

## Summary of research proposal LROI



### **Title:**

Inter-Hospital Variation in Revision Rates After Shoulder Arthroplasty in the Netherlands

### **Authors:**

J Nagels, LA Hoogervorst, P van Schie, RGHH Nelissen, PJ Marang-van de Mheen, FA de Boer

### **Abstract:**

Clinical outcomes following primary shoulder arthroplasty vary between hospitals. In a comparison between United States hospitals, a 1.5-1.6 higher rate of post-operative fractures, blood transfusions, and early revision were seen. By continuously analysing and comparing outcomes, it may be possible for underperforming hospitals to improve their care by the introduction of quality improvement initiatives. Even more, surgeons may learn from best performing healthcare centres to improve their outcome.

It is crucial that hospital comparisons, especially rankings, are reliable. Therefore, in addition to the measured variation of in clinical outcomes between centres, the reliability of ranking (rankability) needs to be calculated. The rankability indicates the percentage of variation that is due to "true " hospital differences as opposed to random (chance) variation.<sup>14</sup> Random variation is particularly likely if the number of events is small. Thus, conclusions about the quality of care delivered are only reliable if an outcome is ranked reliably.

The purpose of this study is to assess the extent of variation in 3-year revision rates between Dutch hospitals following primary shoulder arthroplasty as well as the variation for reasons for revision. These variations may direct quality improvement initiatives if they actually reflect true hospital differences expressed in the rankability. If hospitals are ranked reliably over a short period of time (e.g. 3 years), deteriorating hospital performance is identified, potentially preventing more failures from occurring.

**Approval date:** October 2020