National Clinical Strategy for Orthopaedics (NCSOS) Report 2f - Guidelines and Recommendations Foot & Ankle Surgery

1. Executive Summary

Foot & Ankle surgery is one of the lower volume Orthopaedic subspecialties yet has numerous and sometimes, very complex pathways and patient groups, e.g. the diabetic foot, congenital deformity.

There are numerous existing national and specialist society guidelines that exist in isolation. This document provides recommendations on how these can be developed into integrated clinical pathways and how further pathways can be developed where gaps and need exist; combining these recommendations with the other Orthopaedic subspecialties will lead to transformative pathway re-design. It is complemented by the NCSOS report 2a – *"General Strategic Pathway Recommendations"* and will feed into the NCSOS final report 3 *"The National Blueprint for Orthopaedic Surgical Delivery".*

A significant number of the action points and recommendations in this document require HB level intervention and accountability and are well within limits of feasibility. Other actions need central intervention and can only be led clinically, through the development of a National Foot and Ankle Clinical Reference Group (NFACRG) working within the governance structure of a fully resourced Welsh Orthopaedic Network (W.O.N) with authority to implement and deliver change at scale. The NFACRG and W.O.N will be discussed further in NCSOS report 3.

The whole Foot & Ankle pathway is considered within this document. It requires transformative change in parts to deliver a seamless journey for the patient. Allied health staff, in particular podiatrists are key to this. This staffing group should be integrated within all stages of the pathway from primary care through triage to secondary and tertiary care clinics. Likewise, at the other end of the pathway, wound nurses should be able to migrate from secondary care follow up to community follow up clinics to ensure raising of training and uniformity of standards of care. This will reduce variation, improve quality and reduce adverse outcomes.

Secondary and tertiary infrastructure requires urgent attention. Achieving estates standards in all HB's for OPD services such as access to plaster technician staffing and rooms, and radiology support is the bare minimum; we should be striving for far more for our patients and developing gold standard and innovative pathways at scale on a national level via the NFACRG and W.O.N, e.g. one stop USS OPDs.

F & A is predominately daycase based and needs a national network of suitably resourced day case units with fully trained staff, laminar flow, implants and fluoroscopy. There is a more complex pathway and patient group that may need inpatient and regional approaches. This will be discussed further in NCSOS report 3 following a full consultant workforce and demand capacity review.

2. Background

The delivery of orthopaedics has been challenging in Wales for decades. The National GiRFT (Getting it Right First Time) review of services was commissioned in 2014 by Welsh Government ahead of the formation of the National Planned Care Programme and the Welsh Orthopaedics Board. However, the recommendations made by GiRFT and supported by clinicians to provide dedicated elective Orthopaedic ring fenced beds through the development of cold elective sites within each Health Board, were not implemented. As a result, services continued to be impacted by regular and frequent unscheduled care pressures.

The Pandemic has exposed this failing system and resultant capacity shortfalls within orthopaedics to the fullest. In September 2021, Welsh Government (WG) commissioned the National Clinical Strategy project for Elective Orthopaedics Surgery (NCSOS) with the primary objective of developing a surgically focused redesign and blueprint for the future state of elective Orthopaedic surgery delivery in Wales, unconstrained by Health Board (HB) boundaries. Alongside this, GiRFT were commissioned to undertake a parallel review in co-ordination with the NCSOS project to provide recommendations for recovery and redesign of services in the short term. It should be noted that Paediatric Orthopaedics and Spinal Surgery services are being considered separately as part of the WHSSC programme of commissioning.

At the outset of the NCSOS project, it was clear that its scope needed to include review of the whole pathways of care feeding into the surgical services. Reviewing surgical delivery alone would not enable the comprehensive transformation required to provide the scale of change needed to deliver high quality and sustainable Orthopaedic care for the population of Wales. This is especially pertinent for Foot & Ankle Surgery which has numerous pathways of care and interdependencies.

The NCSOS team have therefore developed a suite of reports to cover the work that has been undertaken within the project:

NCSOS Report 1 – *"Orthopaedic Recovery, Urgent - For Immediate Action"*. As part of the project processes, many critical and major risks were identified that needed immediate response, outside of the scope of the strategic role of the NCSOS. At the request of clinicians across Wales, the NCSOS team agreed to provide this interim auxiliary report.

NCSOS Report 3 – *"The National Blueprint for Orthopaedic Surgical Delivery in Wales"* will be published and submitted to WG and Health Board Executive teams in April 2022. This will provide a detailed set of recommendations required to redesign orthopaedic surgery based on clinical pathways and networks, consultant workforce profile and a comprehensive demand and capacity review. It will articulate the required capacity needed to remove the surgical backlog and provide sustainable services at subspecialty and procedure/ pathway specific level. It will provide options of delivery to inform national capacity planning and investment decision-making.

NCSOS Report 2a-f – *"…Pathway recommendations".* These reports comprise of general recommendations (2a) that relate to the Orthopaedic system as a whole while sub reports (2b-f) will focus on specific sub-speciality requirements. These reports will feed into NCSOS report 3 and form the basis of collaborative national pathway development in conjunction with other professional groups. The aim is to create a standardised pathway framework through which care is provided across Wales, which has the ability to adapt for necessary local and regional considerations.

3. Foot and Ankle Surgery – Methodology

This document has been developed in conjunction with the National sub-specialty Foot & Ankle clinical reference group (NFACRG) and is based on local, regional and national considerations, including WG strategy where relevant, and sub-specialty guidelines on best practice. E.g. Getting It Right First Time (GIRFT), British Orthopaedic Foot & Ankle Society (BOFAS).

Section 4 reviews the patient pathway which has been broken down into the ten component parts outlined below, in order to standardise the methodology for all of the orthopaedic sub-specialties.

1) Primary Care
2) Initial Triage
3) Pre-Hospital intervention
4) OPD review
5) Diagnostics
6) Return OPD
7) Listing/ Waiting for Surgery
8) Pre-Assessment
9) Surgery
10) Post-operative

The document details an integrated Foot & Ankle pathway, but where necessary, reference is made to the BOFAS pathology specific guidelines (Annex1) for:-

- Hallux Valgus
- Heel pain
- Lesser toe deformity
- Ankle pain
- Lumps and Bumps
- Acquired Adult Flatfoot Deformity

And GIRFT guidelines (Annex2) for:

- End stage Ankle Arthritis

Section 5 details the NHS England (NHSE) commissioning classifications of Specialised and Non-specialised F&A surgical procedures. The F&A CRG has reviewed these distinctions and their clinical applicability for NHSW. The CRG recommended output categories will underpin the data analysis phase feeding into NCSOS report 3.

Section 6 provides an initial workforce review of F&A consultant level provision in Wales, matched against the specialised and non-specialised procedure demands nationwide, to allow a consultant sustainability review on horizon scanning.

The key recommendations from the FACRG are at (Annex8) attached.

4. Identified National pathway issues for Foot & Ankle

4.1 Primary Care

Attempts at conservative treatment must have been made for at least 3-6 months, including a combination of analgesics, footwear adjustments, physiotherapy and podiatry intervention, depending on existing pathology specific guidance (Annex 1,2) and those to be developed by the NFACRG. Smoking is a high but modifiable risk factor for F & A surgery[3]. Attempts must have been made at cessation interventions prior to referral.

To aid standardisation and improve integrated multi-disciplinary working, including appropriate non-operative management, AHP's including podiatrists should be embedded within MSK pathways alongside F&A surgeons as part of an integrated pathway across primary, secondary and tertiary care. This will improve training and referral quality within primary care and improve patient experience at all stages of the pathway.

In addition to the generic minimum referral dataset outlined in NCSOS Report 2a, specific F&A sub-specialty referral information, as determined by the NFACRG, should be provided to facilitate triage decisions.

Radiological investigations in primary care should be made in accordance with existing guidance (Annex 1,2) and any additional guidance from the NFACRG. In particular, all X-rays when ordered must be Weight Bearing. This will avoid unnecessary and repetitive radiation exposure use.

Action 1: Existing BOFAS & GIRFT guidance, including non-operative management guidance to be implemented nationally within primary care.

Action 2: NFACRG to develop further pathology specific pathway guidance including primary care and imaging guidance where gaps exist.

Action 3: Podiatrists and appropriately trained AHPs to work across an integrated pathway in Primary, Secondary and Tertiary care.

Action 4: Smoking cessation interventions must be implemented prior to referral.

4.2 Initial Triage

An MDT triage system including Foot & Ankle trained APP's, Podiatry and subspecialist consultant should be employed by all HB's. It is recognised that

in some HB's, the triage service Foot & Ankle specialist APP and podiatry workforce is fragile. We recommend a national network workforce review in partnership with HEIW to address recruitment and training to ensure training placements match expected requirements on horizon scanning.

All patients accepted to secondary care should be placed on the BOFAS registry to monitor PROMS/PREMS. There is currently variable national engagement with, and knowledge of the registry. The NFACRG will need to define standards for registry use. The W.O.N will need to establish sustainable resourcing of this registry and data collection across all subspecialties.

Action 5: A national Podiatry and AHP F & A workforce review must be conducted with urgency; training and recruitment should be co-ordinated by HEIW.

Action 6: NFACRG to promote and develop standards for use of the British F & A registry.

4.3 Pre- hospital intervention

It is recognised that the integration of the triage & treat services and Podiatry within Foot & Ankle pathways is variable across Wales. It is recommended that CMATS/MCAS have specific roles in the MDT triage & treatment of Foot & Ankle referrals in line with recommendations made above. It is further recommended that learning from, and national roll-out is considered, of existing HB pathways (Annex3).

Action 7: NFACRG to implement national roll out of good practice, proven and successful HB level pathways where deemed appropriate.

4.4 Outpatient Review

All HB's must have formally commissioned MDT diabetic foot clinics and pathways in line with NICE guidance NG19 and the "Joint Specialty Recommendations April 2016" (Annex.4). This must be part of a Multi-disciplinary foot care service (MDFS) with a dedicated clinical lead.

All Foot & Ankle outpatient clinics must be resourced with dedicated, appropriately trained nurses and plaster technicians to provide wound and plaster care management in co-located facilities.

Provision of a one stop Ultrasound and reporting service at the time of initial appointment will improve patient experience and reduce the requirement for follow up appointments.

It is recognised that the F&A subspecialty is reliant on multidisciplinary teams and specifically podiatry input. The multidisciplinary functioning of F&A outpatients needs an agreed service specification decided by the NFACRG to be implemented and funded locally by HB's or within a regional network.

National estate standards[1] for the provision of subspecialty F&A clinics should be adopted and implemented within HB's or within a regional network. The minimal expectation is provision of on-site X-rays working to national standardised protocols for F&A surgery.

Action 8: All HB's must commission either internally or regional an NG19 compliant Diabetic foot pathway.

Action 9: One stop F & A/ USS OPD services to be implemented in every HB.

Action 10: All HB's to provide F & A OPDs in line with national estate standards.

4.5 Diagnostics

Access to MSK USS and MRI is nationally compromised as per NCSOS report 2a.

Provision of a one stop USS and reporting service at the time of initial appointment will improve the patient experience and reduce the requirement for follow-up appointments.

Nationally agreed protocols for early MRI with appropriate radiology reporting for the diabetic foot must be deployed in every HB.

It is recognised that on horizon scanning, Weight bearing CT scanning may become more common practice/standard of care. It is recommended that the NFACRG take guidance from, and collaborate with BOFAS concerning this to identify the likely need to develop this service more widely.

Action 11: All HB's must commission early MRI pathways for the diabetic foot.

Action 12: NFACRG to collaborate with BOFAS to review the use of WBCT on horizon scanning.

4.6 Return OPD

See NCSOS Report 2a. General Recommendations.

4.7 Listing/Waiting for Surgery

A clinical prioritisation tool for foot and ankle should be developed as per NCSOS Report 2a generic recommendations. This will require a work-stream in the NFACRG.

All patients should have PROMS/PREMS inputted at all stages of the treatment pathway on the existing F&A registry (Amplitude). A standardised approach to this registry should be defined by the NFACRG.

Action 13: NFACRG to develop clinical prioritisation Tool in collaboration with other CRGs within the W.O.N.

4.8 Pre-Assessment

A multi-disciplinary process within PAC must be re-established in all HB's in order to recognise the importance of specific modifiable factors which may require particular sub-specialist attention in a patient undergoing F&A surgery e.g. smoking cessation, disease modifying therapy and corticosteroid in inflammatory arthropathy, diabetic control.

The majority of F&A surgery can be managed as a daycase procedure, and potentially through regional anaesthesia. All HB's should have systems in place which identify patients who may be able to undergo a less comprehensive pre-assessment as per GiRFT guidance (Annex 2). One of the main enablers for daycase surgery is ensuring delivery of care as local to the patient as possible so that there is time dependent support in case of a post-operative issue. Therefore, this is one of the factors amongst others outlined in this document and NCSOS Final Report 3 contributing to F&A surgery being performed where possible through a daycase network. There are a number of other social and medical enablers outlined in the Annex. Further, Cardiff & Vale UHB have developed a modified Pre-assessment booklet to support day surgery (Annex 5) which could be nationally rolled out through the W.O.N and NFACRG.

Action 14: Every HB must reinstate PAC with subspecialty MDT input.

Action 15: Every HB to implement systems that identify patients suitable for a streamlined PAC in line with GiRFT guidance and utilising the CAV PAC booklet.

4.9 Surgery

4.9.1 Future state

It is recognised that Foot & Ankle surgery is mainly Daycase, with some requirement for more medically complex beds and non-ring fenced environments for diabetic foot & infected cases. Systems that involve a network of such infrastructures will be required, in order to ensure equity of access to all procedures and for all patient groups across Wales. Liaison with MDT working including Diabetologists, Vascular surgeons, microbiology and radiology will be required. Daycase units must have appropriate therapy cover to ensure evening discharges, rather than requirement to convert patients placed last on operating list to be admitted.

4.9.2 Resource Requirements

Foot & Ankle theatres must be dedicated to Orthopaedic surgery, or at least clean surgical specialties. The unit must have a full range of implants, and not reliant on loan kit. The theatres must have access to a dedicated radiographer/ Image intensifier, and/or dedicated mini C-Arm.

All surgical procedures should be performed by, or under the supervision of a Consultant FRCS T & O specialising in Foot & Ankle. There are no dogmatic criteria on procedure numbers, but the surgeon must be able to demonstrate regular performance of specialised procedures through nationally standardised and regulated registry data, audit and formal governance processes for all Orthopaedics.

Action 16: Foot & Ankle theatres must be dedicated to Orthopaedic surgery, or at least clean surgical specialties, with a full range of implants, not reliant on loan kit. Theatres must have access to dedicated fluoroscopy.

Action 17: All daycase units must have evening physiotherapy cover.

Action 18: NFACRG monitoring of national Specialised F & A practice for assurance.

Action 19: All HB's to immediately provide theatre and bed capacity specifically for diabetic foot patients, either locally or through networked regional alliance.

4.10 Post-operative

Early identification of post-operative problems leads to best outcomes and patient experience; this is best delivered by a specific foot and ankle post-operative MDT working to a national specification developed by the NFACRG and implemented locally by HB's or as part of a regional network.

National estate standards[1] for the provision of sub-specialty F&A clinics should be adopted and implemented within HB's as discussed in Section 3.4.

Improving wound management must be addressed to ensure prompt secondary care referral. Nurses from primary care should be included within the post-operative MDT so that early recognition of a problematic post-operative wound within the community following discharge is achieved; this will improve training, quality and safety, and patient experience, through an integrated seamless pathway of care.

F & A wound and plaster care is essential to minimise potentially catastrophic yet avoidable complications. All secondary care F & A post-operative clinics must have a sustainable and experienced nursing and plaster technician workforce. The NFACRG should develop national minimum standard requirements.

A post-op pathway for non-weight bearing patients must be present in all HB's. This patient cohort rarely need enhanced medical input, but rather non specialist functional physiotherapy and nursing care whilst building up independence; this will improve bed utilisation for acutely unwell patients. A nationally developed workstream to review this unmet need and potential benefits realisation could be co-ordinated by the W.O.N.

Action 20: W.O.N and NFACRG to perform national review of the need for NWB beds and benefits realisation

Action 21: NFACRG to develop national minimum standard requirements for F & A post op OPD's.

Action 22: Primary care wound nurse to attend secondary care OPD's.

5 Specialised, non-specialised and procedure specific considerations

The NHSE specialised prescriber manual was reviewed by the Foot & Ankle CRG. It was recognised that whilst the terminology may be applicable for commissioning within the NHSE framework (and in turn may be of relevance if NHSW commissioning evolves), it is not fully practicable for clinical strategic planning.

The consensus of the CRG is that all Foot & Ankle procedures are *subspecialist*, including those that are categorised as non-*specialised*, and therefore should be performed by an Orthopaedic Surgeon with dedicated Foot & Ankle training. This will comprise of recognised Foot & Ankle fellowship training for prospective appointments, but recognising and respecting that in the current state, there are highly trained and experienced surgeons with a Foot & Ankle subspecialist interest who have not had formal fellowship training but who form an integral part of the national F&A Network.

The procedures beyond the commissioning terms appear to have fallen into three potential baskets.

a) Procedures that should be performed by all F&A surgeons and units.
b) Procedures that may need to be provided through local surgeon networks so that they can be delivered in all HB's.
c) Procedures that may need regional network collaboration, regional delivery units or both.

The table below sets out how this can be delivered for Foot & Ankle.

Delivery model	Procedure/ Pathway
All F & A surgeons locally	• Routine Foot surgery • Routine non-complex surgery of hind foot including fusions • Arthroscopies
HB network/ MDT	• Any major reconstructive arthroscopic procedure • Complex neurological deformity • Revision fusion of the hind foot
Regional	• Tertiary complex reconstruction of a forefoot following failed surgery • Tertiary element of an integrated diabetic foot system • Primary Ankle replacement and revision – in line with pending BOFAS recommendations
Other	• Complex post traumatic reconstruction requiring frames or multi-disciplinary input – Supraregional, needs formal commissioning • MACI – IPFR

Table 2. F&A CRG Procedure Analysis

Further detail on the outcome of the F&A CRG analysis by procedure can be found at (Annex6) attached.

Action 23: NFACRG to support and develop HB and regional networks for specific pathway and procedures in line with this document - Table 2.

Action 24: Complex lower limb reconstruction encompassing post trauma, complex foot and ankle deformity correction and frames requires a separate centrally commissioned service for NW and SW.

5.1 Network Considerations

NHSE is developing a networked approach through BOFAS, with end stage ankle arthritis/ TAR networks. This should be adopted in NHSW but to a broader scope to include all specialised, lower volume pathways for Foot and Ankle surgery as detailed above. Specifically, complex surgery for the diabetic foot and tertiary level revision forefoot surgery should be reviewed. These clinical networks should be developed and performance monitored through the proposed NFACRG, working as part of an overarching W.O.N.

Surgeons must be enabled to regionally work and support each other through this network with regional passports. This will ensure that these lower volume, but daycase procedures are still delivered with supervision of higher volume surgeons, whilst provided closer to the patient' home in order to facilitate safe local daycase discharge. This approach will also allow prospective collection of volume demand, activity and outcome data for these more complex pathways to support evolving networking models and enable the development of formal commissioning arrangements.

It is recommended that separate commissioning arrangements are developed for lower limb reconstruction and complex frame services. The CRG in principle advise that Morriston/SBU be considered to develop this service due to the co-located plastics service and growing teams of trauma reconstructive surgeons in the unit.

Regarding end stage ankle arthritis pathways, it is recommended to ensure minimum volumes, that one TAR surgeon be nominated in each HB. This will leave units fragile and exposed to sustainability issues, therefore it is our clear recommendation that all units must work regionally through MDT and the F&A network to ensure cross regional risk mitigation where required.

It is recognised that some clinicians may be part of multiple MDTs. In order not to overwhelm job plans, it is recommended that all subspecialty CRGs, working within a National Orthopaedic network, define service specifications for the required MDT and TOR to ensure maximal quality and efficiency/ performance.

Action 25: NFACRG and National FA network to be established as part of overarching W.O.N.

Action 26: End stage ankle arthritis networks must be deployed nationally through an overarching Orthopaedic network and aligned with principles of the BOFAS network. This NFACRG should define this further in Wales.

Action 27: NFACRG to define MDT minimum standards, TOR and resource requirements.

6 Consultant Workforce Review

There are currently 182 Consultant Surgeons working within Orthopaedic Directorates in Wales. Within this, there are 24 who have a declared subspecialist interest in Foot & Ankle surgery.

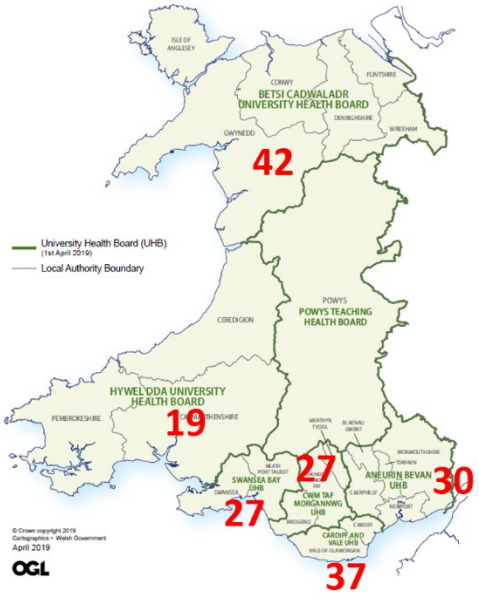

Fig. 1. Distribution of Orthopaedic Surgeons in Wales. (inc spines/paeds/trauma)

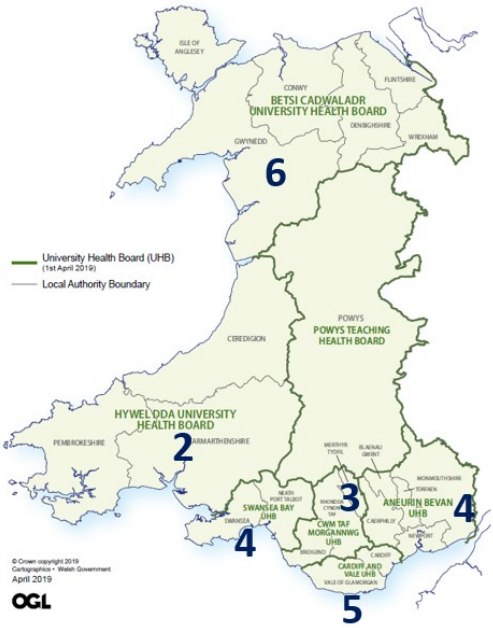

Fig.2. Distribution of Foot & Ankle Surgeons in Wales.

Fig 1 and 2 illustrate the national orthopaedic surgeons and foot and ankle surgeons establishment, respectively. There are potential fragilities in Hywel Dda with only two Foot & Ankle surgeons, one of whom is nearing retirement. Likewise, in Cwm Taf Morgannwg, whilst there are three Foot & Ankle surgeons, they all work in different Orthopaedic units and in silo.

A trainee survey is being conducted to horizon scan for future Foot and Ankle surgeons with an interest in working in NHSW. The output of this survey is included in the final report.

The table below demonstrates the number of surgeons per 100,000 population, together with number of foot and ankle surgeons the same, for each HB. The table also includes a 5 and 10-year horizon scan, taking into consideration potential retirements.

HB	Orthopaedic surgeon per 100,000 population	Foot & Ankle Surgeon per 100,000 population	0-5 yrs horizon Scanning	5-10 yrs horizon scanning
AB	5.0	0.7	0.3	0.2
BCU	6.0	0.9	0.9	0.9
CAV	7.3	1.0	0.8	0.8
CTM	6.0	0.7	0.7	0.4
HD	4.9	0.5	0.3	0.3
SB	6.9	1.0	0.5	0.3

Table 3. Orthopaedic surgeons per 100,000 population

7 Conclusion

This document represents the collaborative work of all the Foot & Ankle specialists in Wales, aggregated with existing UK guidance, to produce the best practice sub-specialist clinical pathways considered through the lens of the needs of the patient population throughout Wales.

The greatest concern however relates to the extraordinarily long Orthopaedic surgical waiting lists in NHSW that are increasingly causing patient harm, disability and massive healthcare inequality compared with patients residing in England. Foot and Ankle patients are having to live with severe pain, stiffness and loss of function/ambulation. In severe cases, delays to management can result in loss of limb.

Whilst there are existing multidisciplinary integrated Foot & Ankle pathways in most HB's, these are limited to very specific pathologies with significant variation of availability and implementation across the nation. Comprehensive service specifications for nationally standardised pathways in line with the recommendations of this document must be commissioned. It is recommended that Podiatry services are embedded within these pathways at Primary care, triaging, secondary and tertiary

care clinics. The role of the triage & treat services is less clear for Foot & Ankle surgery. It is recommended that this is urgently reviewed with a view to considering specific Foot & Ankle trained APPs to supplement the Podiatry roles across the pathway and improve the quality of primary care assessments and referrals.

The geographical spread, demand, high turnover and daycase model of a large proportion of Foot & Ankle surgery will necessitate every HB to provide at least the less complex element of this service for its patient population.

More complex low volume procedures as outlined above require regionalisation within the structure of an agreed sub-specialty network.

It is required that these recommendations be integrated with the other subspecialty CRG recommendations and implemented as part of a national approach to transform musculoskeletal services to deliver high quality patient care adhering to prudent and value based principles. The final NCSOS report 3 “The National Blueprint for the delivery of Orthopaedic Surgery in Wales” details this integrated service model.

NCSOS report 3 will also detail a proposed structure for a centrally commissioned and appropriately resourced Welsh Orthopaedic Network, under which multidisciplinary subspecialty CRGs function. This structure will be integral to delivering the scope of change required at clinical and delivery network level across the entire Foot & Ankle pathway and the Orthopaedic system as a whole.

8. Summary Key Actions F&A (Annex 8)

9. Acknowledgements

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10. Appendices

Annex 1 **BOFAS guidelines**	BOFAS Pathways 2.pdf BOFAS Flatfoot Commissioning guic
Annex 2 **GiRFT guideline End Stage Ankle Arthritis**	BOFAS GIRFT TAR.pdf
Annex 3 **Best practice guidelines SBU**	QI paper.pdf SMART.pdf CID3284 Morton's Neuroma Pathway - CID954 Chronic Mid Body Achilles Tendir CID3044 Tibialis Posterior Tendon D
Annex 4 **NICE guidance NG19 and the "Joint Specialty Recommendations April 2016"**	diabetic-foot-problems-prevention-and DiabeticFoot FINAL.pdf
Annex 5 **GiRFT daycase guidance**	National-Day-Surgery-Delivery-Pack_Aug
Annex 6 **C&V Pre-assessment booklet**	Awaiting Copy
Annex 7 **F&A CRG procedure analysis**	Annex 7 F&A CRG procedure analysis.c

Annex 8 Key Recommendations/Actions	NCSOS Report 2f Foot_Ankle Annex 8

11. References

1. HBN_12, NHS Estates Out-Patients Department, Department of Health
2. Ankle Arthritis Networking: getting the right treatment to the right person first time (Elsevier:Stephen Bendell;Paul Halliwell;Andrew Goldberg;Andrew Robinson)
3. The influence of smoking on foot and ankle surgery: a review of the literature - PubMed (nih.gov)