NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

EARLY VALUE ASSESSMENT PROGRAMME

Equality impact assessment: guidance development

GID-HTE10043 Robotic-assisted surgery for orthopaedic procedures: early value assessment

The impact on equality has been assessed during this early value assessment (EVA) according to the principles of the NICE Equality scheme.

Draft guidance consultation

1. Have the potential equality issues identified during the scoping process been addressed by the committee, and, if so, how?
The committee thoroughly considered the potential equality issues that were identified during scoping. Key issues included: • Access to robot-assisted surgery (RAS). Robotic platforms are expensive. If the use of robotic systems is limited to larger hospitals, which have more resources to procure and maintain the system and are more likely to have the staff needed to use the system, access to RAS may exacerbate existing regional inequalities (Morton et al., 2024). The committee discussed this issue, noting that RAS is more likely to be cost-effective in high-volume centres that are often centrally located. This may increase the distance an individual has to travel to receive RAS. The committee concluded that whilst efforts should be made to monitor national uptake of RAS, centralisation is not an issue unique to orthopaedics. The NHS England steering group are actively working to monitor the uptake of RAS in the UK across all surgical areas to mitigate the centralisation of resources. • Improving outcomes in less experienced surgeons. A key potential benefit of RAS is that it allows better pre-operative planning, resulting in an individualised approach for the patient with more accurate and precise implant placement. This enhanced planning may be particularly beneficial for

low-volume surgeons or those with less experience. The committee discussed this issue but noted that low-volume surgeons are less likely to get access to RAS because of the economic viability of adoption in low-volume centres. Whilst this benefit was not deemed to be specific to less experienced surgeons, the committee were confident that the enhanced planning could feasibly improve outcomes for patients, regardless of surgeon experience.

- People who are at higher surgical risk such as those who are older, have a high body mass index (BMI), or with multiple comorbidities, may benefit the most from RAS. RAS allows enhanced pre-operative planning, and more precise placement of the implant, which may be beneficial in more complex cases where conventional surgery is more challenging. This benefit may also be realised in people from a Southeast Asian background in whom bow-leggedness is more common, often making implant placement more difficult with conventional surgery. The committee discussed this issue but noted that complex cases are more likely to be done in specialist lower volume centres. Given the commonality of volume-based contracts, where higher annual procedure volumes attract lower per patient costs, it is unlikely that low volume centres will have access to RAS in the immediate future. RAS is instead more likely to be adopted in high-volume elective centres. This means that despite being potentially more likely to benefit from RAS, complex cases done in low volume centres are unlikely to be done using RAS. Conventional surgery remains a treatment option when RAS is not available.

- Reduced physical and cognitive burden on surgeons, and potential for increased diversity of orthopaedic surgeons. The potential impact of using RAS on surgeons was discussed by the committee. There was no consensus that it reduced the physical or cognitive burden or that it would have an impact on the career choice of potential orthopaedic surgeons.

2. Have any other potential equality issues been highlighted in the company's submission, or patient and carer organisation questionnaires, and, if so, how has the committee addressed these?

The EAG identified additional equality issues in the external assessment report, including:

- Accessibility issues for robotic platforms that require pre-operative CT scanning. This is relevant to people who are pregnant, have allergies, have kidney disorders and those with pre-existing metal implants. The committee discussed this and deemed this to be a minor consideration as the majority of the robotic platforms in scope do not require pre-operative CT scanning. There is a potential barrier to accessing RAS if the centre an individual is referred to has a CT-scan-requiring technology. Conventional surgery will remain an option for people ineligible for CT-scan-requiring technologies, or referral to another centre with a non-CT-scan-requiring technology may be possible if RAS is deemed to be more appropriate. Centres should consider the CT-scan requirements when purchasing a technology.

- Inaccessibility to RAS for some people with mental or neuromuscular conditions that affect control of the knee joint, or insufficient bone quality/mass to allow fixation of sensors. Also, inaccessibility for some people with conditions that prevent full articulation of the hip joint, which is required for the robotic platform to register the bone prior to surgery. The committee discussed these barriers to access but noted that similar considerations would be made before doing conventional surgery and that they are not specific to RAS.

- Potential for greater benefits of RAS in the Southeast Asian population due to a high prevalence of lateral bowing (bow leggedness) that may contribute to poor implant positioning with conventional surgery. RAS could benefit this population through its ability to enhance pre-operative planning, facilitating improved precision and alignment of the implant. This was discussed by the committee who anecdotally mentioned studies done in Asia that showed greater benefits of RAS than those seen in the evidence prioritised in the external assessment report.

- Large uptake of RAS in private hospitals. Whilst this issue is not directly relevant to, or resolvable by the NHS, disparity between the NHS and private sectors use of RAS may contribute to widening health inequalities.

3. Have any other potential equality issues been identified by the committee and, if so, how has the committee addressed these?
No additional equality issues or considerations were identified by the committee.

4. Do the preliminary recommendations make it more difficult in practice for a specific group to access the technology compared with other groups? If so, what are the barriers to or difficulties with access for the specific group?
RAS may not be suitable for all people. People with mental or neuromuscular conditions that affect control of the knee joint, or with conditions that prevent full articulation of the hip joint may not be able to undergo RAS. People that are contraindicated to CT scans will not be able to access RAS with some robotic platforms that require pre-operative imaging.

5. Is there potential for the preliminary recommendations to have an adverse impact on people with disabilities because of something that is a consequence of the disability?
No. Conventional surgery will continue to be the main surgical method used in the NHS. The conditional recommendation in the guidance supports the use of RAS when available and appropriate for the individual in order to generate further evidence.

6. Are there any recommendations or explanations that the committee could make to remove or alleviate barriers to, or difficulties with access identified in questions 4 or 5, or otherwise fulfil NICE’s obligations to promote equality?
Access to RAS for people with mental, neurological or bone quality conditions may be improved with future technology developments. The committee have included monitoring the national distribution of RAS in the evidence generation plan to

mitigate geographical inequalities. The NHS England steering group is actively working to monitor the national uptake of RAS in an attempt to mitigate the centralisation of the technology.

1. Have the committee's considerations of equality issues been described in the medical technology consultation document, and, if so, where?
Yes, these have been discussed in sections 3.6 and 3.7 of the draft guidance.

Approved by Associate Director: E. Eaton Turner

Date: 20/03/2025