National Clinical Strategy for Orthopaedics (NCSOS) Report 2d - Guidelines and Recommendations Hip Surgery

1. Executive Summary

Hip surgery is one of the higher volume Orthopaedic subspecialties, both in terms of referral volumes and surgical time in theatre.

There are existing national and specialist society best practice pathway guidelines that are not integrated uniformly across Wales. This document provides recommendations on how these pathways and guidelines 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 Hip Clinical Reference Group (NHCRG) 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 NHCRG and W.O.N will be discussed further in NCSOS report 3.

The whole Hip 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 arthroplasty practitioners and allied health professionals 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. 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 rooms for allied health professionals and to allow dual consultant clinics 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 NHCRG and W.O.N.

Hip surgery is predominately in-patient based and requires an appropriate bed base within an elective ring fenced unit with fully trained theatre staff, laminar flow theatres and full range of implants. These units should be specified for HVLC processes and encourage same day admission and discharge. Alongside this is a need for suitably resourced day case units for a small proportion of hip arthroscopy and a more complex pathway for hip preservation that requires a regional approach. 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 Hip 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. Hip Surgery - Methodology

This document has been developed in conjunction with the national sub-specialty Hip clinical reference group (NHCRG), 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 Hip Society (BHS) (Annex1).

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.

- Primary Care
- Initial Triage
- Pre-Hospital intervention
- OPD review
- Diagnostics
- Return OPD
- Listing/ Waiting for Surgery
- Pre-Assessment
- Surgery
- Post-operative

Section 5 details the NHS England (NHSE) commissioning classifications of Specialised and non-specialised hip surgical procedures. The Hip 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 Hip 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 NHCRG are at (Annex4) attached.

4. Identified National pathway issues for Hip surgery

4.1 Primary care

Attempts at conservative treatment must have been made for at least 3-6 months, depending on pathology specific guidance.

In addition to the generic minimum referral dataset outlined in NCSOS report 2a, specific Hip sub-specialty referral information, as determined by the Hip CRG, should be provided to facilitate triage decisions.

Patients who fail to respond to non-operative management should be referred for weight bearing plain radiographs of the hip prior to referral.

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

Action 2: Plain radiographs of the hip must be requested prior to referral and radiological reports provided according to sub-specialist CRG requirements for young adult hip/hip preservation pathology.

4.2 Initial triage

An MDT triage system including APP's with a specific expertise in management of hip conditions, arthroplasty ANP and subspecialist consultant(s) should be employed by all HB's.

All patients accepted to secondary care should be placed on the National Joint Registry where appropriate.

Action 3: An MDT triage should be implemented at early stage of pathway.

Action 4: All patients should be placed on the National Joint Registry where appropriate.

4.3 Pre-hospital intervention

We recommend that CMATS/MCAS practitioners have specific roles in the MDT triage & treatment of hip referrals in line with recommendations made above. This could involve assessment of patients' suitability for hip surgery prior to referral and application of prehabilitation programs.

Action 5: HB's should ensure adequate provision of CMATS/MCAS/AHP at MDT triage and across hip pathway to improve patient assessment, patient selection and prehabilitation.

4.4 Outpatient Review

Initial outpatient appointment should be provided F2F and recognised as the gold standard. First outpatient should be an MDT clinic which includes an APP and/or an ANP in lower limb arthroplasty. Consideration should be given wherever possible to promote co-location of consultants into a single HB hip arthroplasty clinic to facilitate MDT working.

All patients should have PREMS, PROMS at all stages of the treatment pathway as per recommendations above, and an appropriate national PROMS and PREMS platform, embedded within the digital MSK pathway should be commissioned.

Action 6: All OPD should be multi-disciplinary to include APP/AHP/Hip arthroplasty practitioner alongside sub specialty consultant.

Action 7: Joint consultant clinics should be employed wherever possible to promote regional hip network MDT.

4.5 Diagnostics

Standardised imaging protocols should be embedded within an interactive integrated MSK pathway with all radiographs completed prior to first outpatient review and performed within six months of OPD review. Young adult hip diagnostics needs specific attention and protocol development through its clinical subnetwork group working within the NHCRG.

Regular interactions between MSK radiology and MSK clinicians within a regular HB or regional MDT is essential. For patients with young adult hip pathology this is essential to ensure good radiological practice and standardisation across HB's (including those without a Young Adult hip surgical service).

Arthroplasty MDT must include microbiology support.

Action 8: Microbiological support must be available for all HB and regional MDT.

Action 9: Standardise imaging and reporting protocols for young adult hip pathology.

4.6 Return OPD

We recommend that the majority of follow up appointments should be virtual where clinically appropriate, with standardised national follow up protocols agreed by sub-specialist CRG.

Initial post-operative review of joint replacements should be undertaken by a specialist AHP working within an MDT setting with availability to access immediate consultant review.

The long-term follow-up of joint replacement should be undertaken virtually utilising a digital platform with automatic agreed imaging surveillance and automatic collection of PROMS and PREMS.

Action 10: Virtual long term FUP where applicable with automated imaging and PROMS collection

4.7 Listing/ Waiting for Surgery

Multifactorial national clinical prioritisation methods should be employed as per NCSOS Report 2a Generic recommendations; this will require a national workstream in the hip sub-specialty CRG.

Provision of joint schools for all patients listed for joint replacement surgery must be available in all HB's and provided to a national standard agreed by Hip CRG, but implemented and resourced locally. A dogmatic centrally driven format or approach to the delivery of joint schools will undermine existing successful programs already in place and should be discouraged.

All patients should have PROMS/PREMS at all stages of the treatment pathway and be placed on the Hip registry.

Action 11: Provision of nationally agreed template joint school in each HB.

Action 12: All patients to be placed on NJR.

Action 13: NHCRG 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 to recognise the importance of specific modifiable factors which may require particular sub-specialist attention in a patient undergoing hip surgery, eg. smoking cessation, disease modifying therapy and corticosteroid in inflammatory arthropathy, diabetic control.

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

4.9 Surgery

4.9.1 Future state

Hip surgery is mainly Inpatient, which should be provided within a ring fenced elective facility. The concept of high volume low complexity (HVLC) surgery as a means of ensuring maximum utilisation of theatre lists must be strongly embraced within NHS Wales.

Each HVLC unit should aim to deliver a significant proportion of primary arthroplasty with intended same day discharge. Whilst there is a national push championed by GiRFT for same day discharge rates, it is recognised that in Wales there are geographical challenges that will lead to regional variation, however interventions to reduced length of stay must be implemented nationally (Annex2).

Identifying and developing appropriate infrastructural configuration for patients requiring low volume high complexity (LVHC) surgery is a challenging task. Such facilities will require careful consideration of out of hours medical and surgical supervision as well as the need for provision of monitored beds and/or HDU/PACU provision and transfer arrangements to level 3 critical care setting. It is unlikely we will return to the pre-pandemic state of LVHC procedures being performed at very low volume in every acute site. Specific sites will need to be identified to care for these patient cohorts and may be dependent on whether the patient is surgically complex e.g. infected arthroplasty, or surgically straightforward but medically complex. This will be considered within the NCSOS Final Report 3 *"The National Blueprint for Orthopaedic Surgical Delivery in Wales*".

However, there is a requirement for more medically complex beds for some trauma presentations particularly peri-prosthetic fractures[1] with associated orthogeriatric support to be provided within at least one site in each HB. This patient cohort will

be high-risk transfers if these services are “over-centralised”. This may necessitate clinical networking so that consultants with the appropriate expertise can move with ease between sites to deliver this care.

Therefore, 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. Complex arthroplasty and revision work underpins routine arthroplasty work and a solid foundation for complex arthroplasty service provision is required. It is therefore a key recommendation that appropriate pathways for this cohort must be provided alongside pathways for more routine arthroplasty.

Consideration also needs to be given to the long-term potential for the anticipated increased volume of day case arthroplasty.

Action 15: All HB’s to work towards same day discharge for primary arthroplasty if appropriate.

Action 16: Equitable access to HVLC and LVHC capacity irrespective of HB/Region.

4.9.2 Resource requirements

Theatre complexes must be dedicated to orthopaedic surgery and be laminar flow, with a full range of implants, and not reliant on loan kit. Implant utilisation should be critically appraised so that only 10a ODEP rated implants are utilised and wherever possible clinical agreement should be sought to rationalise implant selection.

All surgical procedures should be performed by, or under the supervision of a Consultant FRCS T & O specialising in Hip surgery. Medically complex patients and those with peri-prosthetic fractures require orthogeriatric or dedicated senior medical supervision and MDT approach to a similar standard to those expected for patients with hip fracture.

Revision hip surgery should be rationalised and regionalised as per GiRFT principles to ensure critical volumes and best outcomes. Consultant level fragilities in some HB’s in terms of revision hip arthroplasty should lead to collaboration to provide services on a whole HB level rather than silo working.

Where necessary, HB’s should also form regional alliances with neighbouring HB’s. Regional “passports” should be developed to allow surgeons to work across sites and HB’s.

Action 17: All hip procedures should be undertaken in a Laminar flow theatre within an orthopaedic theatre complex.

Action 18: Implant standardisation to 10A rated implants and clinically appropriate rationalisation.

Action 19: Provision of medically complex beds for some trauma presentations, particularly peri-prosthetic fractures with associated orthogeriatric support must be provided within at least one site in each HB.

4.10 Post-operative

Inpatient wards must have extended long day and seven-day therapy provision to encourage prompt mobilisation and discharge. Processes to promote same day discharge must be provided, including a regionalised out-reach service for post-operative pain and mobility management. There must be clear criteria in place to facilitate nurse led discharge.

Action 20: All HB's to provide seven-day physiotherapy.

5. Specialised, non-specialised and procedure specific considerations.

The NHSE specialised prescriber manual was reviewed by the Hip Surgery 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 usable for clinical strategic planning.

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

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

a) Procedures that should be performed by all Hip 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 Hip.

Delivery model	Procedure/ Pathway
All Hip surgeons locally	• Primary Joint replacement
HB network/ MDT	• Complex primary joint replacement • THR requiring Modular prosthesis
Regional	• Hip arthroscopy • Hip preservation surgery • All revision hip surgery • Massive acetabular defects requiring bone grafting or metal augment
Other	• Peri-acetabular osteotomy (Supra-regional) • complex femoral reconstructive segmental reconstruction (Supra-regional)

Table 2. Hip CRG Procedure Analysis

Further detail on the outcome of the Hip CRG analysis by procedure can be found at (Annex 3) attached.

Action 21: All Wales best practice hip pathways should be developed by the CRG and embedded nationally.

Action 22: The Hip and Knee CRG to collaborate and develop national same-day arthroplasty pathways utilising existing best practice already functioning in some HB's (BCU & CTM).

5.1 Network Considerations

A formalised hip network requires several different elements encompassing an agreed MDT structure which would include allocated DCC within job plans and administrative support. Three MDTs are recommended below -

(i) Hip preservation network and CRG to formulate referral criteria, minimum datasets, imaging reporting requirements and MDT triage at an early stage of pathway to reduce inefficient referral pathways. This would be supported by a lead hip preservation physiotherapist within each HB. A South Wales and a North Wales network would be established which would meet at MDT monthly with a national MDT annually. The number of surgeons providing hip arthroscopy and the procedure volumes mean that the service is already robust in NW and SW. Low volumes of osteotomy and hip preservation surgery overall lends itself to a single centre two surgeon model in SW and continued provision at RJAH via specific SLA in NW, although a single national provider based in SW could be considered.

(ii) Complex arthroplasty network to include infected revision arthroplasty based on work already undertaken by British Hip Society (BHS) (Annex 1). This would involve the formation of 2 revision hubs in South Wales (East and West) and a single revision hub in North Wales with surgeons from different HB's working within each hub in SW and working collectively in NW. This will require consultant passport/contractual arrangements and agreements on dual consultant operating to be in place. Monthly complex arthroplasty MDT with microbiology support would be in place at each hub and an annual national MDT with review of outcomes and KPI's.

(iii) Routine arthroplasty planning and review sessions which would occur weekly in each unit and should be HB wide. All planned cases and all post op x-rays to be reviewed with identification of complex cases which could be discussed in regional MDT.

It is recognised that some clinician 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 23: Regional networks to be developed for revision, infection, complex arthroplasty and hip preservation within the NHCRG and recognised within DCC activity in job plans.

6 Consultant Workforce Review

There are currently 182 Consultant Surgeons working within Orthopaedic Directorates in Wales. Within this, there are 67 who report a declared hip sub-specialty interest, 8

only practice hip surgery (7 in CAV), 1 is a general Orthopaedic surgeon, with the remaining 58 surgeons specialising in Hip and Knee surgery.

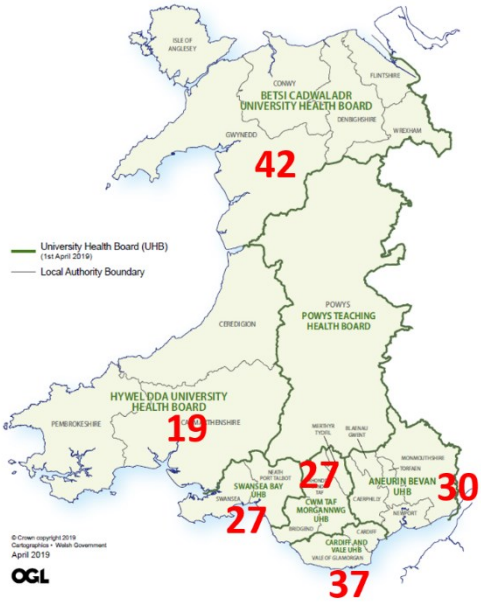

Fig. 1. Distribution of Orthopaedic Surgeons in Wales. (inc spines/paeds/trauma)

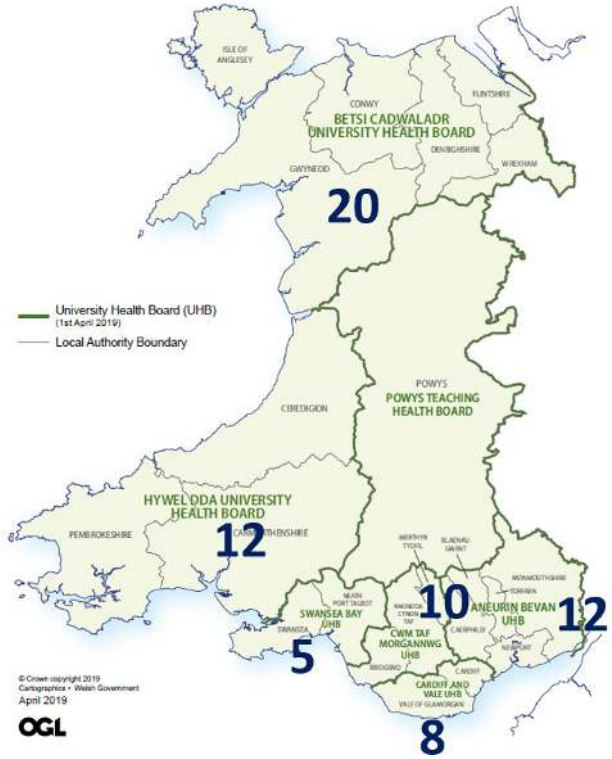

Fig.2. Distribution of Hip Surgeons in Wales.

Fig 1 and 2 illustrate the national orthopaedic surgeons and hip surgeons establishment, respectively (note that some Surgeons have more than one subspecialist interest hence this data is only reflective of available consultant skill set,

not available time). There are potential fragilities in some HB's in terms of revision volumes and silo working.

A trainee survey is being conducted to horizon scan for future hip 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 hip 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	Hip Surgeon per 100,000 population	0-5 yrs horizon scanning	5-10 yrs horizon scanning
AB	5.0	2.0	1.8	1.7
BC	6.0	2.8	2.7	2.6
CAV	7.3	1.6	1.6	1.2
CTM	6.0	2.2	2.2	1.8
HD	4.9	3.1	2.8	2.6
SB	6.9	1.3	1.3	1.3

Table 3. No of orthopaedic surgeons per 100,000 population

7 Conclusion

This document represents the collaborative work of all the hip 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[1], disability and massive healthcare inequality compared with patients residing in England. Whilst difficult to evidence, many clinicians report that patients with hip pathology have deteriorated to such an extent that the progression of their condition and associated deformity means that many individuals face much more complex surgery at a far higher risk of poor outcomes and potentially catastrophic complications, as a result of this continued delay.

In producing sub-specialty level pathways collaboratively with surgical colleagues across Wales, it is hoped that these can be implemented as part of a multidisciplinary, national approach to transform musculoskeletal services and ensure appropriate and evidence based utilisation of clinical resources and thus improve patient care. This will require a fully resourced MSK network embedded with the NHS executive structure and in line with the National Clinical Framework.

Primary Hip Arthroplasty surgery lends itself to HVLC concepts and these pathways must be adopted within Wales to maximise efficiency and reduce variation in standards of care. This will require a network of cold elective orthopaedic sites. However, a safe level of provision within each HB or region for LVHC patient groups must be part of this delivery network. This will require utilising a combination of elective cold and acute site infrastructure to ensure essential interdependencies are available. This will be defined in the NCSOS final report 3 "The National Blueprint for the delivery of Orthopaedic Surgery in Wales".

It is required that the recommendations of this subspecialty report 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 healthcare principles. The final NCSOS report 3 "The National Blueprint for the delivery of Orthopaedic Surgery in Wales" details this integrated service model.

8. Summary Key Actions Hip (Annex4)

9. Acknowledgements

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10 Appendices

Annex 1 **BHS Best Practice**	BHSSS-for-Peri-operative-care.docx BHSSS-for-Revision-for-Aseptic-Looseni BHSSS-BOAST-for-Revision-for-Periprost BHSSS-for-Revision-for-Instability.pdf BHSSS-for-Revision-Hip-MDT-IT-Suppor BHSSS-for-MDT-Working.pdf
Annex 2 **GiRFT Best Practice**	best-practice-hip-23july19c.pdf
Annex 3 **Hip CRG procedure Analysis**	Annex 4 Hip CRG Procedure Analysis.c
Annex 4 **Key Actions Hip CRG**	NCSOS Report 2d Annex 5 Summary Ke

11 References

[1]The number of patients “worse than death” while waiting for a hip or knee arthroplasty has nearly doubled during the COVID-19 pandemic a UK nationwide survey
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