Public Policy Institute for Wales
Sefydliad Polisi Cyhoeddus i Gymru

International Experience of Prioritisation of Elective Surgery

June 2015

International Experience of Prioritisation of Elective Surgery: A Rapid Evidence Review

Pippa Anderson and Kateryna Onishchenko

Swansea Centre for Health Economics
Swansea University

For further information please contact:

Dan Bristow
Public Policy Institute for Wales
Tel: 029 2087 5345
Email: info@ppiw.org.uk

Contents

Summary

- Given the unprecedented financial pressures on the National Health Service in Wales, difficult decisions have to be made about how to allocate and use resources. The objectives of this research were to review international experience of approaches to prioritising elective surgery and draw out key issues and useful approaches that may be relevant for implementation in Wales.
- All developed health systems use strategies to assess and prioritise health care interventions, in recognition of the need to manage the demands for healthcare. In the context of elective surgery, three types of strategy have been used:
    - Waiting time targets: where all of those who are considered eligible for treatment are subject (in theory) to the same maximum waiting time.
    - Scoring systems: where clinicians use pre-defined criteria to ‘score’ patients’ in terms of need and anticipated clinical benefit. These scores determine whether a patient receives treatment.
    - Guidelines: where guidelines, informed by evidence based best practice, are used to determine the likely effectiveness (and cost effectiveness) of specific treatments.
- All these approaches can have implementation issues and challenges. Waiting time targets can distort clinical priorities and resource allocations and may not create equitable service delivery across different socio-economic groups (driven by information asymmetry, choices of location). Scoring systems can be subject to abuse and provider manipulation as well as non-adoption by some surgeons leading to unequal treatment. Guideline programmes can drive evidence based best practice but there is limited evidence of effectiveness on prioritisation of elective surgery. Prior attempts to affect clinical decisions through guidance suggest that to be successful they require intelligent implementation, training programmes, appropriate use of incentives and dedicated tools for monitoring outcomes using routine electronic health data.
- If a guideline approach is the best option for prioritising elective surgery in Wales it will require: engagement with the ‘influencers’ in providing and delivering healthcare in Wales, both within Government and in the healthcare community; patient and public engagement to communicate any changes and their justification; and improvement in data identification, collection and utilisation to enable monitoring, transparency and accountability.

Introduction

The Welsh National Health Service (NHS) is currently “facing the twin challenges of rising costs and increasing demand, while continuing to improve the quality of care” (Alyward, 2014). The Minister for Health and Social Services has articulated a reform agenda for the Welsh NHS based on the principles of ‘prudent healthcare’; that is healthcare that responds to the needs of patients whilst actively avoiding wasteful care that cannot be clearly justified. The prudent healthcare agenda aims to address the problem of projected increases in demand for healthcare services in a time of limited (or declining) available resources.

In this context, the Minister for Health and Social Services asked the Public Policy Institute for Wales (PPIW) to undertake a rapid review of international experience of approaches to prioritising elective surgery. Identifying jurisdictions similar to Wales, this report assesses the impact of different systems of prioritisation (both on patients and on the healthcare system) and discusses factors that have contributed to the success (or otherwise) of different approaches.

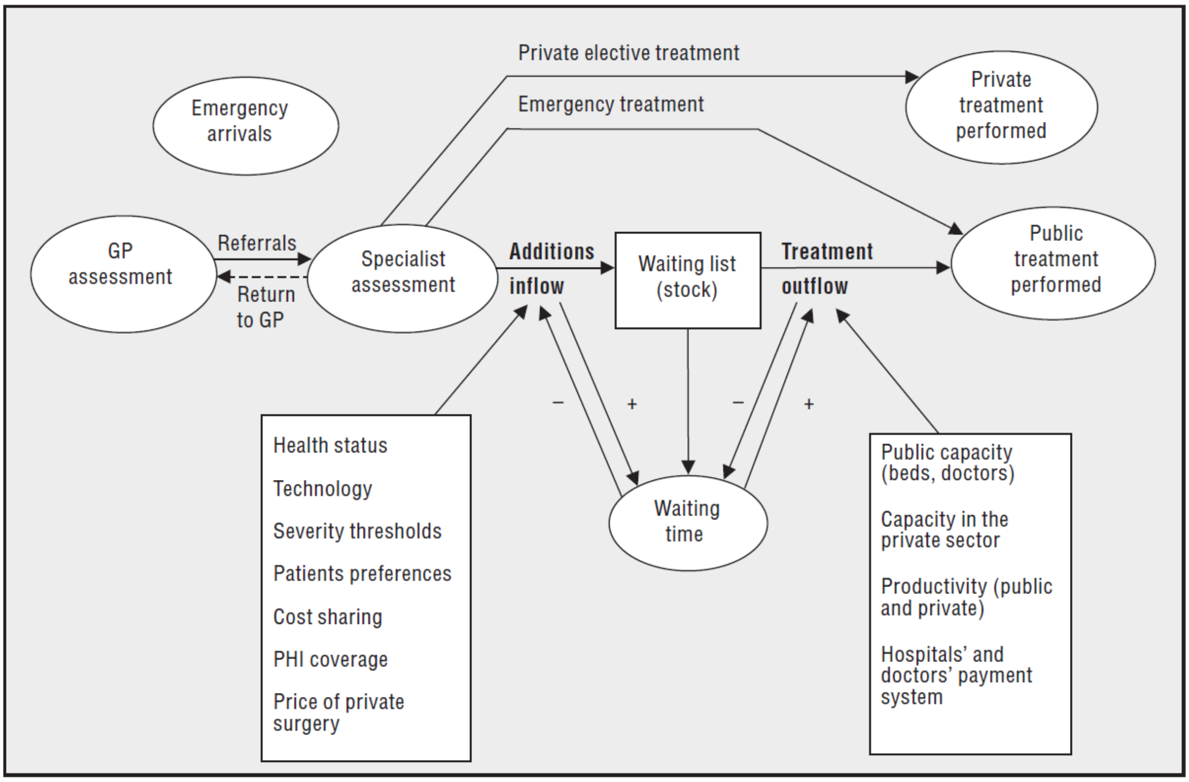
Approaches to Prioritising Elective Treatment

In the context of high demand and restricted supply, any approach to prioritisation of treatment will result in patients waiting to receive treatment.

Waiting lists and associated waiting times (on the list) for health care services, including primary care, out-patient specialist care, emergency care, cancer and elective care, have thus become a prominent policy issue in many of the Organisation for Economic Cooperation and Development (OECD) countries. More than half of OECD countries have waiting times above three months for elective treatments (Siciliani et al., 2013). Various policies have been implemented in recent years in order to reduce waiting times. The conceptual framework in Figure 1 below helps to explain the flow of health care and the influence of waiting times in elective treatment (Siciliani et al., 2013).

Waiting lists for elective surgery occur when a patient is deemed eligible for surgery and will get a date for their surgery. “If demand for elective procedures is greater than supply, a queue will form and patients will have to wait”. Waiting lists enable efficient use of relatively “expensive hospital services, like surgical facilities; can be used at full capacity. Hospitals have to carry out a complex balancing act between emergency and elective services and lulls in emergency surgery can be used to provide elective care” (Christiansen & Bech, 2013, p.unknown). In effect this is a crude approach to prioritisation of elective surgery; the urgent come first.

Figure 1. Conceptual framework of waiting times for elective treatment



Source: Taken from Siciliani and Hurst, 2005

The NHS waiting list policies across all four UK countries have shifted from a focus on waiting lists to a focus on waiting times (on a waiting list). This is because people on a waiting list "are more concerned about the speed with which the queue moves and the time spent on the list, rather than the number of people waiting" in front of them (Dimakou et al., 2009, p.39).

Waiting times may also affect clinical outcomes. There is some evidence that experiencing waiting times for emergency and urgent procedures, such as coronary artery bypass graft (CABG) can worsen symptoms, deteriorate patients' condition and, as a result lead, to poorer health outcomes (Sobolev et al., 2008). This "may also increase the probability of pre-operative death (while waiting) and unplanned emergency admissions (Rexius et al., 2005, Sobolev et al., 2006, Sobolev et al., 2012, Sobolev and Kuramoto, 2010) "(Moscelli, Siciliani & Tonei, 2015, p.152). However, for (perceived) less urgent procedures, such as hip and knee replacement, the evidence is mixed and waiting for treatment does not necessarily lead to the deterioration of health outcomes but can still generate certain disutility to patients, pain and anxieties while waiting (Hirvonen et al., 2009).

This review of the literature identified three approaches to prioritising elective surgery:

- **Waiting time targets:** where all of those who are considered eligible for treatment on a waiting list are subject (in theory) to the same maximum waiting time;
- **Scoring systems:** where clinicians use pre-defined criteria to 'score' patients' anticipated clinical benefit, and these scores determine whether a patient receives treatment and, if so, their relative level of need;
- **Guidelines:** where guidelines, informed by evidence based best practice, are used to determine the likely effectiveness (and cost effectiveness) of specific treatments.

In what follows, international examples of each of these approaches to prioritising elective surgery will be discussed focussing on those most applicable to the jurisdictional context in Wales. Evidence about the impacts of these different approaches will be reviewed and the implications important for consideration in Wales discussed.

Waiting Time Targets

The waiting time on the list depends on the balances:

> "between additions and removals from the list". This "may be due to short-term fluctuations in demand, especially from emergency patients, who take priority for beds and staff in general hospitals, and to systematic imbalances between demand and supply. Many OECD countries have a national strategy to address waiting times, which are reported as a significant issue in several parts of the health system. …There is a group of OECD countries where waiting times are not a significant policy issue (including Luxembourg, the United States, Switzerland, Germany, France, Belgium, Japan and Korea) (Siciliani and Hurst, 2013)…All of these countries (except Korea) spend above the OECD average, where spending is measured by public health expenditure per capita… However, several countries where waiting times are a significant policy issue also spend above the OECD average (e.g. Norway, Denmark, Canada, United Kingdom), while others spend below average (for example Italy, Spain, Portugal). Therefore, high expenditure is not a guarantee of low waiting times" (Christiansen & Bech, 2013, p.unknown).

Long waiting times can be politically unpopular. Siciliani and colleagues (Siciliani et al., 2013) suggest that governments may feel that "it is critical to address the tail of those waiting for a long time. However", they also suggest there is an argument "that patients who are below a certain level of need should not be offered the service rather than put on a waiting list. Many of these patients may have an unfavourable cost/benefit ratio" (relatively high cost per quality adjusted life year) “such that the cost of their treatment is not justified, since the public funding could be used” better elsewhere (Christiansen & Bech, 2013, p.unknown).

Since the publication of the NHS Plan of 2000, the main strategy to manage waiting times in England combined a number of supply and demand-side strategies. Health care providers are required to offer patients an appointment for the elective treatment within 18 weeks of referral. Providers receive rewards and penalties for successful and unsuccessful performance.

Research undertaken by Siciliani and colleagues suggests that some countries, such as Norway and Australia, have adopted a blended approach where waiting time ‘guarantees’ i.e. a promise of getting treatment within a certain time period – in effect a waiting time target - are linked to clinical prioritisation categories that in turn are based on the level of need. In the Netherlands, evidence suggests that implementing such prioritisation practice has led to a reduction in long waits for elective surgery as well reducing the mean waiting time. In light of this evidence a waiting time ‘guarantee’ may be a promising element of a strategy for prioritising elective surgery. However, using this approach also requires robust tools for defining clinical priorities which are valid and reliable in measuring clinical needs of the patient (patient population) and predicting the benefit in terms of delivering improved patient outcomes (Siciliani et al., 2013). Further exploration of the use of such tools is examined next in the section on scoring systems.

Evidence of impact

Setting waiting list and waiting time targets for in-patient admissions (which includes elective surgery) appears to have worked in England. Data show the inpatient waiting time target for selected ‘indicator’ elective surgeries had progressively reduced from initial levels in 2000, to 18 weeks (the target level) from initial referral by the end of 2008 (Dimakou et al., 2009).

However, according to a recent Health Foundation and Nuffield Trust report comparing the four UK health systems in 2014, it is clear that waiting times for elective surgery in Wales have been increasing and are much longer than England (Bevan et al., 2014).

> “For example, in 2012/13, patients in Wales waited on average about 170 days for a hip or knee replacement compared with about 70 days in England and Scotland. Comparing England, Scotland and Wales in the period of austerity, waiting times for common procedures appear to be lengthening disproportionately in Wales. The reasons are unclear, although the decision to cut rather than maintain NHS spending in real terms may have affected waiting times.

> The performance of NHS in England was better than in the other countries across a range of, mostly efficiency, indicators... There are few indicators on which a devolved country does better than England or its North East region", although Scotland has made significant improvements "in its performance on waiting times... Median waiting times for common elective procedures fell significantly in Scotland and England until 2009/10" creating less of a difference and waiting times have become shorter than in Northern Ireland and Wales; but this result is based on different centrally set targets (Bevan et al., 2014, p. 7).[1]

Waiting lists are (theoretically), a non-price rationing instrument intended to grant equal access to services to the patients with different socio-economic status However, it has been demonstrated that patients with higher socioeconomic status "tend to wait less for publicly funded hospital care than those patients with lower socioeconomic status (Siciliani and Verzulli, 2009, Cooper et al., 2009, Laudicella et al., 2012)" (Christiansen & Bech, 2013, p.unknown). Thus waiting lists intended to create equitable distribution in practice may be less equitable than they appear. This might be due to differing access to information; individuals with higher socioeconomic status have better social networks and can engage more actively with the system and exercise pressure due to better knowledge of their rights and the range of available services in different hospitals, resulting in better and faster access of these patients to public health services (Cooper et al., 2009, Laudicella et al., 2012).

In addition, lower educational level has been shown to impact upon equity of access where waiting lists exist. In Italy, median waiting times for patient with lower educational achievement were higher than for patients with higher educational achievement for CABG, angioplasty, coronartography, endarterectomy, hip replacement and cholecystectomy. This can, perhaps, also be explained by the heterogeneity of access to information, which may be due to lower educational attainment, but also by the variability in transaction costs when choosing the healthcare provider by people in different socio-economic groups. (Petrelli et al., 2012).

Furthermore, there is evidence of inequality for hip and knee replacement across different socio-demographic groups in the UK (Judge et al., 2009a). There is also evidence of UK rates

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[1] 'Between 2005/06 and 2009/10, all four countries achieved substantial reductions in median waiting times for most procedures, including a halving of the median wait for hip and knee replacement in England and Scotland. The 90th percentile decreased over the period from 2005/06 to 2012/13 for most of the procedures in England and Scotland (except for CABG surgery in England). In Wales and Northern Ireland, there were dramatic reductions in the 90th percentile from 2005/06 to 2009/10 for all procedures, except for cataract surgery in Wales, which increased. However, since 2009/10 in Wales there have been increases in the 90th percentile for all procedures. There are no data after 2009/10 for Northern Ireland' (Bevan et al. 2014, p11).

of need for hip replacement in the lowest social class being greater. Need was greatest for people living in more deprived areas. (Judge et al., 2009b). Inequalities occur over parts of the waiting time distribution with the education gradient becoming smaller for very long waiting times but there is no evidence that differences in severity explain the social gradient in waiting times (Laudicella et al., 2012).

Evidence from Australia also suggests that waiting time targets can lead to unjustified geographic variation among patients' waiting times. In particular, more favourable treatment "of patients who reside in remote areas and discrimination in favour of patients residing in particular Area Health Services" has been observed (Johar et al., 2012, p1).

As with any public service target, there is a risk that targets distort the way that a service is provided and the way that resources are allocated. 'Gaming' of waiting times and redefining waiting times by hospital managers can be observed (Bevan et al., 2014). Setting waiting time targets can reduce the average waiting time but, as an unintended consequence, can encourage prioritisation based on the need (by providers) to meet the targets rather than on an assessment of clinical need, with consequent effects on the distribution of the waiting times and unintended impacts on patients' health outcomes.

In order to avoid breaching waiting time targets, evidence suggests gaming is prevalent; e.g. that the peak of admission happens usually before the maximum waiting time deadline, although the probability of admission becomes very small beyond this target (Dimakou et al., 2009). Wide variation in waiting time distribution and admission tactics by hospital, by speciality and by procedure was observed in Dimakou and colleagues' analysis and it was suggested that it can be explained by managerial influence or patient characteristics. I.e. it may be tactically successful to bring in low risk, shorter surgeries to diminish waiting lists rather than attend to clinical priorities and more complex surgeries.

Summary

Waiting time targets have been used with some success as an approach to prioritising elective surgery, for example in England and The Netherlands. However, the evidence reviewed in this report suggests that this approach can unintentionally create unequal access to healthcare, with those from a higher socio-economic group, for example, being treated faster than those from a low socio-economic group. Geographical and educational level inequality was also found. Furthermore, it is possible that installing waiting time targets and rewards and sanctions based on these can distort clinical priorities. If waiting list management through waiting time targets are to be used as an approach to prioritising elective surgery measures need to be put in place to ensure it is not to the detriment of certain groups of people or the quality of clinical practice.

Scoring Systems

Scoring systems for elective surgery aim, in principle, to enable priority to be given to those in most need and to those who stand to gain the greatest clinical benefit.

New Zealand has a public tax funded health care system where there has been a history of long waiting lists for some elective surgeries, historically with no agreed criteria for admission onto an elective surgery waiting list. As a result, New Zealand has been at the forefront in developing demand-side policies, where a patient requiring elective surgery is assessed by the specialist using clinical prioritisation tools based on National Clinical Priority Criteria (NCPC)[2]. In practice, the NCPC are used in a patient consultation. The health professional scores the patient condition against pre-defined criteria. In theory, this allows for an objective assessment of patient need. Higher scores imply greater need, which leads to priority access to treatment and a higher place on the waiting list. Patients with a score lower than a certain threshold are not placed on the waiting list and are directed back to the referring primary care provider.

The perceived success of the approach led to collaboration between the researchers who refined the process in New Zealand together with health care decision makers in Canada, to enable the implementation of the approach in two of the Canadian Western provinces (Hansen et al., 2012). Despite the challenge of implementing such a wide-ranging system of clinical prioritisation at national level, the approach has led to a decrease in the number awaiting treatments in New Zealand (Siciliani et al., 2013).

The examples in New Zealand and Canada have inspired the creation of other operational research and more quantitative (e.g. discreet event simulation) approaches in Spain (Solans-Domènecha et al., 2013), the USA (Min and Yih, 2010), and the UK (Brasted, 2008). Our review revealed no reports of the implementation of these simulation models or their effectiveness in prioritising patients for elective surgery or reducing waiting, but further research could be more informative.

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2 The NCPC was developed in consultation with clinical leaders. It seeks to assess the relative severity of the disease and the urgency of the treatment. As a result of initial criticism of the process, the NCPC were developed through extensive consultation with clinicians and patient groups. See Derrett et al (2013) and Hansen et al (2012) for further details.

Evidence of impact

Explicit scoring systems are intended to standardise the prioritisation behaviour of health professionals, based on clear evidence-based criteria and ensure that patients in urgent need are admitted first. Scoring systems are purported to provide transparency of the process of decision making, based on evidence of need. However, there can be challenging issues for the implementation of scoring systems. Current evidence suggests that the presence of such systems at the procedural level has not produced systematic, clinically based prioritisation behaviour among clinicians; with continuing preferential treatment given to ‘private’ patients not justified by clinical needs. Such findings raises a potential question of the utility and value of such systems in improving timely and equitable access to elective surgery (Johar, 2014).

In 2006, (about two years after the revised NCPC scheme was introduced in New Zealand), Derret and colleagues initiated a review of the scheme using the New Zealand media and parliamentary reports on the scheme (and the related surgery booking system for people placed on the waiting list) as the source material (Derrett et al., 2013). The review suggests that the scoring system has not achieved the goal of ensuring national consistency and that the system (during the period of 2000-2006) seems as problematic as the old waiting list system. Barriers to the success of the system seemed to be that local variation occurred as resources to deliver surgery varied for good or bad reasons, and that surgeons varied in their adherence to the system. The authors also reported on a range of studies exposing the issues that can arise with executing the scoring system; principally that clinicians may ‘game the system’ (i.e. inflate the score) to produce a desirable outcome for the patient, and that there are reliability issues given that the scoring is a subjective process. The authors also cite the 2011 New Zealand Auditor General’s report which revealed continuing difficulties with appropriate prioritisation, equitable access and national consistency; for example when specific patient scores in one District Health Board were compared, between 2006 and 2010, for patients who had received cardiac, general gynaecology, and hip and knee replacement surgery, some patients had waited considerably longer than other patients with similar scores (Controller, 2011).

Summary

The scoring system approach to prioritising elective surgery has most notably been applied in New Zealand. Evidence suggests that the approach has not produced appropriate and consistent clincally-based prioritisation behaviour among practitioners. The system is open to ’gaming’, non-compliance, and variation based on local resource availability.

Guidelines

Scoring systems which enable prioritisation of patients in terms of their need for (surgical) interventions have merits but also disadvantages as they can be gamed/manipulated or evaded (Hansen et al., 2012). Evidence based international and nationally ratified and accepted best practice guidelines for surgical interventions are an alternative to scoring algorithms. Developing evidence based guidelines to drive quality improvement, implement best clinical practice (including elective surgery) and improve health outcomes is gathering momentum. Here we look at three examples from the UK, New Zealand and Sweden.

Internationally, professional organisations have taken a leadership role in developing guidelines for medical and surgical interventions. In the UK, there has been a tradition of the Royal Colleges developing and publishing guidelines. Since the early 2000's, the National Institute for Health and Care Excellence (NICE) has also produced an extensive portfolio of rigorous, evidence based guidelines through a structured commissioning and development process. This process has been extended recently to include interventional procedures (NICE, 2014b). NICE interventional procedures guidance - which includes elective surgical procedures - covers the safety of the procedure, effectiveness in "routine use (or whether special arrangements are needed for patient consent". However whilst "many of the procedures that NICE investigates are new, they also look at established procedures if there is uncertainty about their safety" or effectiveness (https://www.nice.org.uk/about/what-we-do/our-programmes/nice-guidance/nice-interventional-procedures-guidance).

Adherence to the NICE guidelines is not mandatory in England or Wales. Nor does the NICE interventional procedures guidance "consider how much the procedures would cost the NHS, or whether the NHS should allocate funding for them. These decisions are made at a local NHS level and usually on a case-by-case basis". In practice, "this means that if NICE has issued guidance recommending any given interventional procedure, the NHS is not obliged to provide it", nor is there a "legal requirement to comply with the recommendations NICE makes, although it is considered best clinical practice for the NHS" in England and Wales, "to do so" (www.nice.org.uk).

Over time NICE has become aware of the lack of adherence to guidelines and what the challenges are for implementation of guidelines. Thus, more recently, NICE has produced material available on the NICE website to support practitioners responsible for driving and delivering the changes necessary to implement guidelines. Among these is a guide 'How to change practice' (NICE, 2007) and other resources. Much of this material is based on early work by Mitchie and colleagues (Mitchie et al., 2013), reviewed in a later section in this report covering implementation issues.

To increase the impact of guidelines, there has been an extension of the NICE guidelines process via the production of NICE Quality Standards (NICE, 2014a). These are concise sets of prioritised statements designed to drive measurable quality improvements within a particular area of health or care (see Appendix for an example). “They are derived from the best available evidence such as NICE guidance and other evidence sources accredited by NICE. They are developed independently by NICE, in collaboration with health and social care professionals, their partners and”, importantly, “service users” (https://www.nice.org.uk/standards-and-indicators). These shorter more accessible guideline based resources are intended to enable improved dissemination and awareness. The standards address some elective surgery procedures (hip and knee replacement for example) and will likely address more as the process develops.

A potentially useful approach to guideline based commissioning and development for elective and established surgeries has been initiated by the Royal College of Surgeons of England (in partnership with NICE). The intention of these is that guidelines based on commissioning needs could drive improvement in standards and ensure the right people are being offered the right surgery at the right time (RCS, 2014). These “commissioning guides are designed to assist clinical commissioning groups (CCGs) in England to make decisions about appropriate healthcare for specific clinical circumstances and fulfil their obligation to commission healthcare for their population that meets the domains in the NHS Outcomes Framework” (Department of Health, 2014). In essence, the guidance is intended to characterise the patients by need and priority, enable engagement with commissioners and patients not only to establish priorities but also to ensure best practice and good outcomes for patients.

In New Zealand, the National Health Committee (NHC) is an independent statutory body and supports development of guidelines and evidence based practice. The NHC “role is to assist the health and disability sector to spend its funding in the most effective way and enable it to continue to improve the health of New Zealanders within the country’s financial resources. The NHC is charged with prioritising new and existing health technologies and making recommendations to the Minister of Health” (http://www.health.govt.nz/about-ministry/ministry-health-websites/national-health-committee). The New Zealand Government requires that all new diagnostic and treatment (non-pharmaceutical) services and significant expansions of existing services are referred to the NHC. The NHC also provides advice on what technologies are obsolete or no longer providing value for money for New Zealanders. First impressions might intimate that the NHC is a similar body to NICE in that it undertakes

Health Technology Assessments. But on the face of it and according to Mr Colin Ferguson's report (Ferguson, 2013), the NHC seems more nimble than NICE. The NHC draws on advisory committees for advice rather than running the considerable raft of programmes undertaken by NICE. In addition, the NHC has strong clinical leadership and representation from the District Health Boards. Despite the fact that the Terms of Reference allow the Minister for Health to remove NHC members from office it seems that in practice it is semi-detached from government and political imperatives (NHC, 2014).

In Sweden, the National Board for Health and Welfare (Socialstyrelsen) appears similar in role and function to the New Zealand NHC, although the leadership is appointed by government. Socialstyrelsen "is a government agency under the Ministry of Health and Social Affairs, with a very wide range of activities and many different duties within the fields of social services, health and medical services, environmental health, communicable disease prevention and epidemiology (Socialstyrelsen, 2014). The majority of their "activities focus on supporting staff, managers and decision-makers in" these areas and "support and exert influence in many different ways". They:

- "collect, compile, analyse and pass on information";
- "develop standards based on legislation and the information collected";
- maintain "health data registers and official statistics".

Sociastyrelsen intend that their guidelines are used by the Swedish "county councils (Landsting), the regions and the municipalities that make decisions concerning public health and medical care, dental care and social services. Politicians, senior executives and managers as well as the personnel in medical care and social services" should also (ideally) "use the guidelines as support for different decisions". In their guidelines, the Socialstyrelsen also, where relevant, recommend that the Swedish Health and Medical Care Services and Social Services should invest more resources within certain areas more than in others. Their recommendation is that "particular conditions and interventions that have a high ranking, are ones where more resources should be invested whereas fewer or no resources should be invested in the conditions and interventions that have a low ranking". On the Socialstyrelsen website it is explicitly stated: 'Where resources are limited they should be used for those who need them most" (Socialstyrelsen, 2014).

The guidelines are intended to be "used as a support for:

- decisions on resource allocation within and between different groups and operations;
- decisions about operational planning;
- decisions about organisation of the different activities;

- decisions on regional and local medical care programmes;
- individual decisions made by e.g. doctors, case officers within social services or dentists in the consultations with the patients or users" (http://www.socialstyrelsen.se/nationalguidelines/howtheguidelinesmaybeused)

Data and monitoring

Adherence to guidelines is potentially beset with some of the challenges faced by scoring systems, particularly non-compliance and clinically unjustified variation in provision. One of the ways in which those pursuing a guideline approach have sought to overcome this is by developing data-driven monitoring tools.

To enable measurement and effect consequences for those who fall short, "NICE and NHS England have developed a mapping document to show how NICE Quality Standards can", in practice, "support quality improvement in relation to the NHS Outcomes Framework". This initiative however "recognises the role of measurement in this process and highlights links with the Clinical Commissioning Group Outcome Indicator Set (CCGOIS)" (https://www.nice.org.uk/standards-and-indicators) (see Appendix for further details).

> Similarly, "web-based tools have been developed by the Midlands and East Quality Observatory" for the RCS, "to provide data to inform commissioning guidance", delivering "information on local clinical variation for the care pathways covered by the commissioning guidance. Drawing on hospital episodes statistics (HES) from the Health and Social Care Information Centre and validated by professional coding auditors", the tools show "data on secondary care surgical activity, organised into individual specialties and then clinically relevant conditions, such as "sore throat/recurrent tonsillitis" or "knee pain". Instead of commissioners imposing thresholds, clinicians have the opportunity and knowledge to directly influence commissioning decisions and agreeing thresholds. Two "lenses" are applied to the data, to give both a commissioner and a provider perspective. The former allows variation in the standardised rates of surgery to be visualised, for resident populations (the commissioner's view) at local area team, CCG and GP practice levels. The provider view shows the same data, but with the capacity to drill down to specific specialties, conditions and potentially individual surgical teams" (Beasley, 2013).

In addition to these, a *'Procedures Explorer'* has been developed by Right Care which is accessible to:

> "patients, the public, commissioners and providers. The information provided initially covers a year of data on activity levels, length of stay, readmission rates, day case

> rates, reoperation rates and mortality rates. It is an interactive resource which allows users to select conditions, perspective and the level of view − as well as different graphical styles. The tool is available on the Right Care website" (RightCare, 2014) "supporting the" English "NHS's mission for information, transparency and patient choice. Quality dashboards for each surgical specialty are being developed to sit alongside" the tool, "presenting key measures of quality such as mortality and readmission rates at the level of each CCG. These" were "due to be launched in" mid-2014 (Beasley, 2013)

The development of this guidance supported by data and monitoring tools, offers a new:

> "approach to NHS commissioning". A phased launch is planned, "with the first stage involving a comparatively small set of conditions and relatively high-level data. As the process matures", the plan is to be extended to capture information on more complex procedures and generate richer data, presumably to increase the chance of successful implementation and consequent improvements in health outcomes. The "programme will be discussed with other professional organisations where there is variation in commissioning; for example, the Royal College of Ophthalmologists is looking to gain accreditation and produce guidance on cataract surgery. The approach of this project enables the" English "NHS to" track outcomes of "decisions about changes to healthcare services − knowing they will be based on robust evidence and clinical ownership. Instead of commissioners imposing thresholds, clinicians also have the opportunity and knowledge directly to influence thresholds and other commissioning decisions" (Beasley, 2013).

In Sweden, Socialstyrelsen state that they:

> ”will closely monitor and report on the indicators that have been developed within the framework of the guidelines”, commencing in 2012-2013, with ”the evaluation of healthcare processes, results and costs” related to ”orthopaedic conditions. The Board has developed more than 40 indicators for monitoring the healthcare of individuals with orthopaedic conditions” (see Appendix for link). ”Of these, more than half are allocated to monitoring at a national level”. However, a major problem for Sweden, despite their excellent linked secondary and primary care data within some of the therapeutic areas, is that that this is not complete, ”particularly within primary care. This means that it is not yet possible to continuously monitor a number of the indicators at a national level, even if it can be achieved at the local and regionallevel” ((http://www.socialstyrelsen.se/nationalguidelines/howtheguidelinesmaybeused).

Evidence of impact

The contribution of guidelines in guiding appropriate referral and care based on clinical need of patients, leading to efficient and equitable management of demand for elective surgery reduction of waiting time in the long term has yet to be fully to be demonstrated. However, despite sparse evidence of effectiveness of guidelines in reducing variations in clinical practice, there is understandable conviction that this highly engaged, evidence based process supported by change management processes will be successful. Of the countries we investigated in this report the UK (England most particularly) and Sweden are pursuing the guideline development and dissemination process as a way of driving quality improvement and regulating access to treatments including selected surgeries. The faith in the process in achieving these goals seems to be based on the highly engaged approach with input from a wide range of stakeholders, including public and patients.

Summary

There is limited evidence of the success of a guideline approach, a function perhaps of the relative newness of the approach. However, unlike scoring systems or waiting time targets, which can encourage 'gaming' and lead to unjustified variation, an evidence based guideline approach, supported by appropriate monitoring, has the potential to result in change and cooperation that has buy in from clinicians and patients. However, as Mitchie and colleagues work (discussed below) has shown, this may need to be supported by a system in which behaviour change to accomplish guideline driven practice is supported and there are adverse consequences for the non-compliant.

Implementation Challenges and Critical Success Factors

Each of the three approaches described here have faced implementation challenges on introduction, wherever they were introduced, but where used have shown they can produce an impact on the prioritisation of elective surgery. This however, may not always be the impact intended.

Whilst waiting time targets may be less challenging and complex to implement and can also produce change and results in terms of reduced waiting times, on first observation, implementation needs to be planned with great care. Based on the reports reviewed here, it cannot be assumed that the right people are moving through the waiting list at the right time (and pace) for their condition and priority and in the right pathway.

As reported by Dimakou and colleagues (Dimakou et al., 2009) implementing waiting time targets may be necessary but is not sufficient to deliver appropriate prioritisation. Successful implementation of a waiting time policy might embrace setting waiting time targets alongside communications to help the patients and public understand why waiting on a ‘waiting list’ is not unfair but a necessary reality (i.e. that the level of demand and budget constraints mean that there will be a period of time before surgery is made available, but that this is an *acceptable and equitable* strategy as long as the waiting time is at a safe and acceptable level and that appropriate prioritisation approaches are used to manage the waiting list).

One approach, adopted in Norway, Netherlands and Australia, is for waiting time guarantees to be linked to a clinical assessment of need, with the level of need determining the length of the wait. There is evidence to show that this can lead to a reduction in waiting times and to improved patient outcomes (Siciliani and Hurst, 2005, Siciliani et al., 2013)

In Canada, Kreindler undertook a review of international policy strategies to reduce waits for elective care (Kreindler, 2010). The review concluded that indirect strategies – internal markets, increased private financing or unenforced guarantees – have a poor record of success, but are less (politically) contentious approaches for governments to take. The more direct approach of limiting demand by removing low priority patients from the waiting list can be an impactful but is politically difficult.

To some extent the scoring systems and waiting time prioritisation approaches evaluated in this review conform to Kriendler’s conclusions. Kreindler suggests that, apart from financial investment in increasing capacity (an option unlikely to be deployed in our financial climate), tireless effort to support best practices are not easy and require financial investment. This last point is supported by our review findings. However ways of breaking through the barriers to implementation and providing appropriate support for best practice guidelines have been explored and approaches recommended. These are summarised at the end of this section.

Scoring algorithms may be simpler to implement than best practice guidelines but on the evidence of the New Zealand experience they are not a single solution to the prioritisation problem, and the evidence from New Zealand is that implementation is not always acheived and can be actively undermined.

Elective surgery guidelines, as they are being developed in the UK at present, have the great strength that the process is one in which all stakeholders, including public and patients are highly engaged; and deliberation is underpinned by an evidence base. When these guidelines are simplified to the quality and best practice standards, communicated effectively and backed by the clinical professional organisations to which surgeons belong, they are optimised for engaging and driving the appropriate selection of patients for elective surgery under the principles of prudent health care. The comprehensive plans and materials provided to support the observed guideline initiatives are, it seems, evidence that at the very least the developers have thought ahead of time, about the challenges of implementation and monitoring impact.

However, whatever approach is adopted it must be monitored against appropriate indicators (as exemplified in England and Sweden's guidlines initiatives) and there must be 'teeth' to address non- compliance. At the time of this review, Wales lags behind England in its ability to utilise health data as a means of tracking activity and outcomes. Lack of access to data (rather than lack of data) means that that, in Wales, there are limited opportunities and ability to fully understand what elective surgery is being undertaken, on whom, with what level of problem and with what outcomes. The ability to track the uptake and outcomes of approaches to prioritise elective surgery is critical to implementation success. Otherwise, those who do not wish to adhere to policy, guidelines or scoring systems - however the limits are defined – can continue to do as they wish, for whatever reason. The tools being developed nationally in Wales (i.e. The Welsh NHS Expenditure and Health Tool[3]) and locally (e.g. the Commissioning Activity Tool in Abertawe Bro Morgannwg University Health Board) are being developed to try and overcome the problems. However, many individual initiatives may not have enough resources and will not gather enough momentum to meet the needs described here.

Access to data could also drive development of information resources that enable health care provision and elective surgery to be based on needs assessment[4] (an approach used well in England and in New Zealand). Evidence based and comprehensive health needs assessment, rather than relying upon historical activity, has a record of improved prioritisation decision making (Ettelt et al., 2012).

Aside from developing data tools and commitment to address non-compliance to approaches to prioritisation there needs to be a fundamental change in behaviour to drive adoption of prioritisation; specifically to overcome the challenges of accepting prioritisation principles and difficulties of changing practice to adhere to guidelines.

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[3] "The Public Health Wales Observatory has produced a report and interactive tool that presents NHS expenditure data alongside measures of health and health care. The tool covers six of the twenty three programme budgets, with these six accounting for over 40% of all NHS Wales expenditure" (http://www.wales.nhs.uk/sitesplus/922/page/69839)

[4] Health Needs Assessment: Identifies the health needs and inequalities in an area. It is a useful tool for planning and prioritising. It requires some profiling (the collection of relevant information that will inform about the state of health and health needs of the population) and analysis of this information to identify the major health issues.

Mitchie and colleagues (Mitchie et al., 2013) have developed the behaviour change wheel (BCW) and based on this are undertaking an on-going “programme of research, developing an ‘intervention design tool’ based on the BCW”. The fundamentals of changing practice, according to Mitchie and colleagues, starts with a “theoretical understanding of behaviour, to determine what needs to change in order for the behavioural target to be achieved and what intervention functions are likely to be effective to bring about that change” (Mitchie et al., 2013, p.9). Initiatives that seek to drive uptake of guidelines and change of attitudes towards thresholds for surgery may benefit from this programme of work, which has achieving evidence based implementation of best practice at the heart of its objectives.

Conclusions

The Welsh Government, as it drives implementation of prudent health care principles, will no doubt face challenges and any changes that are made in the short term may take quite some time to come to fruition in terms of improving the experiences and outcomes for patients. The changes implemented by the current Welsh Government will have to be sustained by governments of the future. Learning from the ways in which prioritisation in elective surgery has been approached and delivered in other countries, it seems that if there are to be initiatives to drive change in approaches to prioritisation, engagement with the influencers in providing and delivering health care in Wales, both in government and in the health care community, may need to be (further) developed. They will have to be sustained and be influenced by those ‘in’ the service as well as those responsible for policy and financing the services (and be relatively untainted by the politics of the day) to give change a better chance of endorsement and implementation.

In New Zealand and Sweden, the NHC and Socialstyrelsen respectively, are established bodies that seem to provide this level of engagement in a formal way. The All Wales Therapeutics and Toxicology Committee (AWTTC) and All Wales Medicines Strategy Group (AWMSG) provide some of these functions to government and the health care community and patients in Wales but is strictly limited to pharmaceuticals. The potential for expansion of AWMSG’s remit to encompass wider issues including the present topic could be considered.

The guideline process may be the most beneficial approach to adopt given it is founded on evidence and inclusivity. Using scoring tools may be part of guideline advice. The research by Mitchie and colleagues suggests that using tools such as the BCW may be the critical factor in delivering behaviour change (Mitchie et al., 2013).

It may be expedient to explore specific therapy areas as candidates for ‘prioritisation improvement pilots’ and look at how other jurisdictions that use eligibility criteria for these areas have delivered change for the better, reviewing available best practice standards, guidelines and data on activity and outcomes. This could then inform strategy and implementation plans for supporting new eligibility criteria for elective surgery in Wales. Areas for consideration might be:

- Primary Total Hip and Total Knee replacement surgery (expanding need).
- Bariatric surgery (controversial).
- Gynaecological surgery (variation in practice).

Dissemination of guidelines, changing clinical behaviour and gaining adherence is hard work but it can be done using well researched tools such as the BCW. These approaches may, potentially, be the culture shift that will deliver prudent health care and in the case of elective surgeries could deliver rational prioritisation. Removing inappropriate care (disinvestment in low value and no value surgeries to create capacity) and using guideline driven care to increase quality and outcome is a partner to the prudent healthcare agenda.

Appendix

Example of a NICE quality standard for peripheral arterial disease

http://www.nice.org.uk/Guidance/QS52/chapter/quality-statement-3-supervised-exercise-programmes#quality-measures-3

Supervised exercise

“Quality statement 3: Supervised exercise programmes

Quality statement

People with intermittent claudication are offered a supervised exercise programme.

Rationale

Supervised exercise programmes can improve walking distance and quality of life for people with intermittent claudication. However, the provision of services varies across the country and so there is a need for both new provision and improvement in existing care.

Quality measures

Structure

Evidence of local arrangements to ensure the availability of supervised exercise programmes.

Data source: Local data collection.

Process

(a) Proportion of people with intermittent claudication who are offered a supervised exercise programme.

Numerator – the number of people in the denominator offered a supervised exercise programme.

Denominator – the number of people with intermittent claudication.

Data source: Local data collection. Contained within NICE clinical guideline 147 audit support – imaging and supervised exercise programmes: audit standard 3.

(b) Proportion of people with intermittent claudication who start a supervised exercise programme.

Numerator – the number of people in the denominator starting a supervised exercise programme.

Denominator – the number of people with intermittent claudication offered a supervised exercise programme.

Data source: Local data collection.

(c) Proportion of people with intermittent claudication who complete a supervised exercise programme.

Numerator – the number of people in the denominator completing a supervised exercise programme.

Denominator – the number of people with intermittent claudication who start a supervised exercise programme.

Data source: Local data collection.

Outcome

(a) Improvement in pain-free walking distance.

Data source: Local data collection.

(b) Improvement in health-related quality of life.

Data source: Local data collection.

What the quality statement means for service providers, healthcare practitioners and commissioners

Service providers ensure the availability of a supervised exercise programme for all people with intermittent claudication.

Healthcare practitioners ensure that they offer supervised exercise programmes to all people with intermittent claudication.

Commissioners ensure that they commission supervised exercise programmes that can be offered to all people with intermittent claudication.

What the quality statement means for patients, service users and carers

People who have pain when walking because of poor circulation are offered a supervised exercise programme to gradually build up their pain-free walking distance and improve their quality of life.

Source guidance

Lower limb peripheral arterial disease (NICE clinical guideline 147), recommendation 1.5.1 (key priority for implementation).

Definitions of terms used in this quality statement

Intermittent claudication is defined as a walking- or exercise-induced pain in the lower limbs caused by diminished circulation. [Full NICE clinical guideline 147]

Supervised exercise programmes may involve the following components:

2 hours of supervised exercise a week for a 3-month period

encouraging people to exercise to the point of maximal pain.

[Adapted from recommendation 1.5.2 of NICE clinical guideline 147]"

Source: https://www.nice.org.uk/guidance/qs52/chapter/Quality-statement-3Supervisedexercise-programmes

Socialstyrelsen guidelines for orthopaedic conditions and indicators

Available on web site (in Swedish). Functional and quality of life indicators feature strongly.

http://www.socialstyrelsen.se/nationalguidelines/nationalguidelinesfororthopaedicconditions

Clinical Commissioning Group Outcome Indicator Set

The use of the tools that enable treatment outcomes to be measured, with regular analysis of routine electronic health data in England and requirements for compliance to NICE Quality Standards, in the new CCGOIS, increases the chance of adherence to guidelines. In addition, these data "will inform payment mechanisms and incentive schemes such as the Quality and Outcomes Framework (QOF) and Commissioning for Quality and Innovation (CQUIN) Payment Framework" (https://www.nice.org.uk/standards-and-indicators?d-16544-p=2). These tools illustrate the potential for successful impact of guidelines and quality indicators distinguishing them from waiting time initiatives and scoring systems. Below we summarise information about the data and tools that have been deployed.

In English secondary care, monitoring using data and related software tools for analysis and tracking has been possible using the National Benchmarker produced by the National Audit Office (AuditOffice, 2014), which is due to close in March 2015 (because of changes to the English NHS structure) This "is a powerful online tool that compares acute hospital activity data, clinical coding and Payment by Results related measures with other organisations. It can be used to inform many areas of work: efficiency and productivity, contracting, information, service redesign, quality accounts and data quality in general. The National Benchmarker provides detailed analysis of hospital data to allow local health economies to compare themselves against an expected level of activity based on the type of patients they have (known as a benchmark)". Analysis that covers:

- "Admitted patient care
- Outpatients
- Accident and emergency
- Reference costs
- Independent sector provider NHS activity

It contains over 60 indicators from general tests to focused data quality indicators, and includes:

- mean price of spell
- mean length of spell
- zero length spell ratio
- complication spell ratio
- follow up ratio
- mean pre-op period of elective spell
- multiple same-day outpatient attendance ratio
- mean diagnoses per spell
- post OPCS-4.3 procedure ratio
- trust cancellation ratio

Volume analysis, identifies exceptionally high or low volumes of hospital activity, and estimates the financial impact of this over or under performance. The National Benchmarker also contains three separate reference costs tools:

- Cost variance tool – looks at differences between reported and expected unit costs for each treatment area
- Activity reconciliation tool – compares activity data submitted in reference costs to activity reported in Hospital Episode Statistics (HES)
- Activity share tool – looks at whether a trust is undertaking its expected share of activity for its size" (https://www.gov.uk/government/organisations/audit-commission).

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Author Details:

Pippa Anderson is Acting Head of the Swansea Centre for Health Economics at Swansea University and Kateryna Onishchenko is a Research Assistant in the Swansea Centre for Health Economics at Swansea University