



■ EDITORIAL

The problem is not necessarily the data, it is the interpretation

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We are increasingly reliant on ‘big data’ in order to study and understand the effects of treatment, and to examine aspects of orthopaedic care that occur rarely or cannot easily be studied in other ways. To this end, many international orthopaedic registries have been useful and have provided insights into certain aspects of our practice.¹⁻¹⁰ They have, however, also generated concern and debate.⁴

There is no doubt that as the data entered into registries become more complete and more carefully collated, cleaned, and assessed, we will get more useful information. It is, however, extremely easy to misinterpret the data and confuse both patients and surgeons.¹¹ For example, a recent publication has ranked knee implants based purely on survivorship, without considering other relevant variables.¹² By lumping unicompartmental knee arthroplasty (UKA) in with total knee arthroplasty (TKA), they have effectively deemed UKA to be inferior to TKA. This has been widely disseminated, including press releases and a big presence on social media, and leaves patients, readers, surgeons, and administrators with a rather skewed and potentially harmful impression of the relative merits of UKA and TKA. The worst-case scenario is that misguided healthcare commissioners, politicians, or healthcare managers could take these data to suggest that UKA should be performed less frequently, or indeed not performed at all.

In contrast, another recent publication highlights the importance of looking at several outcomes in the assessment of knee arthroplasty in line with contemporary thinking among surgeons and academics worldwide.¹³ Patients expect surgeons to guide them based on the best evidence. Therefore, many outcomes should be used as the cornerstone of shared decision making in knee arthroplasty. Not only should many aspects of the patient’s journey and outcome be considered, but they should be considered in the light of that patient’s situation and the unit into which they are going to be treated, and in the context of the skill set of the surgeons and surgical teams concerned.

There is an interesting contrast between the practice in the United Kingdom and in Denmark. In Denmark, knee arthroplasty has been captured in a national registry for more than 21 years, with high completeness due to compulsory data upload. In the past four to five years, the traditionally conservative Danish surgical community has

increased the use of UKA from 10% to approximately 20% of all knee arthroplasties performed.¹⁴ This is most likely to be based on increasing evidence for the benefits of UKA over TKA. This is in great contrast to the message of Deere et al,¹² where only revision rates were considered.

There are a number of key papers that have used national joint registry data and can be considered fundamental in the assessment of UKA *versus* TKA. Among these are a 2015 study by Little et al,¹⁵ which demonstrated clinically and statistically significant improvements in patient-reported outcomes after UKA compared with TKA.¹⁵ Other research has shown reductions in severe medical complications, readmissions, and mortality, even when adjusting for other covariants.¹³ Another facet of the interpretation of these data that the published benchmarking ignores is the fact that the revision rates for UKA are much higher in the hands of low-volume surgeons, or of those who undertake a low proportion of UKA in their knee arthroplasty practice.^{16,17} The data from such practices and surgeons are included in all data in registries, and hence do not reflect what can be performed using appropriate indications and if undertaken by surgeons whose knee arthroplasty practice includes a minimum of 20% to 30% of UKAs.¹⁸

Most readers will also be aware of the New Zealand Registry data suggesting that there is revision bias after UKA, and that UKAs are revised with similar problem scores to TKAs that are considered successful. This difference in revision trigger is largely unaccounted for when registry data of the United Kingdom are interpreted.^{19,20}

With an appropriate strategy for the usage of UKA, outcomes are excellent, be that with fixed- or mobile-bearing versions.^{21,22} Recent innovations, such as cementless UKA, have shown further improvement.²³ In the publication by Deere et al,¹² it would appear that cemented and cementless versions of the Oxford UKA, and indeed those used for resurfacing the medial or lateral compartment of the knee, are all considered as one entity with no adjustment being made for this.²⁴ Another interesting variable that is not accounted for is the changing technology in both UKA and TKA, which may have a differential impact on TKA. The introduction of robot assistance seems to have potentially improved the outcome for patients undergoing UKA and may well

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