

Hip and knee replacements: Should we follow them up?

A survey of orthopaedic health professionals.

Keywords: arthroplasty, follow-up, survey, orthopaedic professionals

Background

The use of hip and knee arthroplasty as an effective surgical procedure to alleviate chronic joint pain and improve functional ability has revolutionised the treatment of degenerative joint disease. Approximately 160,000 hip and knee arthroplasties take place in the UK every year and there are annual increases in the number of arthroplasties performed worldwide (National Joint Registry, 2018; Lovelock and Broughton, 2018). Most will remain in situ for the lifetime of the patient but 10% of implants will require further surgery, increasing to 30% in those under 50 years old at primary surgery. The National Institute for Clinical Excellence (NICE, 2019) provide guidance for commissioners and suggest that hip and knee arthroplasty patients should be followed up in the first year, once at seven years and three yearly thereafter in asymptomatic patients (British Hip Society et al, 2017). However, recent work suggests that many centres across the UK are reducing follow-up services to short-term only, although without the evidence-base for disinvestment (Smith 2014; Abrahams et al 2006). The orthopaedic literature makes frequent references to follow-up but evidence for the effectiveness of these services and current pathways is under review (Czoski Murray et al 2017; Smith et al 2019).

New methods of follow-up are being investigated using “virtual clinics”, which utilise technology to assess a patient without the need for a face-to-face interaction with health professionals (Marsh et al, 2014^a; Wood et al, 2011). Marsh et al, 2014^a and Wood et al, 2011, examined the feasibility of virtual clinics used a web-based questionnaire followed by a radiograph. Both studies found these methods resulted in fewer appointments compared to the usual “in-person” orthopaedic clinics, and Marsh et al (2014^b) found the virtual clinic had a lower cost per patient compared with in-person follow up.

In the UK, the orthopaedic community has been supporting the development of arthroplasty practitioners (predominantly physiotherapists, orthopaedic nurses or surgical care practitioners with advanced skills) for more than ten years (<http://www.acpa-uk.net>; Skills for Health 2014). Guidelines for follow-up, including the use of arthroplasty practitioners, are provided through the British Orthopaedic Association (British Hip Society et al, 2017). Walton et al (2008) evaluated a physiotherapy-led arthroplasty follow-up clinic and demonstrated they were able to see large numbers of patients effectively thereby enabling the orthopaedic consultant to see two additional new patients a week. The current economic climate challenges many health services and in addition, the introduction of local Sustainability and Transformation Plans (STPs) means that any changes must be consistent with the local STP. These five-year plans cover all aspects of NHS spending in England and are developed by NHS organisations and local councils working together in 44 geographical areas. The STPs aims are to improve quality and develop new models of care; improve health and wellbeing; and improve efficiency of NHS services.

The aim of this study was to collect evidence of the current view of arthroplasty follow-up services after hip or knee replacement. The objectives were to ascertain if there is support in the orthopaedic community for these services, to find out if there is a preference for the way these services are delivered and to determine if orthopaedic health professionals were aware of their local health plans for sustainability and transformation in view of the effect on future services.

Methods

A short survey was distributed at the British Hip Society (BHS) and British Association for Surgery of the Knee (BASK) 2018 annual scientific meetings with the agreement of their executive committees. These conferences attracted around 200 delegates each - surgeons, researchers, arthroplasty practitioners and other allied health professionals. Ethical approval for the study was granted by the Faculty of Health and Applied Sciences Research Ethics Committee at the University of the West of

England. All attendees were eligible for the study, thus sample size was dependent on the number of attendees at the designated conference session and their willingness to participate. Delegates at the conference were under no pressure to complete the survey and consequently, consent was implied by return of a completed questionnaire.

The questionnaire was specifically designed by two of the authors (LS, ED) and informed by the recent changes in arthroplasty follow-up and the introduction of STPs in the NHS. It consisted of three questions with options of adding free text if desired (see Appendix).

The numerical data was summarised using descriptive statistics (AR) and is presented graphically. Freehand comments were exported into Microsoft Excel where codes were developed for each comment and a descriptive summary of the freehand comments was developed. To improve the trustworthiness of the analysis, findings were discussed between two authors, providing a “critical friend” to assist the primary researcher to explore their inclinations for certain kinds of evidence, interpretation and explanation and to consider alternatives (Norris, 1997; Soundy et al, 2010).

Results

Sixty-one attendees at the BHS and one-hundred-and-eleven attendees at the BASK annual conferences completed surveys, with professional designation as shown (Table 1) and time since qualification from zero to 42 years.

Table 1. Participant demographics

Profession	Number of participants
Surgeon	150
Allied Health Professional	13
Nurse	1
Other	8

Quantitative data from the questionnaire is presented in Figures 1-3. Results showed that 87% of healthcare professionals at the BHS (hips) and 78% at BASK (knees) supported long-term follow-up by the orthopaedic community, with 33% stating that changes are needed in the intervals for review and age limits as recommended in the current NICE guidelines.

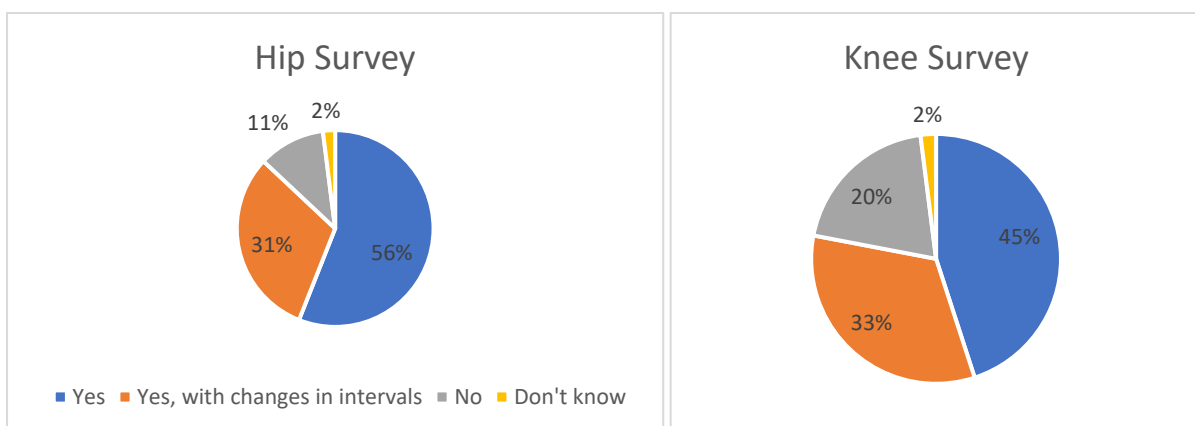


Figure 1. Results from Question 1: As a member of the health professions, do you think that the orthopaedic community should adhere to these guidelines?

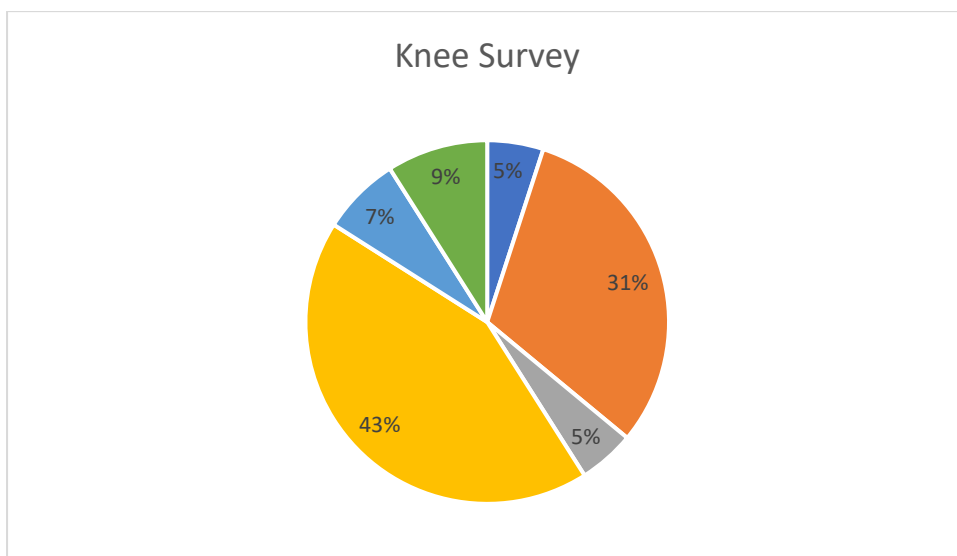
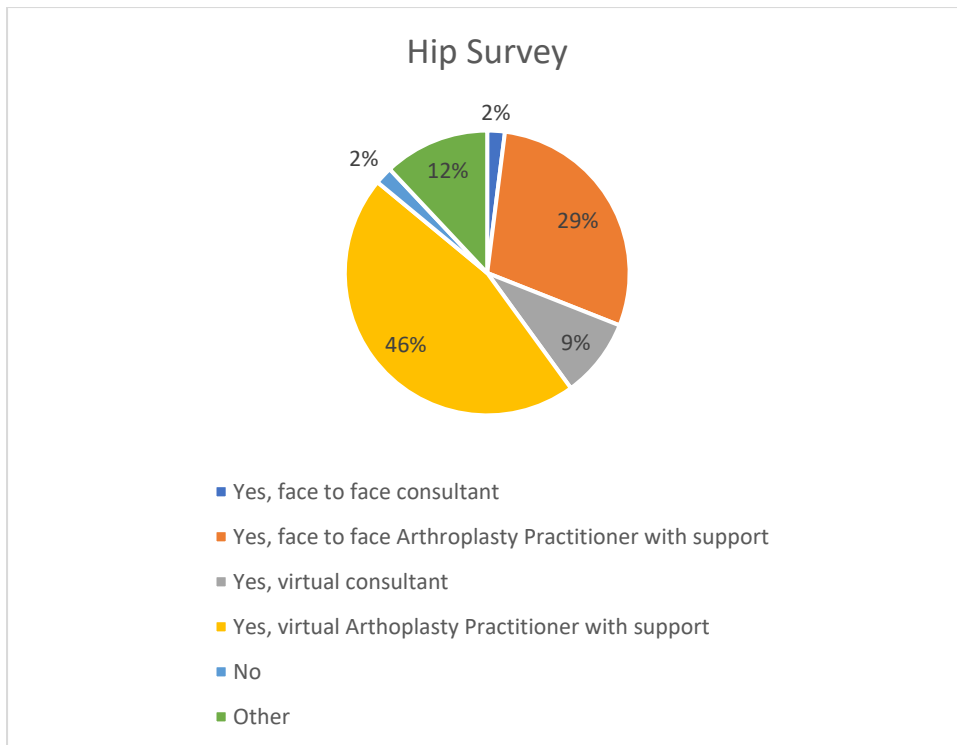


Figure 2 Results from Question 2: As a member of the health professions, would you support any type of long-term arthroplasty surveillance?

Analysis of free text

There were several comments on the relevance of age of a patient. Some surgeons felt that follow-up should be different depending on the age of the patient and others disagreed, illustrated by the following text:

“There needs to be flexibility as not all patients are similar, i.e. not appropriate for elderly”

“Long term follow-up for patients under 65 only”

“All the THRs should be followed up for the life of the implant, regardless of patient age”.

The financial implication of long-term follow-up was mentioned in some of the comments, as illustrated:

“I discharge all patients at 1-year as no facility/resources to follow-up patients long-term”

“I am honestly not sure that it (NICE recommendation) is the best use of NHS funds”.

There were varied comments on the intervals at which follow-up should be provided, shown by the following:

“All seen at 1-year”

“We see at 1-year, 7-years, 12-years....”

“see at 1, 3, 7 and 10 years”

“see for 2-years with virtual follow-up only after”.

When asked if they would support any type of long-term arthroplasty surveillance 74% of respondents were in favour of using arthroplasty practitioner services with the majority of these preferring a virtual arthroplasty practitioner service. Several respondents at the BASK conference, which is focussed on knee surgery, were keen to utilise General Practitioners (GPs) for patient follow-up:

“GP follow-up with guidelines is very similar to virtual clinics

“a GP with specialist interest”

Of the survey respondents, 47% were aware of their local STP and 39% reported that their answers were consistent with the plan.

Discussion

Among the health professionals in this study, there was a consensus supporting arthroplasty surveillance; however, many wanted changes to the current guidelines. Several reported that surveillance should be targeted towards younger patients. In a study by Bayliss et al (2017), implant survival analysis was conducted on 117434 patients who had undergone total hip or total knee replacement and had been followed for a maximum of 20 years. They found that younger patients (less than 70 years) undergoing surgery for a joint replacement had an increased lifetime risk of revision when compared to the oft quoted 10% risk. For example, men aged 50-54 years had a lifetime risk of revision of 29.6% for hip and 35% for knee replacement. The 15th annual report from the National Joint Registry UK (National Joint Registry, 2018) reported that, for patients aged 55-64 at primary surgery, the risk of hip replacement revision at 14 years post-surgery was 9.03% for men and 9.39% for women. For knee replacement revision, the risk was 8.97% for men and 7.9% for women.

Some of the survey respondents commented on the cost of following up patients as regularly as suggested in the current guidelines. Many felt their hospital did not have the resources to offer such a service and one surgeon stressed that this was not the best use of NHS money. Bolz et al (2010) carried out a study looking at the cost-effectiveness of routine follow-up after total hip arthroplasty in Australia. They used a decision-analytic model to compare the costs and health outcomes of three different follow-up approaches; 2-yearly routine follow-up, follow-up at 3-months and at 1 to 2 years and no follow up for 7-years. The latter showed cost savings of between AU\$6.5 and \$11.9 million. However, this study only examined costs up to 7-years and did not include information on how many patients would be affected long-term (10-years and beyond) by no follow-up.

One method to reduce pressure on healthcare resources is to use arthroplasty practitioners and, in this study, 74% of participants were in favour. In the UK, Walton et al (2008) evaluated an arthroplasty follow-up clinic run by physiotherapists and demonstrated they were able to see large numbers of patients effectively. However, cost savings estimated at that time were minimal when compared to a consultant-led clinic. In Australia, Harding et al (2018) used advanced musculoskeletal physiotherapists and found greater cost savings, as well as increased access to care, with an additional 3053 appointments available to patients. Patients reported high satisfaction with the experience of being cared for by the physiotherapists.

In this study, over half of the participants were in favour of using virtual clinics for arthroplasty follow-up. In a study by Marsh et al (2014), the feasibility of virtual clinics using a web-based follow-up was explored. Patients attended a local radiology facility and then completed an online questionnaire at home. Results showed clinical effectiveness, and significant lower direct cost and time requirements compared to in-person clinic appointments. Buvik et al (2016) found similar results for clinical effectiveness, although they did not evaluate costs. The patient attended for x-ray locally, followed by a videoconference with the consultant during which the patient was accompanied by a trained nurse. Results showed that neither surgeons nor patients had a preference for virtual or standard consultation, and referral rates were no greater within two years for patients who experienced the virtual consultation. Buvik et al (2016) note that having a physiotherapist instead of a nurse may be more effective, although these professions are both represented within the Arthroplasty Care Practitioner's Association (<http://www.acpa-uk.net>). Three participants in this study suggested General Practitioners (GPs) could also assist with arthroplasty follow-up. However, the GP workload in the UK has rapidly increased in the last 10-years (Hobbs et al, 2016) putting immense pressure on general practices. With the current increasing use of advanced practitioner physiotherapists as the first contact in general practices for patients with musculoskeletal problems (CSP et al, 2018), there may be potential for this service to include arthroplasty follow-up in the future. However, the specialist screening required in arthroplasty follow-up may not be appropriate for the GP setting (Haddad et al, 2007).

In this study, less than half of the participants were aware of their local NHS STPs. If changes are to be made to arthroplasty surveillance, there needs to be liaison between primary and secondary care with reference to national guidelines and local STPs. Of the study participants that were aware of their STP, only 39% reported that their responses were consistent with the plan. In the changing healthcare environment, these plans will need to be considered to ensure any future surveillance is funded.

The response rate for the survey was significantly higher amongst attendees at BASK, which may bias the results towards the views on knee arthroplasty surveillance. However, 87% of respondents across both conferences were orthopaedic consultants, some of whom will perform both hip and knee arthroplasty, thus providing a balance of views. The inclusion of 13% of non-medically trained professionals provided some of the other health care perspectives on arthroplasty surveillance although the patient view was not captured in this survey.

In conclusion, there continues to be widespread support for arthroplasty follow-up services within the specialist orthopaedic community, with many preferring a virtual service using arthroplasty practitioners. However, the current pressure on healthcare resources necessitates a re-evaluation of recommended follow-up services and their method of delivery.

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British Hip Society

Annual Conference 14-16 March 2018

The following notes summarise the current NICE guidance on long term follow up of hip arthroplasty.

NICE guidance for commissioners, sponsored by British Hip Society, British Orthopaedic Association (BOA), Royal College of Surgeons of England (RCSEng)

2017

Commissioning Guide:

Pain Arising from the Hip In Adults

High Value Care Pathway for Pain Arising from the Hip in Adults

Secondary Care

Total hip replacement

Follow up visits:

- ♣ Patients over 75 years at primary THR with ODEP 10A rated implants need not be routinely reviewed after successful recovery from the procedure has been documented.
- ♣ ODEP 10A rated implants should be followed up in the first year, once at seven years and three yearly thereafter in asymptomatic patients. Telephone or web-based PROMS may be useful to monitor outcome.
- ♣ Novel or modified implants (32) should be introduced through Beyond Compliance process, which requires surgeons to enter data from more frequent follow ups - usually annually for the first five years, two yearly to ten and three yearly thereafter.
- ♣ Routine follow up in General Practice is not advised (33); where complications are identified in General Practice, and where possible, principles of continuity of care should be applied, enabling referral back to the original surgical team.
- ♣ Virtual format of follow ups may be possible with sufficient IT and radiological support
- ♣ Metal on Metal bearing hips should be followed up in accordance with existing advice from the MHRA. This is supported by the BHS and the BOA.
- ♣ Post-operative analgesia, beyond discharge, requires timely review

Please turn over...

A group of health professionals and researchers are conducting a major research project on the effect of disinvestment in long term follow up of arthroplasty on patient care and outcomes (UK SAFE¹), and are interested in your response to the following three questions. Please indicate your reply by a tick in the relevant box, one per question.

1. As a healthcare professional, do you think that the orthopaedic community should adhere to these guidelines:
- a. Yes
 - b. Yes, but with a change in the intervals
 - c. No
 - d. Don't know
- Any comment to support your answer:

2. As a healthcare professional, would you support any type of long term arthroplasty surveillance:
- a. Yes – a face-to-face consultant service
 - b. Yes – a face-to-face arthroplasty practitioner service with consultant support
 - c. Yes - a virtual* consultant service
 - d. Yes – a virtual* arthroplasty practitioner service with consultant support
 - e. No
 - f. Don't know
- *Virtual – assessment of x-ray images and patient reported outcome measures without the patient present
- Any comment:

3. Are you aware of the Sustainability and Transformation plan (STP) for your area?
- a. Yes
 - b. No

If yes, do you think that your answers to questions 1 and 2 are consistent with your local STP?

Your health profession: Surgeon / Nurse / AHP / Researcher / Other (*please state*).....

Time since qualification: years

British Association for Surgery of the Knee

Annual Conference 20-21 March 2018

The following notes summarise the NICE commissioning guidance on long term follow up of knee arthroplasty.

¹Towards UK poSt Arthroplasty Follow-up rEcommendations: **UK SAFE**

NICE guidance for commissioners, sponsored by British Association for Surgery of the Knee, British Orthopaedic Association (BOA), Royal College of Surgeons of England (RCSEng)

2017

Commissioning Guide:

Painful Osteoarthritis of the Knee

Patients should be followed up in the first year, once at seven years and three yearly thereafter in asymptomatic patients. Telephone or web-based Patient Reported Outcome Measures (PROMS) may be useful to monitor outcome (e.g. virtual clinics). Radiographs, reported by radiologists with musculoskeletal interest, are essential as imaging identifies failure better than symptoms. Routine follow up in General Practice is not advised; where complications are identified by patient contacts in primary care, referral back to the original surgical team should be made possible.

Novel or modified implants should be introduced conforming with the Beyond Compliance principles with increased follow-up - usually annually for the first five years, two yearly to ten and three yearly thereafter.

Please turn over...

A group of health professionals and researchers are conducting a major research project on the effect of disinvestment in long term follow up of arthroplasty on patient care and outcomes (UK SAFE²), and are interested in your response to the following three questions. Please indicate your reply by a tick in the relevant box, one per question.

1. As a healthcare professional, do you think that the orthopaedic community should adhere to these guidelines:
- e. Yes
 - f. Yes, but with a change in the intervals
 - g. No
 - h. Don't know
- Any comment to support your answer:

2. As a healthcare professional, would you support any type of long term arthroplasty surveillance:
- g. Yes – a face-to-face consultant service
 - h. Yes – a face-to-face arthroplasty practitioner service with consultant support
 - i. Yes - a virtual* consultant service
 - j. Yes – a virtual* arthroplasty practitioner service with consultant support
 - k. No
 - l. Don't know
- *Virtual – assessment of x-ray images and patient reported outcome measures without the patient present
- Any comment:

3. Are you aware of the Sustainability and Transformation plan (STP) for your area?
- c. Yes
 - d. No

If yes, do you think that your answers to questions 1 and 2 are consistent with your local STP?

Your health profession: Surgeon / Nurse / AHP / Researcher / Other (*please state*).....

Time since qualification: years

²Towards UK poSt Arthroplasty Follow-up rEcommendations: **UK SAFE**