

## Is there a positive relationship between procedure volume and hospital quality measured by Patient Reported Outcome Measures (PROMs)?

### Background

A positive relationship between procedure volume and clinical outcome quality for complex procedures has been shown in numerous studies in the literature. Generally, this means that hospitals treating a larger number of patients with a specific diagnosis or procedure have lower mortality rates<sup>1</sup> or lower readmission or reintervention rates. As this positive relationship is evident and as the validity of single clinical outcome quality indicators is strongly debated, many quality improvement policies use volume-based referral strategies such as minimum volumes or minimum surgical caseloads<sup>2</sup>.

So far, the volume-outcome relationship has been shown for clinical quality indicators such as mortality or readmission rates. These, however, might not adequately represent the quality of care for some procedures. More specifically, procedures where post-treatment mortality is low and other factors such as quality of life are more important, such as for hip and knee replacement, the treatment goal is to improve patients' health-related quality of life (HRQoL) rather than preventing death. This is where Patient Reported Outcome Measures (commonly known as PROMs) can be of use as alternative and more reliable quality measures.

PROMs measure a patient's health status or HRQoL at a single point in time and are collected through short questionnaires filled out by patients directly. PROMs are collected before and after a procedure and provides an indication of the quality of a hospital or treatment.

### Data

In the United Kingdom, the NHS has been collecting PROMs data for a variety of surgical areas (hip and knee replacement, varicose vein and groin hernia surgery) by all providers of NHS-funded care since April 2009<sup>3</sup>. This information is publicly available on the NHS website and constitutes a valuable source of quality-of-care data that can be used in order to test the volume-outcome relationship in a more reliable way. Furthermore, this data has the potential to be linked to further NHS datasets such as the NHS Hospital Episodes Statistics.

### Research question

As part of the Bachelor or Master thesis, it could be investigated *whether a volume-outcome relationship can be shown by using PROMs as outcome quality measurement*. This is of high relevance: If research shows that the volume-outcome relationship is less strong or non-existent for PROMs, volume-based referral strategies might not be justified for certain procedures. If the relationship is stronger for PROMs, however, volume-based referral strategies might be even more relevant for quality of life procedures.

If you are interested in and/or have questions about the above-mentioned topic and you would like to write your thesis with our chair, we look forward to hearing from you (please contact [Irene.Salvi@unisg.ch](mailto:Irene.Salvi@unisg.ch) and [Justus.Vogel@unisg.ch](mailto:Justus.Vogel@unisg.ch)). You can also propose your own research topic, and we will be happy to advise you. We can supervise all students of medicine (Joint Medical Master), business administration, economics, and international affairs.

We look forward to receiving your exposé with a proposal for a concrete research question, methodology and approach!

1. Luft et al. , The volume-outcome relationship: practice-makes-perfect or selective-referral patterns? (1987)
2. Shahian et al., The Volume-Outcome Relationship: From Luft to Leapfrog (2003)
3. Background information about PROMs - NHS Digital (accessed on 16.06.2022)