The Value of Health
Improving Outcomes

Analysing

Health Outcomes Variation

for learning, improvement and better value care

Contents

The Value of Health: Improving Outcomes is a multi-stakeholder initiative advocating for more outcomes focused health systems in Europe. The Value of Health consensus document was launched at the European Parliament in March 2016. This paper has been produced by a thematic Value of Health working group on health outcomes variation.

Significant contributors to the paper:

- **Enrique Bernal-Delgado**
  European Collaboration for Healthcare Optimization
- **Brad Groves**
  International Cancer Benchmarking Partnership
- **Anna Garcia Altes**
  Catalan Health System Observatory
- **Philip van der Wees**
  Celsus Academy for Sustainable Healthcare
- **Max von Olenhusen**
  Novartis
- **Vinciane Quoidbach**
  European Brain Council
- **Thomas Allvin**
  European Federation of Pharmaceutical Industries and Associations
- **Kaisa Immonen-Charalambous**
  European Patients' Forum
- **Charlotte Roberts**
  International Consortium for Health Outcomes Measurement
- **Yves Verboven**
  MedTech Europe
- **Douglas Gregory**
  Amgen
- **Nikos Dedes**
  'Positive Voice'- the Association of People Living with HIV in Greece
- **Dipak Kalra**
  European Institute for Innovation through Health Data

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Executive Summary

Health systems across Europe are confronting significant challenges. Ageing populations, a rising burden of chronic disease, and a more challenging fiscal context following the economic crisis, are focusing attention on the financial sustainability of health systems. There is a pressing need for solutions and tools that can improve quality of care and ensure better value for money.

Health outcomes measurement is just such a tool. Health outcomes are the health benefits (and in some cases, the disbenefits) that result from health-related interventions. They include: survival and mortality; readmissions; adverse events; functional status; pain; and ability to carry out normal daily activities. This paper will focus on one of the principal ways in which health outcomes data can be used to improve quality of care and enhance value for money: the analysis of variation.

Variation occurs when patients with the same medical condition experience unequal benefits following treatment and care. The analysis of health outcomes variation can be used to:

- assess (relative) performance – e.g. between clinicians, health care providers, and health systems;
- identify and learn from best practices;
- trigger quality improvement efforts where outcomes appear to be sub-optimal.

If critical success factors can be identified, or the reasons for sub-optimal care are explained, patient care can be improved and better value generated for the resources invested.

The paper highlights a range of examples of health outcomes variation analysis being used to identify and address the underlying causes of that variation – including:

i. experience as a driver of better outcomes in coronary artery bypass graft (CABG) surgery;

ii. surgical technique as a determinant of urinary continence in prostate cancer care;

iii. implant type impacting on patient-reported outcomes (PROs) following knee replacements.

In each case, the identification of a critical success factor was followed either by changes in clinical practice (and measurable improvements in patient outcomes as a result) or a recommendation on how to improve.

The paper draws attention to the important opportunity provided by the forthcoming OECD ministerial to begin collecting data from patient-reported outcome measures (PROMs), and to use this to analyse patient-reported outcome variation across countries.

PROMs are standardised instruments used to ascertain patients' perspectives on their health and health-related quality of life. They are also a multi-functional tool for improving the quality of health care.[1] In addition to the analysis of variation, they can be used to:

i. support patient-clinician communication and shared decision-making;

ii. provide feedback to clinicians about the effects of health care interventions from the patient perspective;

1 See 'Enhancing Value in European Health Systems: the role of outcomes measurement' (2016), pp.27-30, available at: http://www.eu-patient.eu/globalassets/policy/patientssafety/value-of-health-consensus-document.pdf

iii. support quality improvement at the provider level (by reviewing aggregate data and monitoring improvement over time).

Drawing upon the examples of 'Regional Comparisons' in Sweden and the 'Results Center' in Catalonia, the paper also shows how transparency of outcomes data and outcomes variation can be a powerful tool for incentivising quality improvement. The purpose of transparency should always be quality improvement – as opposed to naming and shaming based on relative performance.

The paper then concludes with a Call to Action. Both at national and international levels, there are a growing number of initiatives that are making important contributions to the goal of more outcomes focused health care systems in Europe. Governments can further enable this transition by:

1. Supporting and facilitating the international standardisation of health outcome measures and data collection/coding practices – both of which are crucial to ensure data comparability. Working with the OECD to develop comparative measurements for patient-reported outcomes would make a very important contribution to the standardisation agenda.

2. Intensifying efforts to make the results of treatment and care transparently available to health stakeholders and citizens more broadly. As with the examples from Sweden and Catalonia discussed in this report, results should be presented in an accessible and understandable form to non-experts.

3. To ensure that data protection rules do not unnecessarily impede the use of health data for research and health care improvement, countries should introduce data governance frameworks that permit the use of data for these purposes, whilst protecting personal information.

Introduction

Health care variation, outcomes and value

In health care, the term 'variation' is used to describe differences in the way that care is organised, delivered, and its impact on patient health (health outcomes). The concept is not new: in 1967, research by John Wennberg revealed significant variations in US health care based on Medicare data. In the past two decades, 'atlases' of variation have become an increasingly common tool for illustrating geographic differences in health care practices.[2]

To date, the study of health care variation has tended to focus much more on clinical practices than health outcomes. For example, a 2014 study by the OECD drew attention to numerous examples of clinical practice variation – both within countries and between them.[3] Examples included variation in hospital admission rates, variation in knee replacement rates, and variation in the use of caesarean section (all of which have significant implications in terms of potential 'underuse' and 'overuse' of health care resources).

One reason why the analysis of clinical practice variation is more common than health outcomes variation, is data availability. Routine measurement and collection of health outcomes is still much less common than other forms of health care data (such as inputs and processes). More systematic measurement of health outcomes would present new opportunities for learning and improvement, in particular through the analysis of variation.

Another concept that is central to this paper is 'value'. In recent years, there has been growing interest in how to improve health care value, including the OECD's 2010 study 'Improving Value in Health Care: Measuring Quality', the work of Michael Porter at Harvard Business School (for example, 'What is Value in Health Care?', published in the New England Journal of Medicine), and a range of other initiatives nationally and internationally.[4]

Following Porter's lead, value is now commonly defined as health outcomes (per medical condition) relative to costs. A pre-requisite to any assessment of value is therefore the measurement of health outcomes at the patient level.

'Better value care' implies an improvement in health outcomes relative costs – either by improving outcomes or reducing costs. 'Low-value care' refers to a situation where health outcomes are sub-optimal or where resources are being used inappropriately or unnecessarily – for example, on interventions that do not lead to meaningful improvements in patient health.

Where health outcomes are found to be sub-optimal, the reasons for this should be investigated and action taken to improve quality of care. Case Study 1, provided by the European Brain Council's Value of Treatment project, discusses further the relationship between value, outcomes measurement and quality of care – with specific reference to care for ischemic stroke patients.

2 See for example: NHS Right Care, 'The NHS Atlas of Variation in Healthcare: Reducing unwarranted variation increase value and improve quality' (November 2010); Australian Commission on Safety and Quality in Healthcare, 'Australian Atlas of Healthcare Variation' (November 2015); Atlas VPM, 'Atlas of Variations in Medical Practice in the Spanish National Health System'.

3 OECD, 'Geographic Variations in Health Care: What do we know and what can be done to improve health system performance?' (2014)

4 M.E. Porter, 'What is Value in Health Care?', The New England Journal of Medicine (2010)

CASE STUDY 1

European Brain Council: Value of Treatment Project

The EBC Value of Treatment (VoT) Project aims to provide evidence-based and cost-effective policy recommendations for a more patient-centred and seamless care model for brain disorders (in VoT, 'patient-centredness' refers to shared clinical decision making). Outcomes are assessed using patient outcome indicators for defined patient groups and clinical indicators.

Care for brain disorders usually involves multiple specialties and numerous interventions, with final outcomes determined by interventions across the full cycle of care. Measuring, reporting, and comparing outcomes is crucial in order to improve outcomes and make informed choices about how to reduce costs.[1]

Based on research methodology developed by two Academic Partners (the London School of Economics and the Rotterdam Institute of Health Policy and Management), VoT is developing case studies analysing (i) health gains and (ii) socio-economic impacts resulting from best practice health interventions.

The benefits of best practice interventions will be compared with the current standard of care or, where appropriate, non-treatment. The comparisons will take account of cost burdens (including socio-economic costs) in order to assess value.

VoT example: improving care for ischemic stroke patients

An illustration of the EBC approach, and one of the VoT case studies, is acute stroke care.

- Intravenous thrombolysis (IVT) with recombinant tissue plasminogen activator (rt-PA) is one of very few effective treatments for acute ischemic stroke. In most centers, however, only a small proportion (2%–7%) of patients with ischemic stroke receive this treatment.
- The most important factor limiting IVT administration is time, because it has to be administered within 4.5 hours of symptom onset. Even within that window, reducing 'time-to-needle' (the time between symptom onset and IVT administration) can improve functionality and reduce complications.
- The clinical benefit from IVT declines rapidly however. Time is brain, and every minute counts:
  - If IVT is started within 90 minutes after stroke onset, the number of patients that need to be treated (NTT) in order to achieve an excellent clinical outcome (based on modified Rankin scale – a measure of disability and dependence in daily activities) is 4.
  - Within the 180–270-minute time window, the number of patients that need to be treated to achieve an excellent outcome increases dramatically – to 14.

Put simply, a shorter delay from symptom to IVT (the so-called symptom-to-needle time) can make the difference between being independent and being dependent.

Policy implications

- Reducing the symptom-to-needle time is vital. While most time is lost in the prehospital period (because patients wait before they seek medical attention), awareness campaigns have been found to have only limited impact in addressing this.

- Inside the hospital, the focus should be on decreasing the time from arrival to IVT administration – the so-called door-to-needle time (DNT). In most countries, national guidelines recommend that the DNT should not exceed 60 minutes. However, 15 years after IVT was proven to be clinically effective, in most institutions the DNT is still more than 60 minutes for the majority of patients.
- Reducing DNT will also increase the proportion of patients eligible for IVT, because more patients can be treated within the 4.5-hour time window.

In June 2017, EBC will launch a White Policy Paper at conference under the auspices of the Maltese EU Presidency. Scientific publications will also be released in 2017.

1 Porter ME. Defining and introducing value in health care. In: Evidence-based medicine and the changing nature of health care: 2007 IOM annual meeting summary. Washington, DC: Institute of Medicine, 2008:161-72.

Making the results of health outcomes variation analysis transparently available would also contribute to incentivising quality improvement efforts. Transparency can support health literacy and patient involvement in decisions about their treatment and care (including what type of treatment they wish to receive and – where the health system permits – from which provider).

Greater attention to variation can thus offer significant benefits to key health care stakeholders – including:

- **Governments**: by addressing instances of low value care
- **Health care professionals & managers**: by strengthening quality improvement programmes
- **Patients**: through improved quality of care and patient empowerment

At European level, there is an increasing focus on health outcomes variation (in particular at the health system level) through 'State of Health in the EU' package. The first part of the package – Health at a Glance Europe – was published in November 2016, and subsequent outputs will identify country-specific health challenges and policy lessons relevant across countries.

Structure

This multi-stakeholder policy paper is divided into three main parts:

- **Part I**: shows how the analysis of health outcomes variation can be used to learn and improve. It draws upon case studies provided by the **European Collaboration of Health Care Optimization and the International Cancer Benchmarking Partnership**. It also highlights pre-requisites to successful variation analysis – namely: standardised measurements, case-mix and risk adjustment, and data governance systems that support the use of health data for health research and improvement, whilst protecting personal information.
- **Part II**: discusses variation in **patient-reported outcomes** (PROs). Drawing upon examples from the **Martini Klinik** in Germany and the **NHS PROMs Programme in England**, it shows how a greater focus on PRO variation can make an important contribution both to better quality of care as well as more patient-centred health systems. In the context of the forthcoming OECD Health Ministerial meeting, It highlights the importance of a positive decision by member countries to work with the OECD to collect and report PROMs data.
- **Part III**: looks in greater detail at how transparency of results can reinforce the benefits of outcomes variation analysis by incentivising quality improvement. It focuses on two leading examples:

Regional Comparisons of Quality and Efficiency in Swedish Health Care, and the 'Results Center' of the Catalan Health System Observatory.

The paper concludes with a call for governments and stakeholders to work together so that the benefits of health outcomes measurement and variation analysis can be fully realised.

While the focus in this paper will be on variation in the outcomes of care, it should be underlined that the use of outcomes variation data for performance improvement is just as relevant for public health policy as health care (see 'Enhancing Value in European Health Systems: the role of outcomes measurement').

1 Outcomes Variation Analysis

A tool for learning and health care improvement

SUMMARY

- Health outcomes variation can be caused by a range of factors – in particular, clinical practice variation. The key to learning and improvement is identification of the specific cause of the variation
- Even when the cause cannot be immediately ascertained, identification of the variation is likely to trigger deeper investigation (see case study on the International Cancer Benchmarking Partnership)
- Standardised measurements, case-mix and risk adjustment, and good data governance frameworks are all key pre-requisites to successful variation analysis, and its use for learning and improvement.

Clinical practice variation: a key to understanding health outcomes variation

Variation in health outcomes can be due to a number of factors, including variation in clinical practices, different levels of access to high quality care (for example, waiting times and proximity to health services), and patient behaviours (such as adherence).

A number of the examples in this paper highlight the critical relationship between clinical practice variation and health outcomes variation. An understanding of the causes of clinical practice variations is therefore essential before moving on to focus on related instances of health outcomes variation.

The reasons for clinical practice variation include:

- differences in medical training and traditions of care (especially between countries);
- variation in the extent to which clinical guidelines are followed and/or in the use of non-evidence based interventions;
- resources: services will not all have identical access to funds, staff, specialist expertise, and equipment
- incentives – e.g. payment and reimbursement models
- differences in the services provided by primary/secondary care in different countries, and the different roles assigned to health care professionals
- the degree to which providers are specialised and/or integrated with other relevant parts of the health care system;

- population characteristics (including cultural perspectives/attitudes) and health needs (clinical services may sometimes be designed differently because they need to prioritise specific needs)

Caesarian section use as an example of clinical practice variation

A well publicised example of clinical practice variation is differing rates of caesarean section (C-Section) use – both within and between countries. It was highlighted in the OECD's 2014 report on 'Geographic Variations in Health Care', and has been included in studies by the European Collaboration for Healthcare Optimization (ECHO – see below), and 'Patterns of Maternity Care in English NHS Trusts', produced by the The Royal College of Obstetricians and Gynaecologists (RCOG).[5]

The interest in C-section variation is in part due to the fact that C-sections entail increased health risks for both mother and baby, as well as being more expensive than normal deliveries.[6] RCOG advice for clinicians on obtaining the consent of women undergoing C-section highlights the following 'frequent risks' associated with C-sections:

- **maternal risk**: increased risk of repeat C-section when vaginal delivery is attempted in subsequent pregnancies; persistent wound and abdominal discomfort in the first few months after surgery; readmission to hospital; infection;
- **fetal risk**: lacerations.[7]

The ECHO analysis, focusing on C-section use in low risk deliveries (see case study 2), highlights significant within country variation in C-section use, ranging from a three-fold difference between areas in Denmark, to a 41-fold variation between areas in Spain.

The OECD's analysis highlighted the following reasons for the variation observed: the 'styles' of medical professionals; greater use of C-section by private-for-profit hospitals compared with public hospitals (in France, Italy, Spain and Switzerland); and the fact that women with high socio-economic status tend to be more likely to give birth by C-section.[8]

A number of countries have introduced measures to reduce 'unnecessary' C-sections and variation between hospitals/regions. For example: Italy has employed targets; Belgium provides feedback to hospitals; and some countries have introduced financial mechanisms (e.g. reducing the price paid for C-section deliveries).[9]

Variation analysis can highlight critical success factors, improvement opportunities, and low value care

Some variation in clinical practices will always be inevitable, and even desirable if health care providers and medical professionals are to innovate and adjust care delivery in the pursuit of better quality.

5 S. García Armesto et al., 'Potential of geographical variation analysis for realigning providers to value-based care. ECHO case study on lower-value indications of C-section in five European countries', *European Journal of Public Health* (2015); The Royal College of Obstetricians and Gynaecologists, 'Patterns of Maternity Care in English NHS Trusts' (2016).

6 OECD, 'Geographic Variations in Health Care: What do we know and what can be done to improve health system performance?' (2014)

7 RCOG, Caesarian Section, Consent Advice No.7 (October 2009), available at: https://www.rcog.org.uk/globalassets/documents/guidelines/consent-advice/ca7-15072010.pdf

8 OECD, 'Geographic Variations in Health Care: What do we know and what can be done to improve health system performance?' (2014)

9 OECD, Focus on Health: 'Geographic Variations in Health Care' (September 2014).

Where practice variation is significant and systematic, however, it is likely to reflect sub-optimal and low-value care in some cases. The two examples below show how analysis of health outcomes variation can contribute to learning, improvement, and the delivery of better value care.

Experience as a critical success factor

An important factor that can influence health outcomes is the experience and expertise of institutions providing a particular health care intervention. In addition, hospitals that perform an intervention frequently may be more likely to have access to the latest technology and equipment, and to ensure that trainings are based upon state of the art research/expertise.

Case study 2 by the European Collaboration for Healthcare Optimization includes an example of health outcomes variation, focusing on the relationship between mortality following coronary artery bypass graft (CABG) surgery and 'surgical volume' (the number of surgeries performed). Higher surgical volumes can be associated with greater experience and expertise among the institutions providing CABG.

Based on data from five countries, the ECHO case study shows that the mortality rate among 'low' volume hospitals was 5.1%, compared with 2.1% among 'high' volume hospitals. Figure 1 shows that in England, where CABG provision is already concentrated in surgical centres, mortality rates are lower and the variation between hospitals is smaller (although the best performing hospital is Spanish). Based on these findings, ECHO recommends that CABG provision should be 'regionalised' (concentrated).

The greater variation among low volume hospitals highlights the particular importance of performance monitoring when volumes are low, in order to ensure that sub-optimal care can be quickly identified and addressed.

Time to diagnosis and treatment differences: drivers of variation in cancer outcomes?

Case study 3 is provided by the International Cancer Benchmarking Partnership (ICBP) and focuses on how and why cancer survival (breast, colorectal, lung and ovarian) varies between countries. The project involved 22 jurisdictions in eight countries.

ICBP's core benchmarking study found that relative survival during 1995-2007 improved in all jurisdictions, but overall survival was:

- higher in Australia, Canada and Sweden
- intermediate in Norway
- lower in England, Northern Ireland, Wales and Denmark.

ICBP is now conducting further analysis projects to better understand the factors influencing survival differences. With respect to lower survival in the UK, two main factors are thought to play an important role: i. time to diagnosis; and ii. treatment differences.

Regarding treatment differences, in particular, ICBP is investigating: the role of treatment guidelines (including the extent to which they are followed); organisation of care (including numbers of specialists and their caseload); proximity to appropriate services; and financial factors.

The ICBP example demonstrates that even where the specific cause of the variation may not be immediately clear, identification and awareness of significant variation can trigger deeper investigation in order to better understand and then address differences in health outcomes.

Variation analysis requires standardised measurements, risk adjustment, and data governance

Standardisation ensures data comparability

Analysis of health outcomes variation – whether at the level of hospitals, regions/areas, or countries – requires standardised approaches to measurement and data collection/coding. Without standardised ways to measure and collect outcomes data, individual countries are likely to proceed with the use of their own, preferred measurement tools – and opportunities to learn and improve by analysing international variation will be lost.

There are a number of organisations involved in the development of standardised health outcome measures / measurement sets. The International Consortium for Health Outcome Measurement (ICHOM) – founded in 2012 – aims to create a 'common language' for health outcomes by developing, per medical condition, a standardised health outcomes set.

ICHOM supports health care organisations with the implementation of these standards sets in routine clinical settings and is also piloting a benchmarking programme comparing outcomes between organisations from multiple countries in 2 conditions (hip & knee osteoarthritis and cataracts).

Another example is Outcome Measures in Rheumatology (OMERACT), which focuses on the development of clinical and radiographic outcome measures for arthritis and other rheumatic diseases. Both OMERACT and ICHOM attach a high degree of importance to the involvement of patients, alongside medical professionals, in the standardisation process.

Alignment on standardised measures does not preclude the use of additional measurement tools that reflect local needs and preferences. The ideal is to reach alignment on 'core' outcome sets, which would be used internationally, and which can then be supplemented by clinicians at the local level.

Another example of this type of approach can be found in the area of clinical trials, where the COMET initiative seeks to develop 'core' measurement sets representing the minimum that should be measured and reported in clinical trials for a specific condition.

Alongside progress on standardisation, attention should also be given to the potential of electronic health records (EHRs) to enable the development of a new generation of health outcome indicators extracted from routinely collected clinical data.

Case-mix and risk adjustment ensure meaningful insights

A second pre-requisite to successful variation analysis is case-mix and risk adjustment. These are employed in order to take account of differences in patient characteristics. If the data were not adjusted, it would not be possible to identify when variation is being driven by patient characteristics, and when it may reflect differences in quality of care.

Factors commonly taken into account in case-mix and risk adjustment include: age, gender, co-existing medical conditions (co-morbidities), disease severity, and lifestyle factors (e.g. smoking). Robust risk adjustment strategies are essential to ensure that data is comparable, and can be used to identify opportunities for health care improvement.

Good health information systems and data governance are essential if variation analysis is to thrive

A third pre-requisite to successful variation analysis is high quality health information systems. These systems should be easy to use and ideally have integrated decision-support functions that provide a benefit to healthcare professionals.

Health information systems also need to be supported by data governance frameworks that enable health data to be used for research and improvement, whilst protecting personal information. Across Europe, there are different approaches to the use of data for healthcare research and improvement. In some countries, data protection rules can pose significant barriers to the use of data for the types of analysis described in this paper. Even in countries where data is already being used for these purposes, the absence of clear data governance frameworks can still create uncertainty and unnecessary restrictions.

Governments have a key role to play ensuring that clear data governance frameworks are in place in order to enable the use of data for variation analysis and quality improvement, whilst at the same time protecting patients' personal information.

CASE STUDY 2: THE EUROPEAN COLLABORATION FOR HEALTHCARE OPTIMIZATION

By Enrique Bernal-Delgado and Sandra García-Armesto on behalf of the ECHO consortium

The European Collaboration for Health Care Optimization (ECHO) uses a broad definition of outcomes research: the effect of care interventions on clinical, humanistic and economic outcomes, at patient and population level. ECHO has applied this definition to the analysis of performance in five European health care systems: Denmark, England, Portugal, Slovenia and Spain.

ECHO defines low-value care as: a) low-quality care; b) unsafe care; c) underuse of effective care; d) essentially ineffective care; e) effective care performed on non-eligible patients; or, f) care with a more cost-effective alternative. This definition can be used to analyse individual effects and population-wide effects.

Unlike classical comparative effectiveness and cost-effectiveness studies, the unit of analysis in ECHO is not the individual but the institution where the patient is treated or the care system to which the population is exposed. The variation observed among institutions or care systems reflects systematic low-value care among some hospitals.

Using real world data linkage, hospital discharges (200 million episodes), demographic and socioeconomic data, and supply data, ECHO was able to show significant variation in outcomes within and across health care systems. This case study provides two examples of the ECHO approach:

1. Hospital mortality after coronary artery bypass (CABG) – shows systematic and 'unwarranted variation' (variation that cannot be explained by population epidemiology or patients' needs) in low-quality care.
2. C-sections in low-risk deliveries – shows systematic and unwarranted variation in effective care performed on 'non-eligible' patients.

Example 1 – In-hospital mortality after coronary artery by pass

Questions of interest: Are health outcomes dependent on the place where the patient is treated? Is 'surgical volume' a factor that might help to improve care outcomes?

Objective and methods: To estimate a safe minimum hospital volume for hospitals performing CABG surgery. Hospital data on all publicly funded CABG in five countries, 2007–2009 (106,149 patients) was used.

Findings: The 30-day in-hospital mortality rate was:

- **Overall**: 3.0% overall
- **Low-volume hospitals**: 5.2% (95%CI: 4.0–6.4)
- **High volume hospitals**: 2.1% (95%CI: 1.8–2.3)

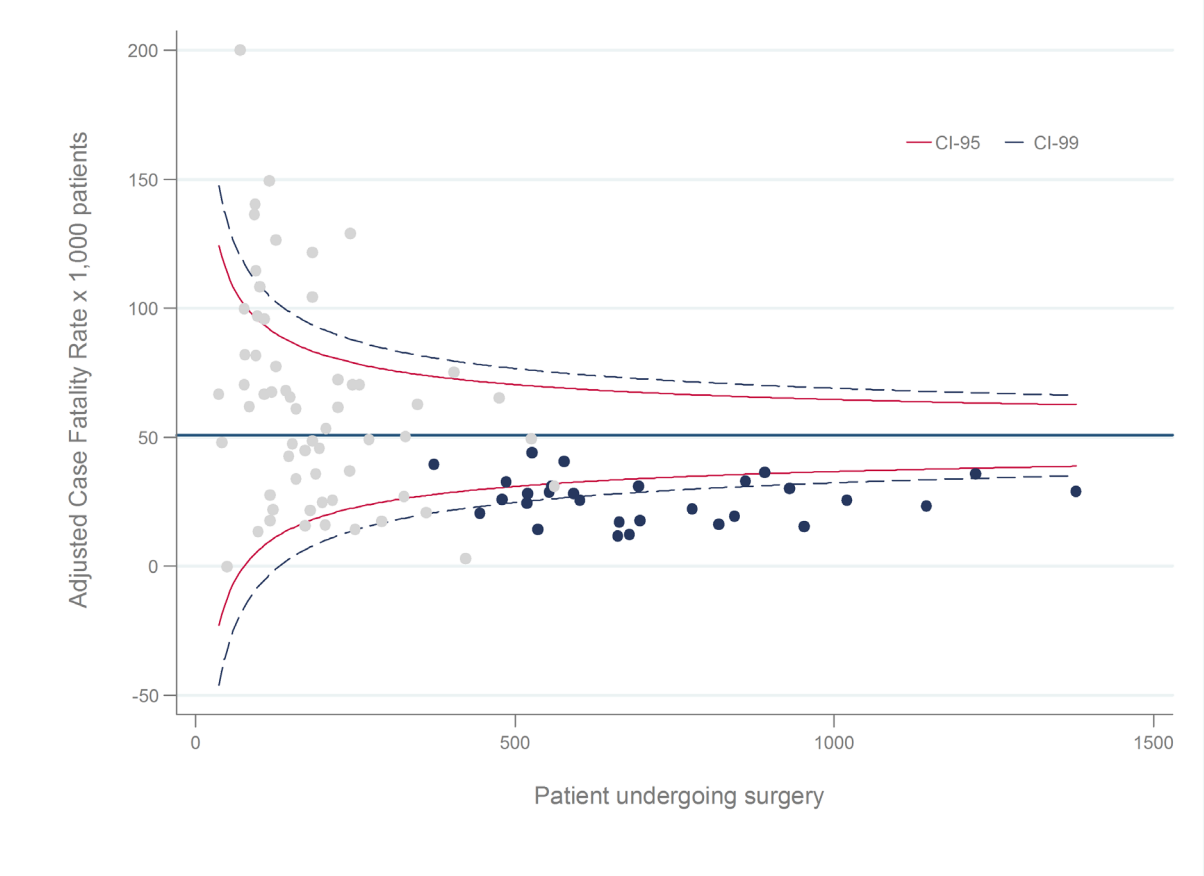
There is a significant curvilinear relationship between volume and mortality – flatter above 415 cases per hospital per year (see figure 1).

Policy lessons: **The provision of CABG should be regionalized to improve results.** As CABG utilization is steadily decreasing (but remains the superior treatment for multi vessel coronary disease), the number of hospitals performing it above the safety threshold is also reducing. The concentration of interventions in a fewer number of centres should become the rule in the upcoming decades.

See Gutacker N, Bloor K, Cookson R, Gale CP, Maynard A, Pagano D, Pomar J Bernal-Delgado E. 'Hospital surgical volumes and mortality after coronary artery bypass grafting: using international comparisons to determine a safe threshold'. Health Services Research 2016, May 16. doi: 10.1111/1475-6773.12508

Figure 1: Mortality after CABG

Variation between hospitals (represented by dots)
(Spanish hospitals represented by grey dots, English hospitals represented by black dots)



Note: Hospitals beyond the upper confidence interval represent either alerts (beyond the red line) or alarms

(beyond the dashed-line). Conversely, those hospitals beyond the lower confidence intervals are good or the best performers.

Example 2 – C-sections in low-risk deliveries

Questions of interest: Are pregnant women treated differently depending on their place of residence? What are the excess cases of c-section that could be avoided without risking maternal health?

Objective and methods: To map out areas showing excess-usage of low value c-sections and to estimate excess-expenditure as a proxy of the opportunity costs borne by health care systems. 1,2 million deliveries were allocated to the 913 health areas composing five health care systems in Europe. Unwarranted variation in c-section rates in low-risk deliveries and consequent excess-cases were elicited, taking best performers as a reference.

Findings:

- Cross-country comparison of lower-value C-section leaves Denmark with 10% and Portugal with 2% (the highest and lowest rates).
- Variation within countries ranged from:
  - **Denmark**: 3.2-fold variation
  - **Spain**: 41-fold variation
- Such behaviour was stable over the period of analysis.
- Within each country, the scattered geographical patterns of use intensity speak for local drivers playing a major role within the national trend (see Figure 2).

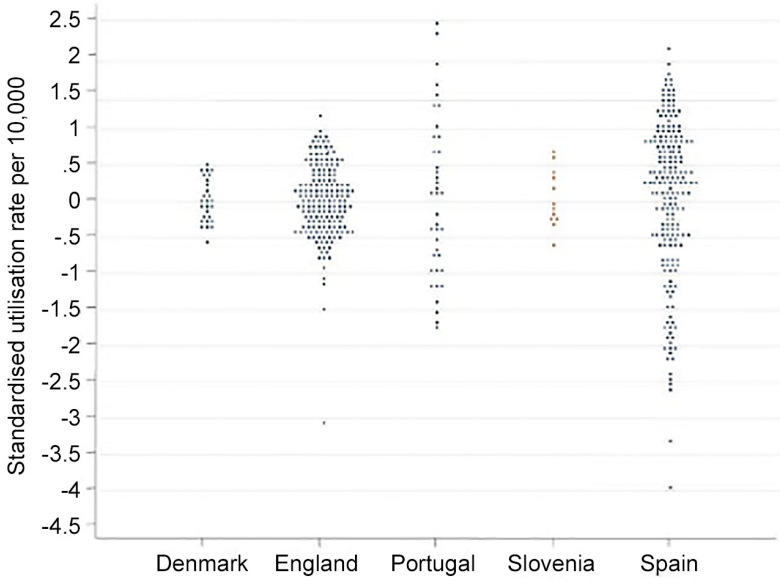
Policy lessons: The analysis indicates that there is significant scope for enhancing value (and reducing waste) in obstetric care, and improving equity in women's access to high value care. Comparing poor performers' decisions and pathways of care with similar providers whose performance ranks better may be a powerful driver for improvement.

See García-Armesto S, Angulo-Pueyo E, Martínez-Lizaga N, Mateus C, Joaquim I, Bernal-Delgado E; ECHO Consortium. 'Potential of geographical variation analysis for realigning providers to value-based care. ECHO case study on lower-value indications of C-section in five European countries'. Eur J Public Health.

Figure 2: C-section in low risk deliveries

Variation between areas (represented by dots)

Note: Dots represent health care areas (913 in total).



See García-Armesto S, Angulo-Pueyo E, Martínez-Lizaga N, Mateus C, Joaquim I, Bernal-Delgado E; ECHO Consortium. 'Potential of geographical variation analysis for realigning providers to value-based care. ECHO case study on lower-value indications of C-section in five European countries'. Eur J Public Health.

Wider lessons from ECHO

Beyond the immediate lessons that can be learnt from both examples, the ECHO project has provided additional insights into the difficulties and barriers that should be addressed to further enable outcomes research. In particular:

- Outcomes data collection varies across countries, levels of care, and domains – hospital information is well consolidated and structured, primary care information differs in terms of coverage and quality, and social care information is basically absent.
- Legal boundaries are frequently too narrow and bureaucratic hurdles too high to allow the easy use of individual (anonymised or pseudo-anonymized) data, equally, across Europe.
- Within Europe, there is an uneven interest in the secondary use of the data collected routinely in the care system – the highest propensity of use is found in those countries with a large and consolidated evaluative tradition, where transparency is the rule. Logistical and technical capacity to deal with large amounts of data also plays a role. The development of high quality health information systems is crucial to create learning opportunities from health outcomes research.

CASE STUDY 3: THE INTERNATIONAL CANCER BENCHMARKING PARTNERSHIP

By Brad Groves, Cancer Research UK

The International Cancer Benchmarking Partnership (ICBP) is a multidisciplinary partnership of clinicians, academics, data experts and policymakers. It is the first of its kind, seeking to understand how and why cancer survival varies between countries using data from a range of sources.

22 jurisdictions in 8 countries have participated in the partnership including: Australia (New South Wales, Victoria and Western Australia); Canada (Alberta, British Columbia, Manitoba, New Brunswick, Newfoundland, Nova Scotia, Ontario, Prince Edward Island, Quebec and Saskatchewan); Denmark; Ireland; New Zealand; Norway; Sweden; and the UK (England, Northern Ireland, Wales and Scotland).

The research is undertaken across 5 research modules. Each module looks at different aspects of the cancer pathway to identify possible reasons for international survival differences.

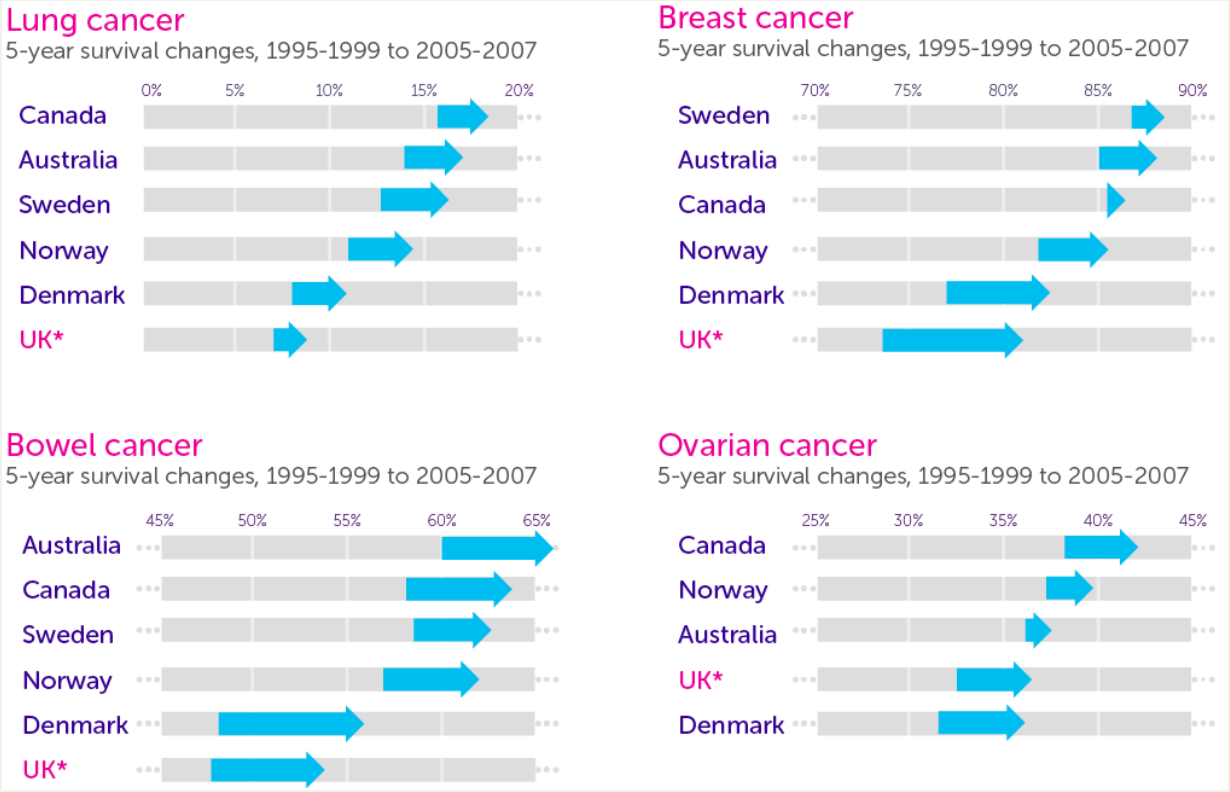
1. Cancer survival benchmarking

Relative survival during 1995-2007 improved for breast, colorectal, lung and ovarian cancer patients in all jurisdictions. Overall survival was higher in Australia, Canada and Sweden, intermediate in Norway and lower in England, Northern Ireland, Wales and Denmark across the four cancer types[1].

Analysis of stage data[3-6] suggests that while there are seemingly 'delays' in diagnosis in the UK, with the UK having a less favourable stage distribution in comparison to ICBP partner countries (for colorectal and lung cancer in particular), treatment differences do in fact play a more significant role than perhaps expected – survival within stage being variable too (particularly for breast and ovarian cancer).

Figure 3: Cancer Survival Benchmarking

Source: Coleman MP *et al.*, *The Lancet* (2011)



2. Public awareness and beliefs about cancer

Differences in public awareness and beliefs about cancer are not likely to be a main explanatory factor for the international survival differences. There was similar awareness of cancer symptoms and beliefs about cancer across all jurisdictions.[7]

Knowledge of age-related risk and the public's interaction with primary care were issues affecting the UK more than other jurisdictions and therefore could be contributing to the UK's poorer survival. While not statistically significant, patients in the UK reported more often that they would put off seeing their GP as they were 'worried about wasting the doctor's time', 'being concerned about what the doctor might find' and 'being embarrassed'.

These findings support the current messages from Be Clear of Cancer 'to tell your doctor' if people notice any signs or symptoms of cancer.

3. The role of primary care in diagnosing cancer

A systems mapping exercise[11] confirmed there are many common health care features between partner jurisdictions and identified some subtle differences that may merit further investigation – including differences in that nature of a patient's contribution to healthcare costs and the ease with which patient can move between GPs.

The main analyses from Module 3 reported[12] a correlation between readiness of GPs to investigate potential cancer symptoms at the patient's first consultation and survival for lung, colorectal and ovarian cancer. This association was found for 1-year survival in four out of five clinical scenarios, and

three of five clinical scenarios for patients who survive the first year after diagnosis and then go on to survive at least five more years (conditional survival).

In England, Northern Ireland, and Wales (which have among the lowest cancer survival rates of the ICBP jurisdictions) GPs consistently reported a lower readiness to refer or investigate patients with potential cancer symptoms at their first consultation, compared to their peers in Australia, Canada, Sweden and Norway, which all have better cancer survival.

4. Time intervals from symptom to treatment

This study will provide the first robust international comparison of time intervals from first symptom(s) until diagnosis and start of treatment of cancer patients, testing the hypothesis that longer time intervals can contribute to poorer cancer outcomes. Preliminary results are showing that there is variation in intervals across all countries. The results of these analyses will be available in early 2017.

5. Factors impacting short-term (up to 1-year) survival

This study is being undertaken in two workstreams:

- Exploring differences in cancer registration practices and the potential impact on survival analyses for up to 1 year survival.
- Linking cancer registry with hospital admissions and other clinical datasets to understand whether having two or more health conditions impacts on short term lung cancer mortality and longer term survival (up to 1 year).

This module illustrates how the partnership is evaluating findings obtained so far and using them to explore specific issues in more detail.

Impacts

The partnership was established with a view to providing high quality outputs that can be translated into policy and practice across the participating countries and more widely. To date ICBP findings have provided evidence for:

- Cancer plans in Norway, Australia (Victoria) and the UK (Scotland and England).
- Identifying priorities for new cancer control initiatives in Canada, such as establishing a Rapid Access Clinic for lung cancer in Alberta.
- Public awareness campaigns in Denmark, targeting specific sections of the population, addressing barriers to seeing a health professional in England and Scotland.
- Initiatives in England, Scotland and Wales aiming to improve access to diagnostics and exploring innovative diagnostic referral pathways.
- The relevance of Danish reforms to cancer diagnostic pathways aimed at diagnosing cancers earlier.
- Engagement exercises with GPs in Manitoba about barriers to accessing diagnostics, including urban/rural issues.
- Projects to improve cancer data completeness and availability in NSW, Ontario, England and Wales.

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2 Patient-reported Outcomes and the OECD Health Ministerial

Seizing the opportunity

SUMMARY

- Patient-reported outcome measures are a crucial tool in order to understand the health impact of treatment and care from the patient perspective. They can also be used to enhance patient involvement, and to analyse and learn from variation
- The NHS PROMs Programme in England has enabled hospitals to improve quality of care, in particular through surgical teams comparing their outcomes against other hospitals
- The OECD Health Ministerial in January is an important opportunity to make progress towards the routine collection of standardised patient-reported outcomes across countries, which can then be used for variation analysis and quality improvement.

What are PROMs and PROs?

Patient-reported outcomes (PROs) are health outcomes data derived from patient-reported outcome measures (PROMs – standardised instruments used to ascertain patients' perspectives on their health and health-related quality of life. PROMs can be both generic (such as the EQ-5D) and used across multiple conditions, or disease-specific (e.g. the 'Oxford Knee Score' or the 'Burn Specific Health Scale').

At the 2017 OECD Health Ministerial, it is proposed that the OECD be asked to identify and develop comparative measures for patient-reported outcomes, which can be used to analyse variation across countries. Part II of this paper explains why this is a key decision, and one which can lead to improved outcomes for patients and better value for health systems.

PROMs enable quality improvement and more patient-centred health care

At a time when increasing emphasis is placed upon the need for health systems to become more patient-centred, PROMs are a crucial tool in order to understand the impact of treatment and care from the patient perspective. Health outcomes captured by PROMs (and depending on the medical condition) include:

- physical functioning / mobility (e.g. walking or cycling)
- symptoms (e.g. pain and fatigue)
- psychological well-being (e.g. anxiety / depression)

- ability to perform usual activities (e.g. shopping/cleaning)
- social well-being (e.g. employment, family, sports)
- health-economic endpoints (e.g. return to work)

It should be noted that not all PROMs used today were developed with patient involvement – some are legacy measures that were developed for use in clinical trials. For that reason, it is important that the validity of PROMs should be rigorously tested to ensure that the outcomes reported genuinely reflect what matters to patients with the medical condition concerned.

PROMs have been shown to be multi-functional tool for quality improvement:[10]

- they can be used to support patient-clinician communication and the involvement of patients in decisions about their treatment and care;
- they are used in routine patient care to provide feedback to clinicians about the effects of medical interventions from the patient perspective;
- PROs are used for quality improvement at the provider level – by reviewing aggregate data and monitoring improvement over time;
- PROs can also be used for outcomes variation analysis – whether at the level of clinicians, hospitals, regions, or countries.

The Martini Klinik: measuring and improving prostate cancer outcomes

A prominent example of the successful use of patient-reported outcomes to improve care for prostate cancer patients is the Martini Klinik in Germany.[11] At the Martini Klinik, patients are asked to complete a 13-page quality of life survey for cancer patients (QLQ-C30) and the International Index of Erectile Function (IIEF-5) before surgery, upon leaving hospital, upon removal of a urinary catheter, and at regular intervals thereafter (three months, and then one-year, two-years, and three-years after surgery).

In addition to using PROMs as part of routine care and follow up, Martini Klinik uses aggregate PROMs data (at the level of individual surgeons and the clinic as a whole) to support quality improvement. For example, when three Martini Klinik surgeons – informed by research by a group of Korean radiologists – adjusted their surgical technique with the aim of improving urinary continence rates, it was possible to measure the impact using PROMs data. Following adoption of the new technique, one-week urinary continence rates rose from 50% to 70% of patients. As a result, all Martini Klinik surgeons adopted the technique.

In 2012, the average one-year continence rate at the Martini Klinik was 93.5% - compared with 56.7% for Germany as a whole, indicating significant potential for best practice dissemination from Martini Klinik to other providers within Germany.

Using PRO variation for quality improvement: the NHS PROMs Programme

A powerful example of how data on PRO variation can support learning and quality improvement initiatives is provided by the NHS PROMs programme. The programme began in 2009 and requires all hospitals in England to collect specific PROs for hip and knee replacements, varicose veins surgery, and groin hernia surgery. The results, including identification of positive and negative outliers within

10 See 'Enhancing Value in European Health Systems: the role of outcomes measurement' (2016), pp.27-30, available at: http://www.eu-patient.eu/globalassets/policy/patientssafety/value-of-health-consensus-document.pdf

11 Porter, M., Deerberg-Wittram J., Marks C., 'Martini Klinik: Prostate Cancer Care', Harvard Business Review (June 2014),

England, are published transparently on the Health and Social Care Information Centre website (see Figure 1 below).

There are a variety of examples of how data from the NHS PROMs programme has been used to improve patient care. A particular success story is the improvement in outcomes following knee replacement at Northumbria NHS Foundation Trust (hereafter just 'Northumbria').[12]

The PROM instruments used in the NHS PROMs Programme to assess performance in relation to knee surgery are: the 'Oxford Knee Score' (OKS), which assesses function and pain after total knee replacement surgery, and the generic EQ-5D. In 2010-11 Northumbria was below the national average for health gain following total knee replacements.

At the same time, a Northumbria-based consultant orthopaedic surgeon was also part of a study group, which – in collaboration with the National Joint Register – examined national PROMs data for over 20,000 knee replacements between 2008 and 2011. The study group investigated the relationship between PROMs scores and a range of surgical factors, and showed that better scores could be linked to a particular implant brand. These findings were subsequently published in the *Journal of Bone and Joint Surgery*.

Northumbria began using *only* the implant brand that had been linked to better patient outcomes. Following the change, internal analysis showed a significant improvement in average OKS scores at Northumbria, and that improvement was subsequently reflected in the nationally reported PROMs data.

In 2010/11 the average health gain, as measured by the OKS, at Northumbria had been 14.68 – compared with a national average of 14.87. By 2013/14, the average health gain following hip replacement at Northumbria had increased to 17.31, compared with a national average of 16.25. That made Northumbria a positive outlier within England. Similar improvement was also seen in Northumbria's EQ-5D scores, and it is now a positive outlier within England on that measure as well.

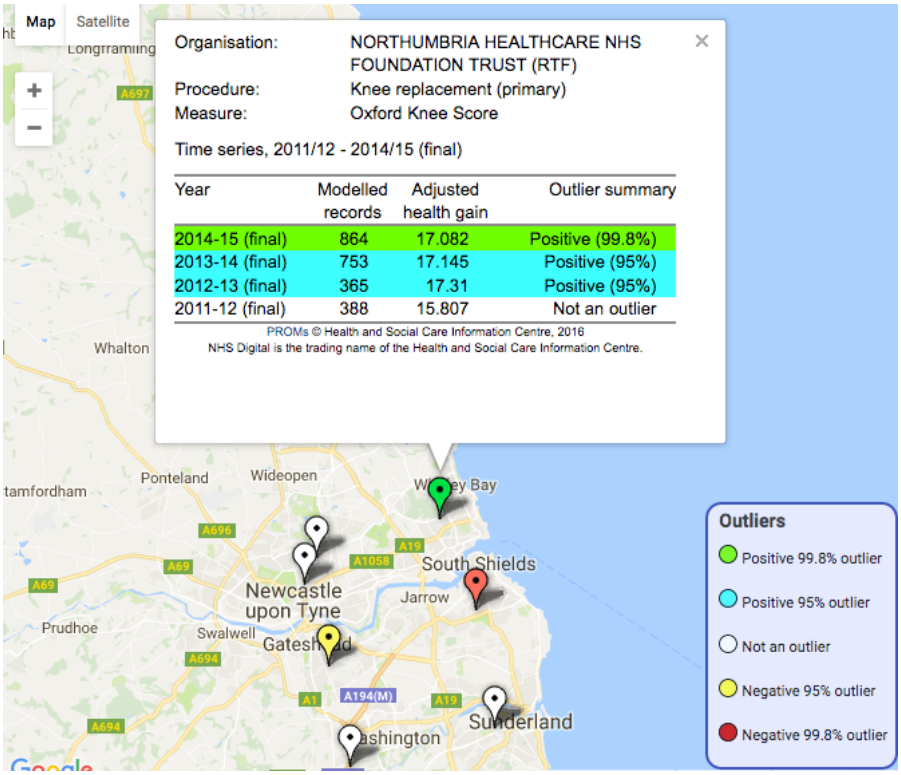


Figure 4: Performance improvement at Northumbria based on Oxford Knee Score

12 Partridge, T. et al., 'Improving patient reported outcome measures (PROMs) in total knee replacement by changing implant and preserving the infrapatella fatpad: a quality improvement project' BMJ Quality Improvement Report (2016; 5); Basser, M.R., 'Benefits Case Study: 'Patient Reported Outcome Measures' outputs (August 2015).

Northumbria has also used surgeon level variation data to standardise another aspect of surgical practice. Informed by research suggesting that preservation of the infra-patella fat pat (below and behind the knee) is associated with improved outcomes, Northumbria compared the PROMs scores of surgeons that routinely removed the fat pad with those that preserved it. The analysis showed that preservation of the fat pad resulted in significantly better health gain: 17.6 against 15.5 based on OKS. As a result, the majority of surgeons at Northumbria now routinely preserve the infra-patella fad pad.

Seizing the opportunity: the OECD Health Ministerial

The proposal to identify and develop patient-reported outcome measures that can be used across OECD countries, grew out of the OECD's High Level Reflection on Health Statistics, and builds on the work of the Health Care Quality Indictors (HCQI) project, which began in 2006.

The indicators developed through the HCQI project are now regularly reported in Health at a Glance, and can be used to analyse variations in quality and outcomes across countries. Data collected from the use of PROMs in OECD countries could similarly be used for PRO-based international indicators.

One of the crucial advantages of the OECDs indicator work is that it leads to standardised measurements and data collection practices – thus enabling variation analysis to be carried out at multiple levels (provider, regional, system). As noted in Part I of this paper, without international standardisation, the risk is that individual countries (and even hospitals) will adopt different measurements, and important opportunities to analyse variation and learn from best practices elsewhere will be lost.

A decision at OECD level to begin collecting PROMs data is also likely to generate a greater interest in and focus on patient-reported data at national level. At the moment, there is only fragmentary use of PROMs within countries, yet there is significant potential to improve care by routinely measuring and analysing PROs across a range of conditions.

The use of PRO measurement for quality improvement and performance monitoring is in its early stages, and methodology is still developing. In particular, it is important to understand how and when PROMs can be used to support: i. individual patient care; and ii. quality improvement programs.

A potential first step at OECD level may be to collect PROMs data relating to hip and knee replacements (arthroplasty). A member survey of the International Society of Arthroplasty Registries (ISAR) registries showed that 8 registries administered a PROMs program covering all elective hip or knee arthroplasty patients, and 6 registries collected PROMs for sample populations. The most common generic instruments used were the EQ-5D, SF-12 or the VR-12, while the most common specific PROMs were the HOOS, KOOS, OHS, OKS, WOMAC, and UCLA Activity Score.[13] While NHS PROMs initiative in England is not a formal clinical registry, it can be included in the list of programs that cover all elective hip or knee arthroplasty patients. ISAR has also recommended best practices in the selection, administration, and interpretation of PROMs for hip and knee arthroplasty registries.

Once methodology has been developed for the analysis of variation in relation to hip and knee replacement, the experience and knowledge acquired at OECD level can be used to expand the collection and analysis of PROs into other medical conditions. In particular, chronic diseases – the burden of which is rising globally – should be a high priority, in line with evidence on how and when they can be used to improve quality of care.

13 Rolfson, O., et al., *Patient-reported outcome measures in arthroplasty registries.* Acta orthopaedica, 2016. 87 Suppl 1: p. 3-8.

3 Transparency of Health Outcomes Variation

A driver for quality improvement, patient safety and patient empowerment

SUMMARY

- Transparency of results / variation in outcomes is a powerful tool for incentivising quality improvement and can empower patients to participate in decisions about their care.
- Where results have been made transparently available, such as in Sweden and Catalonia, there has been demonstrable quality improvement over time, particularly among initial low performers.
- For transparency to be most effective, results should be made easily understandable to non-experts and made widely accessible – for example via a website.

The potential of outcomes variation analysis as a tool for quality improvement can be further strengthened by the transparent publication of results. As the example from NHS PROMs programme illustrated, transparency creates a strong incentive for clinicians and managers to improve performance. The purpose of transparency should always be quality improvement (as opposed to naming and shaming based on relative performance).

Transparency can also be used to disseminate best practices, and thereby support quality improvement at the provider level. Making information about the results of treatments and care publicly available can also enable patients to better understand their condition and the potential outcomes of any treatments/interventions. It can inform patient choices about the types of care they wish to receive, and – where the health system permits this – where they wish to go for treatment.

The link between transparency and patient choice is especially important in relation to safety. If there are patient safety issues at a particular hospital/provider, it is vital that that information should be made available in order that patients can make informed choices. Transparency is also likely to be one of the most effective ways to ensure swift action where patient safety issues do arise.

To be successful in incentivising improvement and informing patient choice, health outcomes should be published in a way that is easy for non-experts to understand, as well as being easily accessible – e.g. through a website. Two of the best and most successful examples of transparency in Europe today are discussed further below: i. Regional Comparisons of Quality and Efficiency in Swedish Health Care; and ii. the 'Results Center' of the Catalan Health System Observatory.

Transparency in Sweden: 'Regional Comparisons of Quality and Efficiency'

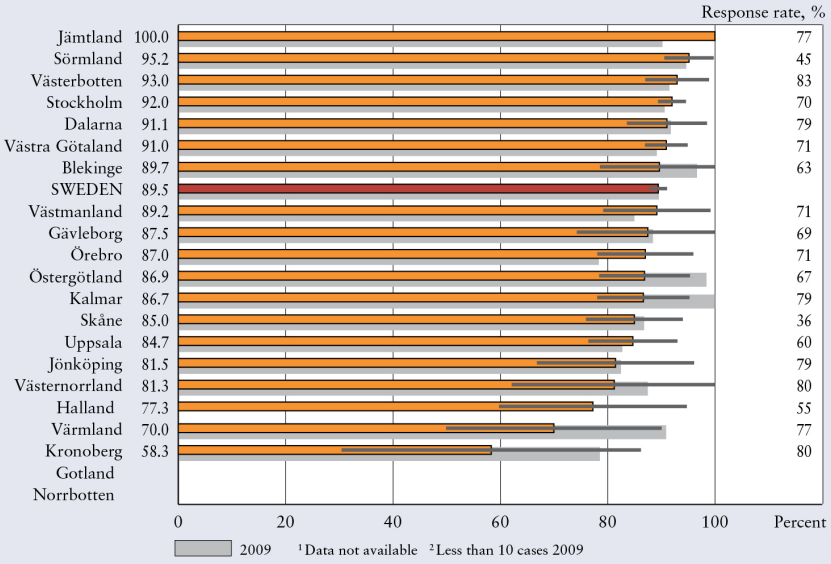
Regional Comparisons is a joint initiative by the Swedish Association of Local Authorities and Regions and the National Board of Health and Welfare. First published in 2006, and a product of the long tradition of quality registries in Sweden, it compares the performance of the twenty-one country councils and regions that are responsible for health care provision in Sweden.

The 2012 *Regional Comparisons* report made use of 169 indicators, grouped into thematic chapters – including: 'Overall indicators' (such as mortality); pregnancy, childbirth and neonatal care; gynaecological care; musculoskeletal diseases; diabetes care; cardiac care; stroke care; cancer care; psychiatric care; and surgery. For each indicator, performance by region is displayed in an accessible way. This is illustrated by Figure 2 below, which shows significant variation in the percentage of patients reporting complications and adverse events after hysterectomy.

The potential for transparency to drive performance improvement is exemplified by an example from cardiac care. In 2005, the Swedish heart attack registry created a quality index showing hospitals compliance with cardiac care guidelines. Between 2005 and 2007 (during which period the data was not public) hospitals improved their quality index scores by an annual average of 13%. Among hospitals with below average scores the improvement rate was only 7% (pointing to an increasing quality gap between high and low performing hospitals).

Following the introduction of Regional Comparisons in 2006 – when quality index scores and patient survival rates became public – this changed. In the period 2007 to 2009, the overall improvement rate increased to 22%. Moreover, the performance gap between the high and low performance hospitals was significantly reduced (below average hospitals improved their performance by as much as 40%). These improvements are also considered to have contributed to the decline in short and long-term mortality following heart attack.[14]

Figure 5: Variation in PROs following spinal stenosis surgery



Percentage of patients who reported that the pain in their legs had disappeared completely or was greatly improved one year after spinal stenosis surgery, 2011.

SWESPINE – The National Swedish Register For Lumbar Spine Surgery

14 G. Hagglund, 'Fine-Tuning Health Care – improved outcomes and cost efficiency using quality registries', Swedish Ministry of Health and Social Affairs Conference (May 2013)

Transparency in Catalonia: The Results Center

The Results Center of the Catalan Health System Observatory aims to be a reference tool for citizens, healthcare centres/hospitals, and administrators. Since 2009, a yearly report has been produced for hospitals, and reports are now also produced for primary care, long-term care, mental healthcare, and public health activities.

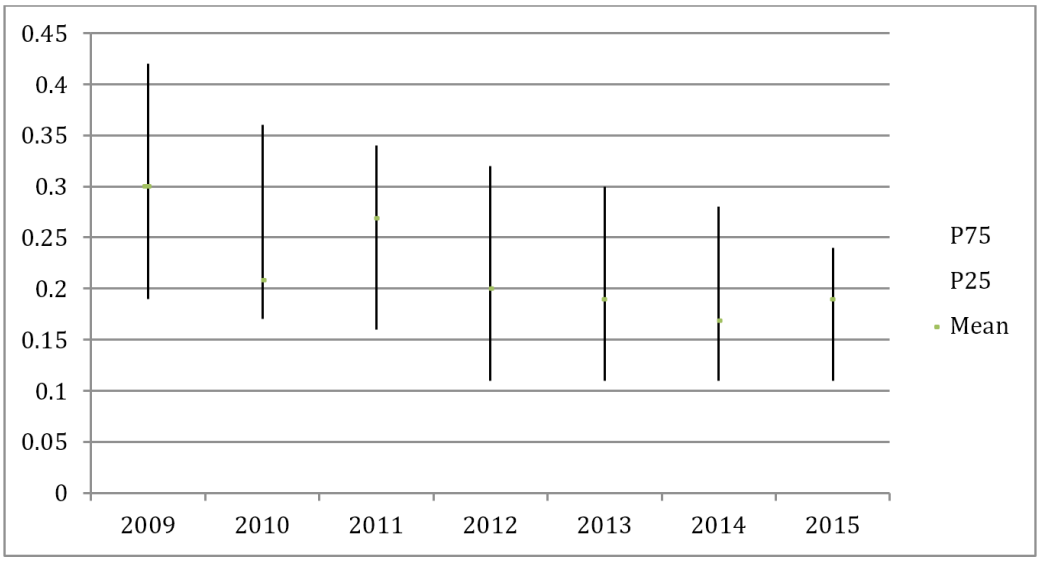
Each report employs around 60 quality indicators, grouped into thematic domains, such as: patient centred care; effectiveness; appropriateness; efficiency; and safety. Against each indicator, individual provider results are reported, and variation can be analysed. The results are also published in 'open data' format to ensure public accessibility (made possible by high quality electronic health information systems Catalonia).

As with cardiac care in Sweden, the contribution that transparency can make to performance improvement can be illustrated – in this case using a patient safety example: bacteremia incidence associated with central venous catheter (CVC).

Bacteremia is the presence of bacteria in the blood. Central-venous-catheter related bloodstream infections (defined as the presence of bacteremia) has been described as 'one of the most frequent, lethal, and costly complications of central venous catheterization'.[15] Figure 3 below demonstrates improvement over time since the first Results Center report in 2009.

Figure 6: Incidence of bacteremia associated with CVC. Hospitals of more than 500 beds, 2009-15

	2009	2010	2011	2012	2013	2014	2015
75th percentile (P75)	0,42	0,36	0,34	0,32	0,30	0,28	0,24
25th percentile (P25)	0,19	0,17	0,16	0,11	0,11	0,11	0,11
Mean	0,30	0,21	0,27	0,20	0,19	0,17	0,19



Incidence = (Number of bacteremias in a year × 1.000) / number of stays.

15 R. Gaholt et al. 'Catheter-related bloodstream infections' International Journal of Critical Illness and Injuryu Science 2014 Apr-Jun; 4(2): 162–167.

CASE STUDY 4: THE 'RESULTS CENTRE' OF THE CATALAN HEALTHCARE SYSTEM

By Anna García Altés, Catalan Health System Observatory

The Results Centre of the Catalan healthcare system measures and disseminates the results achieved by the different healthcare centres in Catalonia. Comparison between healthcare centres and the transparent feedback of results to professionals and citizens contributes directly to improved results.

Improving the transparency of the health system contributes to improvements in patient and population health through better policies, organisational management, and clinical practices. Transparency facilitates a co-responsible decision making process, and improves the quality of care provided to the population

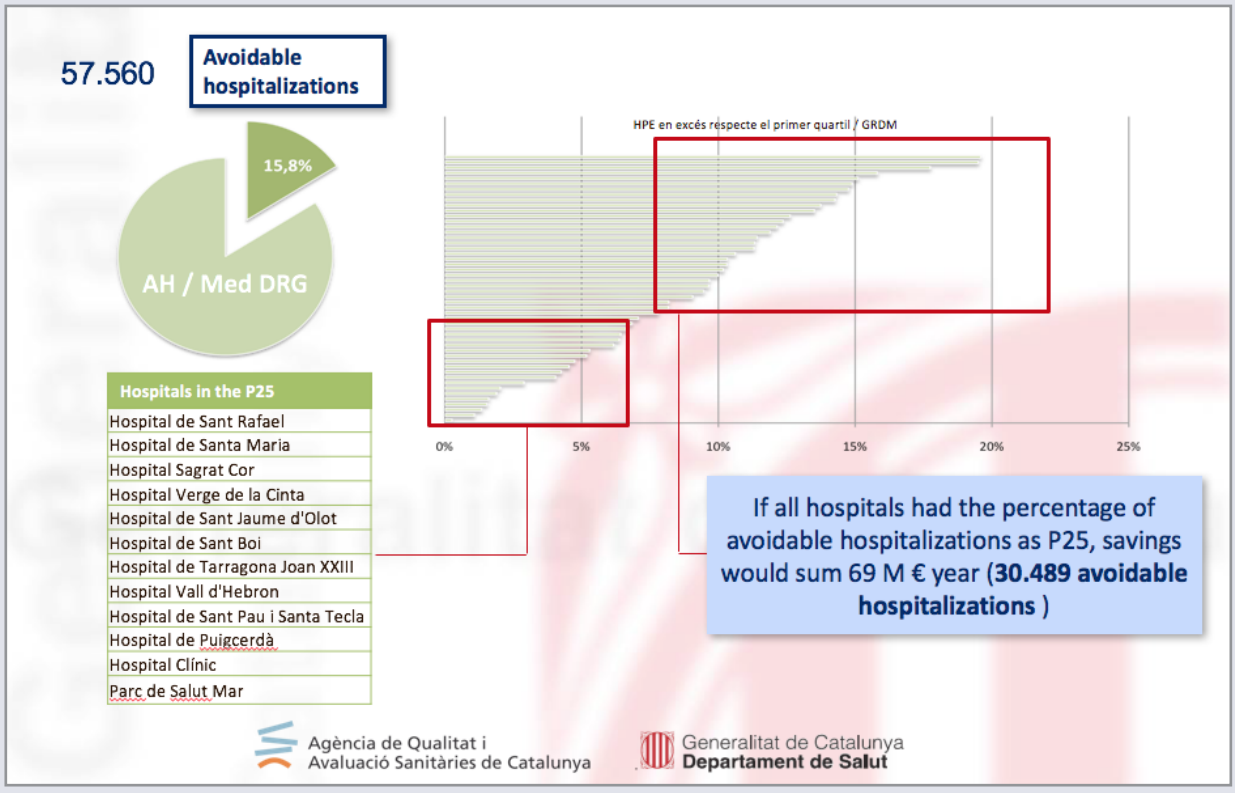
The Results Centre offers a comprehensive and transparent system of measurement and evaluation of the results achieved by the different accountable agents that make up the Catalan health care system. It uses comparison (benchmarking) between health care centres, and disseminates best practices.

For citizens, it promotes a wider and better understanding of the field of health, and allows them to interact with the healthcare system and participate in decisions that affect their health.

For healthcare centres, it enables results to be compared, identification and sharing of best practices, and opportunities for improvement and cooperation between institutions.

For health administrators, the reports of the Results Centre respond to the demand for transparency in health policy decisions, as well as for accountability in the use of resources.

Figure 7: The Results Center
Avoidable Hospital Admissions



Since 2012, a yearly report is produced for hospitals, primary care, long-term care, mental healthcare, public health activities, and territory. For each topic, around 60 quality indicators are measured, regarding patient centred care, effectiveness, appropriateness, efficiency, safety, IT and communication systems.

For each indicator, results are reported by provider. The experiences of some of the centres with better results, and the opinion of experts are also incorporated, and a version for citizens is produced. All detailed results are available in tables, together with technical definitions (http://observatorisalut.gencat.cat).

In addition, the results are also made available to citizens in open data format (see Figure 8), responding to the objective of the Catalan government for transparency and proximity to citizens by establishing the most suitable and simple ways to access public information in equal conditions. All this is possible due to the high level of development of health information systems, all of them in electronic format.

Figure 8: Open Data Format

Drive de OSSC ▸ Hospitals_2015 Adequacio_Hospitals_def_2015

Indicadors d'adequació per un hospital

Hospital Universitari Vall d'Hebron

Seleccioneu un ÚNIC hospital

Unitat Proveïdora Hospital versitari Vall d'Hebron

Indicador	Dones	Homes	Total	Índex	Mitjana
Ingressos urgents (%)	67.1	65.8	66.5		67.0
Urgències ingressades (%)	14.6	16.0	15.2		10.8
Cesàries (%)			21.0	0.9	18.1
Pneumonies sense complicacions (%)	9.3	7.5	8.0		9.1
Nadons amb gran prematuritat (%)	5.24	5.01	5.19		1.46
Urgències de nivell MAT 1, 2 i 3 (%)	32.7	33.4	33.0		35.7
Ingressos en hospitalització a domicili (%)	1.4	2.1	1.7		1.6
Codi infart - Temps entrada sala-baló (mediana en minuts)			25.0		23.0
Codi infart - Pacients en codi infart atesos en menys de 120 minuts (ECG-baló)			62.8		67.3
Racat - Temps fins la intervenció per fractura de maluc (mediana en dies)			3.0		3.0
Racat - Temps fins la intervenció per fractura de maluc (3r quartil en dies)			5.0		2.0

Engaging healthcare professionals is essential to move towards better clinical practice by identifying and sharing best practices. To pursue this objective, since 2014 the Results Centre has a committee of experts made up of people with long experience in the fields of clinical knowledge, clinical management, health economics, public health, research, and IT and communication systems. Working groups are established for each topic, to suggest indicators and topics to analyse, and reports are discussed with professionals and scientific societies.

This is a pioneering initiative in Spain, and is aligned with the most advanced countries in terms of policies for transparency and accountability.

Conclusion and Call to Action

The analysis of variation in health outcomes can make a crucial contribution to improving quality of care and generating better value within health systems. A greater focus on variation is thus of direct interest to:

- ***governments***: by enabling the identification of sub-optimal and low-value care
- ***health care professionals and managers***: by supporting quality improvement based on outcomes data
- ***patients***: through better quality of care and – especially when combined with transparency – as a tool for greater health literacy and patient empowerment

A key pre-requisite to variation analysis is standardised measurements and data collection/coding practices. Organisations and initiatives such as ICHOM, OMERACT, and COMET are already advancing this agenda by developing standardised measures and measurement sets.

In a number of countries, projects and initiatives are also focusing on transparency – as seen in the NHS PROMs programme, Regional Comparisons of Quality and Efficiency in Swedish Health Care, and the Results Center of the Catalan Health Systems Observatory.

The OECD Health Ministerial on 16-17 January 2017 will be an important opportunity to make further progress by initiating work to identify appropriate PROMs and to collect patient-reported outcome data across OECD countries. In addition to marking an important step forward in standardisation, greater use of PROMs would also contribute to more patient-centred health care by ensuring a stronger focus on health outcomes from the patient perspective.

Both at the OECD ministerial and afterwards, governments and health ministries can further enable progress by:

- encouraging and supporting routine collection of health outcomes data within national health systems;
- promoting the standardisation of outcomes measures internationally, as well as data collection/coding practices, to ensure that opportunities to analyse variation across countries are not lost;
- by making (case-mix and risk adjusted) results/variation transparently available;
- by introducing data governance frameworks that enable the use of health data for research and quality improvement, whilst protecting personal information.

Variation analysis is a powerful tool for health care improvement. Governments and stakeholders must now work together to ensure that it flourishes.

The Value of Health
Improving Outcomes