VAS illustrating average scores preoperative, 6 months and at 1 year follow up for 1st MTPJAP.

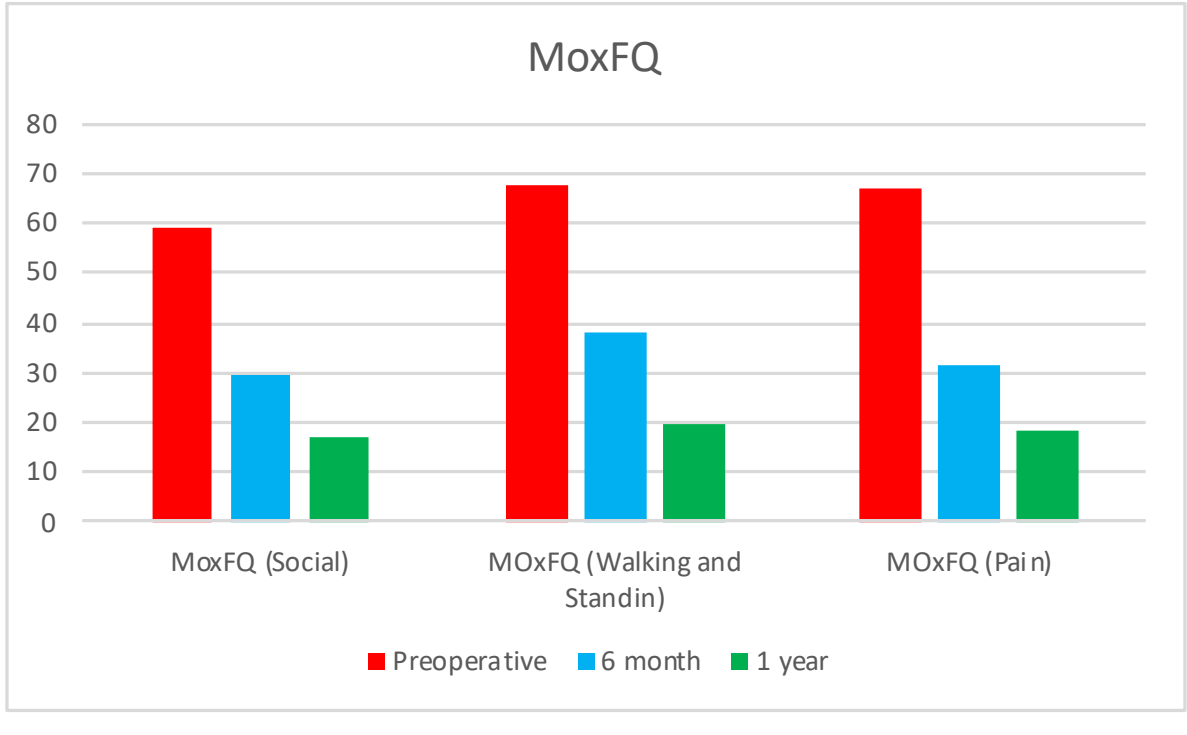

Figure 6 - MOxFQ social, walking/ standing and pain average scores preoperative, 6 months and at 1 year follow up for 1st MTPJAP.

ANKLE ARTHRODESIS PATHWAY

Within the registry, 117 AA pathways have been instituted since the pathway went live in 2016. Of this 117 pathways, 41 have completed 6 month follow up scores and 25 patients have completed follow up scores to 12 months. The age range for this patient cohort is illustrated in figure 1. The BMI range is illustrated in figure 2. Smoking was recorded in 5% of individuals, ex-smoker in 18% of individuals and non-smoker in 77% of individuals. The numbers for smoking was too small to make any comparison in outcomes. The most common indications for fusion was primary arthritis and post-traumatic arthritis. Other indications included inflammatory arthritis, and avascular necrosis of talus.

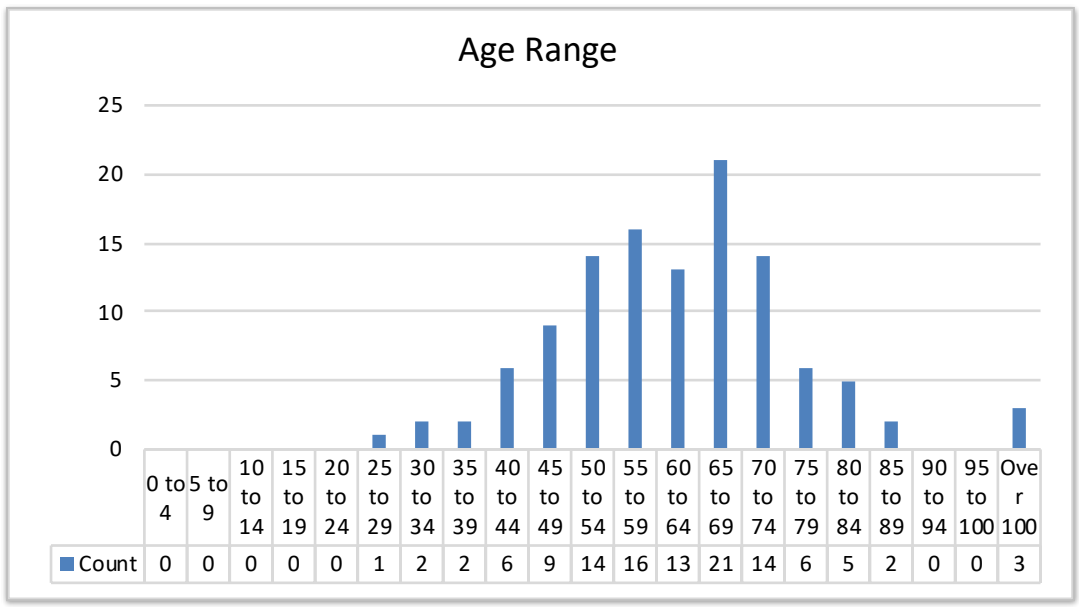

Figure 7 - Age range of individuals placed on the ankle arthrodesis pathway.

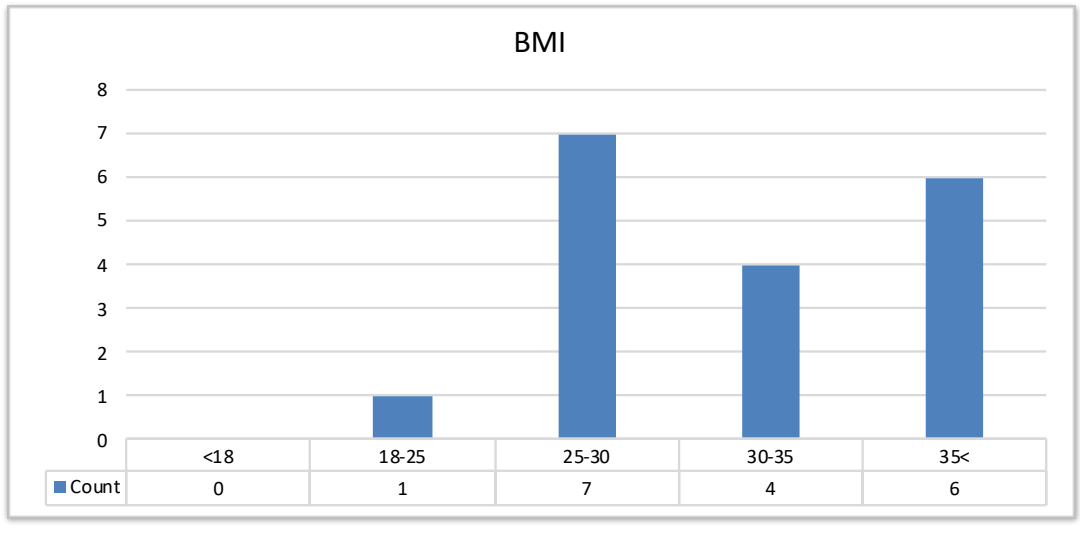

Figure 8 - Body Mass Index of individuals placed on the Ankle Arthrodesis pathway.

Arthroscopic fusions accounted for 45% of the recorded pathways and 55% were open. The number of 1 year post-operative completed scores are too small to make comparisons between the approaches. Ankle fusion fixation was undertaken using cannulated screws in 90% of patients. The other forms of fixation include plates, an external fixator and staples. In those individuals undergoing fusion using screws, 2 screws were used in 80% and 3 screws in 20%.

The average increase in the EQ-5D index was from 0.42 preoperative to 0.73 at 1 year post operative. In comparison to population norms (Kind P, Hardman G, Macran S 1999. "UK population norms for EQ-5D," Working Papers 172chedp, Centre for Health Economics, University of York), this is favourable as the mean EQ-5D index is 0.713 (Std Dev 0.229, Median 0.786) for England. In comparison to the 1st MTPJ arthrodesis pathway, the index does not make a significant improvement at 6 months, but did so at 1 year.

The pain scores improved significantly in both the VAS pain and MOxFQ pain indices as illustrated in figures 4 and 6. The Social and Walking/standing indices also improved significantly as illustrated in figure 12.

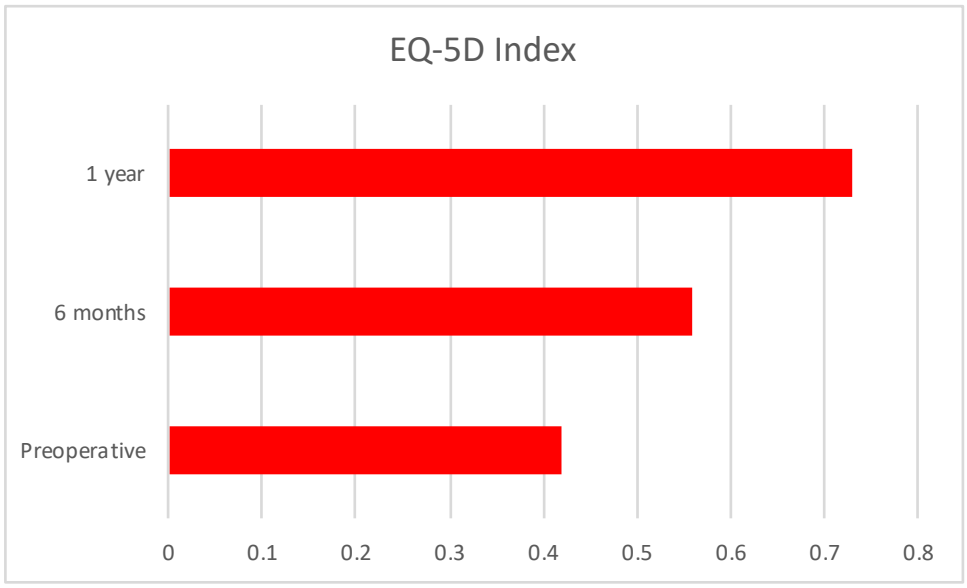

Figure 9 - EQ-5D Index illustrating average scores preoperative, 6 months and at 1 year follow up for AAP.

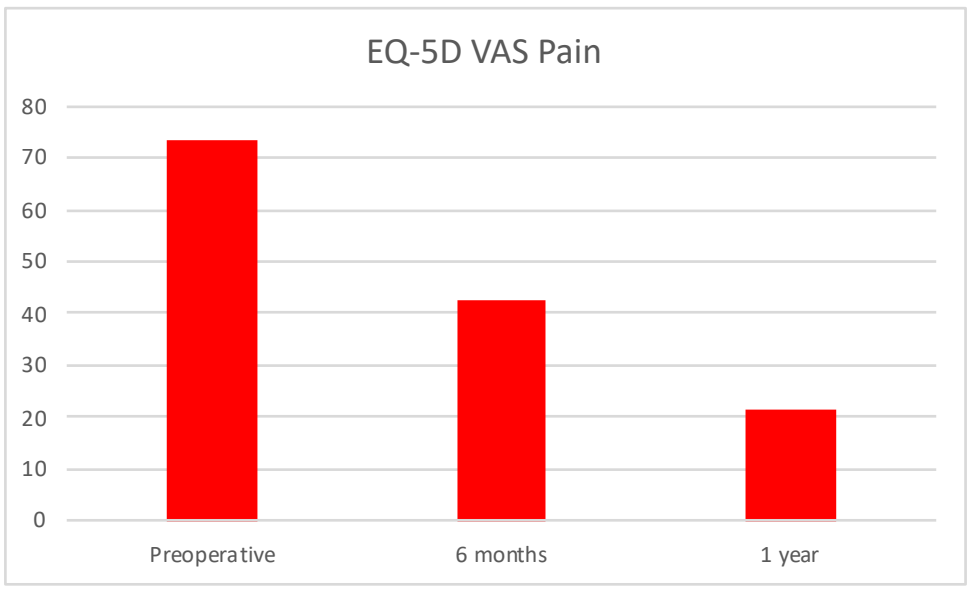

Figure 10 - VAS Pain illustrating average scores preoperative, 6 months and at 1 year follow up for AAP.

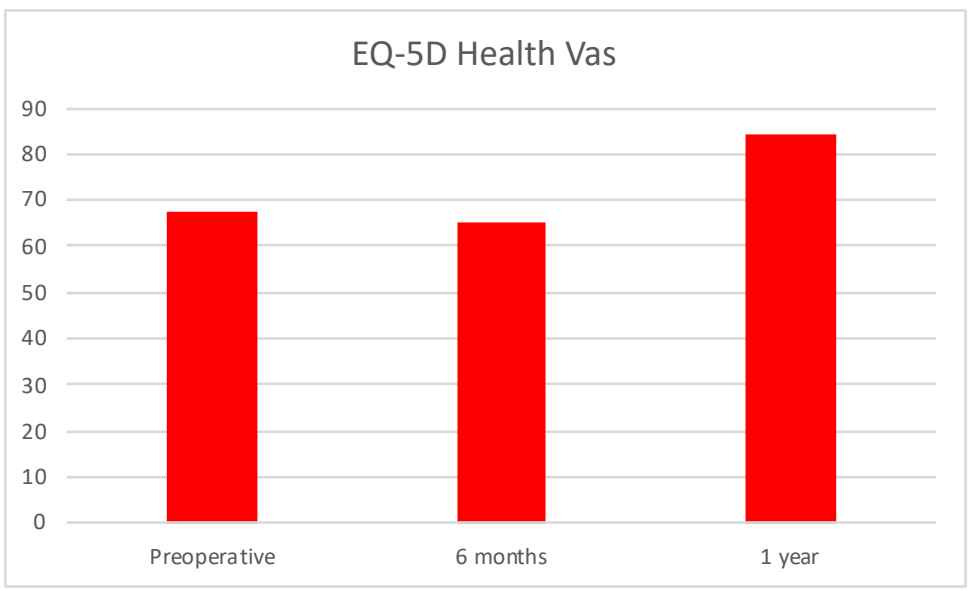

Figure 11 - EQ-5D Health VAS illustrating average scores preoperative, 6 months and at 1 year follow up for AAP.

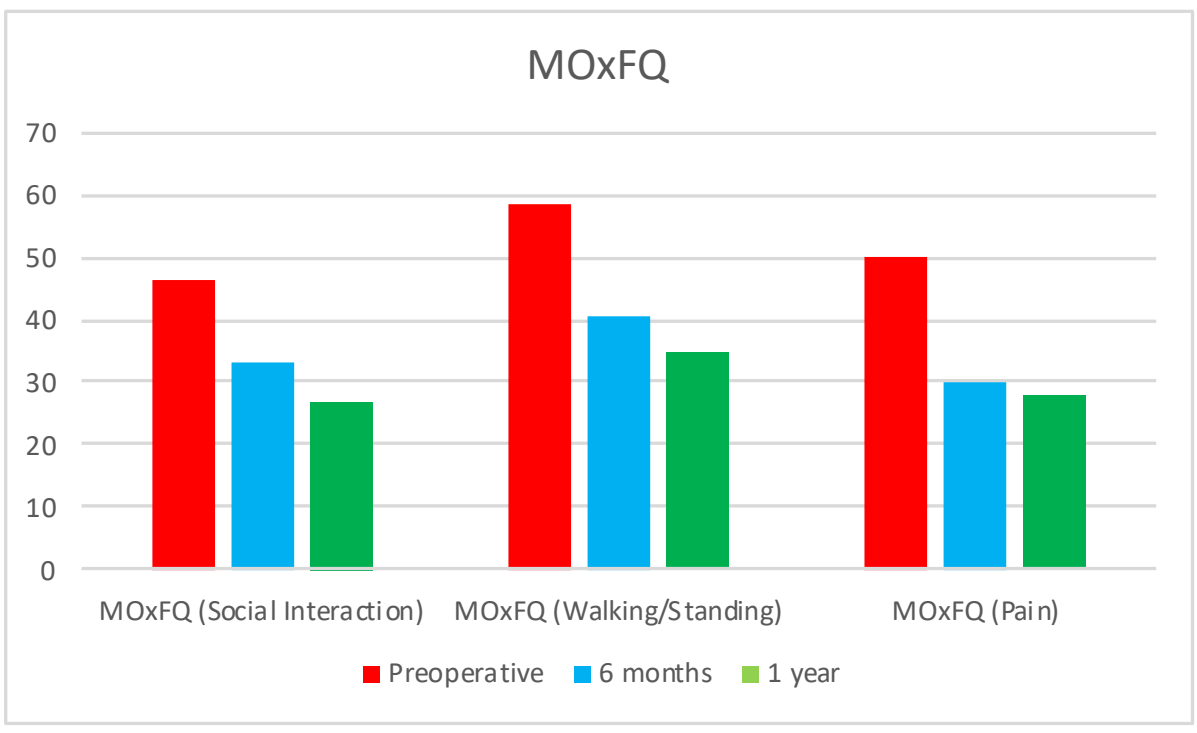

Figure 12 - MOxFQ social, walking/ standing and pain average scores preoperative, 6 months and at 1 year follow up for AAP.

FOOT AND ANKLE GENERAL PATHWAY

Within the registry, 451 FAG pathways have been instituted since the pathway went live in 2017. Of this 451 pathways, 99 have completed 6 month follow up scores and 21 patients have completed follow up scores to 12 months. The age range for this patient cohort is much more diverse than the previous pathways, as illustrated in figure 13. The most common diagnosis in this pathways were hallux valgus, hallux rigidis, acquire toe deformity and osteoarthritis. At this present time the number to complete the 1 year outcomes are too small to allow analysis.

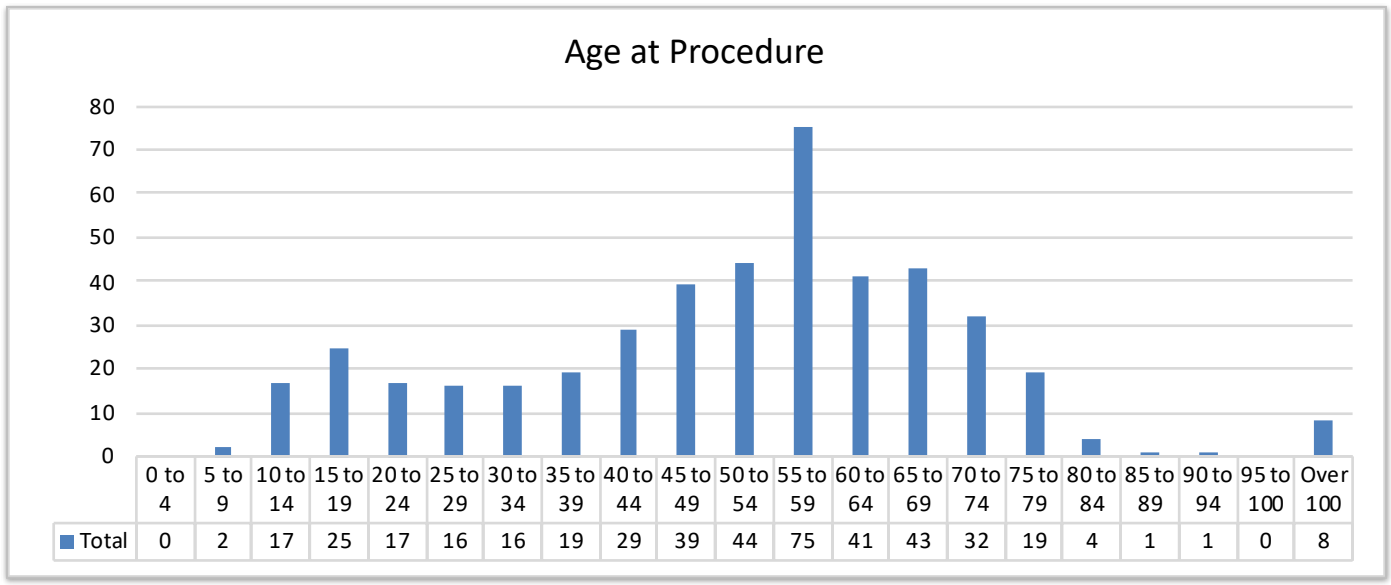

Figure 13 - Age range of individuals placed on the foot and ankle general pathway.

FUTURE PLANS

The committee have presented to the BOFAS Council costings for additional pathways. These include Ankle Fractures, Total Ankle Replacements (mirroring, perhaps linking with, the NJR) and Achilles Tendon Surgery. At the time of writing, only 9% of the BOFAS membership is signed up to use the Registry. As the Registry is funded by all BOFAS members, free at the point of use, the BOFAS Councils position is that the additional expenditure is not yet justified. With increased participation in the registry however, this balance changes and we hope to be in a position to progressively introduce these new pathways in the future.

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