

EDITORIALS

Turning ‘waiting lists’ for elective surgery into ‘preparation lists’

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Waiting lists for surgery are an integral part of the UK National Health Service (NHS); they are used as a construct to ration surgery and to reduce costs, whilst simultaneously attempting to distribute limited health resources in an equitable manner.¹ They are a feature of health services that have central funding, financed mainly through general taxation, and are present in several other European countries including Italy, Greece, and Spain, where there is a need to manage the dynamics of capacity and demand. Waiting lists are rarer in countries that rely on private healthcare provision (including insurance) or rely on funding through social security (e.g. USA, Austria, Germany, and France).² Nevertheless, independent of the healthcare system, there is an inevitable period of time between diagnosis of an illness that may be amenable to surgery and admission for elective surgery. It is now acknowledged that this time can be better spent in preparing patients for surgery in order to improve the patients’ experience of healthcare (including quality outcomes and satisfaction), improve population/public health, and reduce the *per capita* costs of healthcare.

This triad forms the central premise of the US Institute for Healthcare Improvement’s widely supported and emulated ‘triple aim’ healthcare initiative,³ to which the fourth (quadruple) aim of improving the experience of providing care and attaining joy in work may be added.⁴ Better care gives an increased sense of accomplishment and meaning for healthcare workers, and may also improve overall delivery of healthcare.^{5,6} Although waiting lists are sometimes viewed as a means to create a delay in the delivery of surgical care, if the time is utilised well, the patient can be optimised for surgery, resulting in a better outcome. Hence, we propose that ‘preparation lists’ may be a more appropriate name for the time spent between listing and admitting patients for the surgery.

The need for a new paradigm

Global life expectancy is increasing, and with it, the associated comorbidity. For example, in the USA, the population aged more than 65 yr increased by 34% from 37.8 million in 2007 to 50.9 million in 2017 and is projected to reach 94.7 million in

2060.⁷ The population having surgery in England is ageing at a faster rate than the general population.⁸ The 2018 US data exemplify the relationship between increasing age and comorbidities, with 38% of people aged 65 yr or more having one or no chronic conditions, 47% two to three chronic conditions, and 15% four or more chronic conditions,⁷ with the main chronic conditions being hypertension, arthritis, heart disease, diabetes mellitus, cancer, and stroke.⁷ Multimorbidity matters as it is associated with higher mortality, polypharmacy, higher rates of adverse drug events (including drug–disease interactions and drug–drug interactions), and increased utilisation of healthcare resources.⁹ The increasing prevalence and adverse impact of frailty on surgical outcomes are also being appreciated better now.¹⁰

It is estimated that in excess of 4 million people die each year within 30 days of surgery globally, and that postoperative deaths now account for 7.7% of deaths worldwide, making surgery the third leading cause of death after ischaemic heart disease and stroke.¹¹ In addition to causing immediate mortality, surgical complications are associated with increased healthcare costs,¹² long-term morbidity, reduced quality of life, and increased risk of premature death for several years after the procedure.^{13,14} These complications may also prevent patients from returning to their usual or previous place of residence, as they require increased levels of care, which adds further to the overall costs. Hence, quality of recovery, which encompasses the concept of the patient returning to their previous level of function or better, is an important outcome.^{15,16}

Thus, the current challenges of surgery now include dealing with complications arising from an ageing population, increasing prevalence of frailty and multimorbidity, issues with polypharmacy, and adverse drug events, all within economies in which there is a need to curtail costs. In addition, there are now greater public expectations from healthcare providers, and often these expectations can exceed the ability of healthcare to improve health. The concept of the global ‘Choosing Wisely’ initiative is to improve the value of conversations between patients and their healthcare providers, to increase use of a shared decision-making tool, resulting in realistic expectations and minimisation of unnecessary and potentially harmful interventions.¹⁷

Utilising preparation time and preparation lists effectively

The time spent by patients waiting for an elective operation should be used to prepare them for surgery medically, physically, and psychologically by instituting measures that have been shown to improve postoperative outcomes. The process should commence as soon as the diagnosis is made and the decision to proceed with an operation is contemplated. The whole preparation process is multimodal and may involve several specialties, departments, and healthcare professional groups (Fig. 1). The process may take several weeks for some of the components, but many can be completed within 2–4



Fig 1. Processes involved in the preparation of patients waiting for elective surgery.

weeks. Even for patients requiring surgery for cancer, this would not result in a delay, provided the process is commenced once surgery is contemplated.¹⁸ Nevertheless, the process should not be allowed to delay surgical intervention unnecessarily for conditions that need prompt attention or where an inordinate delay could result in harm.

Individualised risk assessment and shared decision-making lie at the heart of preparing patients for surgery. The shared decision-making process should begin at the initial surgical consultation with discussions between the surgeon, patient, carers, and family. If a patient is clearly not fit for the planned procedure or does not wish to proceed, it is not prudent to put them through the whole process of preparation, and the alternatives, including doing nothing, should be discussed at that point. However, shared decision-making may be easier after appropriate investigations and formal risk assessment, and often involves other healthcare professionals.¹⁸ Formal risk assessment coupled with shared decision-making may help reduce last-minute cancellations and improve the patient experience.

In the USA, the focus of the Choosing Wisely campaign has primarily been to improve the professionalism around the patient–clinician interaction with the aim of reducing unnecessary interventions by publishing lists of diagnostic tests and interventions that have low or no health benefit value. These interventions can be driven by monetary gain for healthcare providers and patient demand, often resulting in higher stakes for patients when the procedure results in no improvement or deterioration in the quality of health of the patient.¹⁹ In the UK, the emphasis has been on utilising shared decision-making to minimise the use of health interventions that have either no or limited health benefit for individual patients.¹⁷ Choosing Wisely UK²⁰ suggest that the patient should ask their doctor or nurse the following four BRAN questions, which enable the patient and clinician to have a dialogue on the unique circumstances and values that are pertinent to the individual patient and enable discussions around patient-centred outcomes:

- What are the Benefits?
- What are the Risks?
- What are the Alternatives?
- What happens if I do Nothing?

Furthermore, these questions compliment the use of risk calculators that quantify the probability of death and morbidity of that procedure in a population that is similar to the individual. Patients often find discussing these patient-centred outcomes more meaningful if the risk of not being able to return to the previous level of function or domestic situation is considered.^{15,16} This information allows the alternative options, including doing nothing, to be discussed and is dependent on the patient's individual values, perspectives, and risk factors.

Individualised risk assessment not only identifies the patient's fixed risk factors, but can also identify modifiable risk factors. The impact of these modifiable risk factors can be diminished during the preparation time through the processes of multimodal prehabilitation, and optimisation of lifestyle, concurrent disease or comorbidity, and drug therapy. 'Surgery schools' are an exciting concept that are being used by an increasing number of surgical departments to educate patients about the pathway, to ensure that they are well motivated, and are aware of their responsibilities in promoting their own recovery.^{18,21}

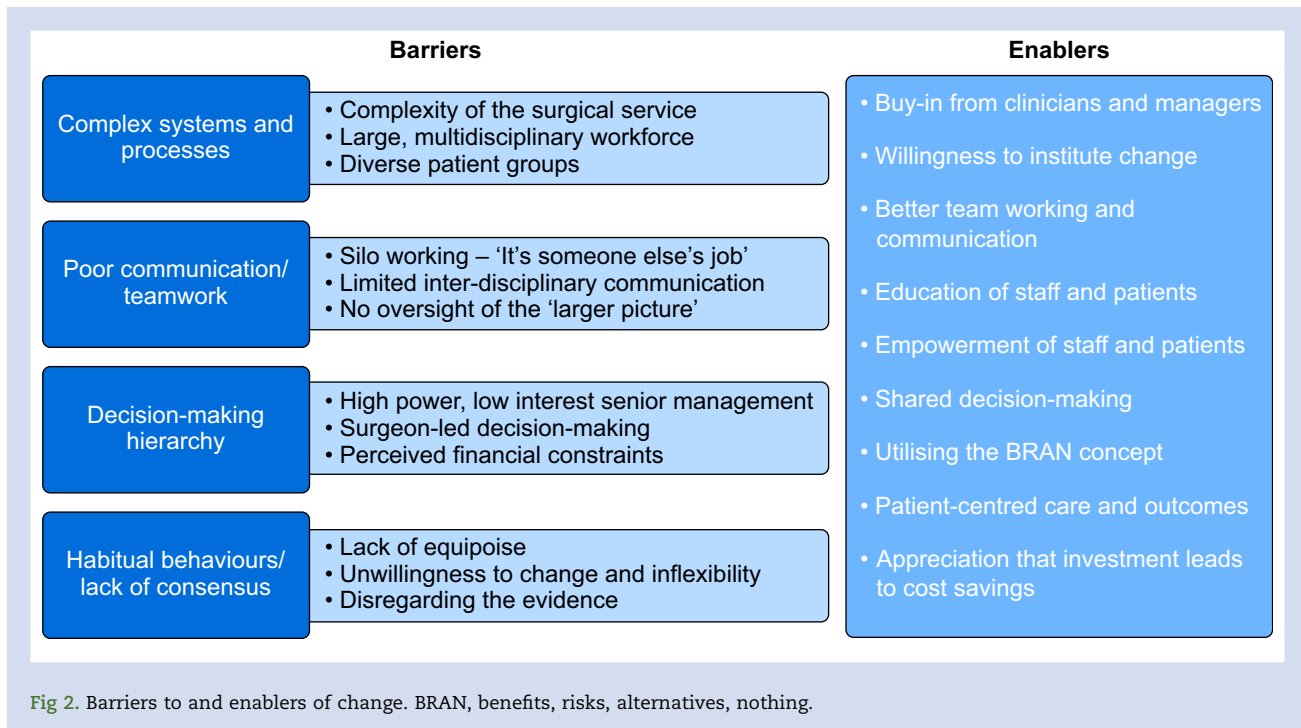
Multimodal prehabilitation is the process of reducing surgical complications through the triad of physical fitness training, optimising nutritional status, and improving psychological resilience. A systematic review of nine studies showed that nutritional prehabilitation alone or combined with an exercise program in patients undergoing colorectal surgery significantly shortened length of hospital stay by 2 days, and also accelerated the return to preoperative functional capacity.²² Further lifestyle interventions including weight reduction in patients with obesity and smoking cessation can also help reduce surgical complications and improve outcome. In addition, these interventions (increased physical activity levels, improved dietary intake, reduced alcohol intake, and smoking cessation) are the main modifiable risk factors for non-communicable diseases in the Western world. Long-term compliance with these interventions improves the general health of the patient and, thus, the preparation time before surgery offers a powerful 'teachable moment' for the patient. The risk of developing surgical complications and the tangible ability to improve the immediate outcome provide incentive to implement these lifestyle changes permanently.¹⁸

The preparation period also allows comorbidities to be optimised.¹⁶ It is now accepted that, amongst other conditions, anaemia, poorly controlled diabetes mellitus, opioid use, and fast atrial fibrillation should all be optimised in order to improve surgical outcome. In addition to reducing the burden of comorbidities, there is a need to manipulate or modify the patient's drugs. Certain drugs such as insulin and anticoagulants will need to be dose-adjusted, stopped, or modified to a different formulation to allow anaesthesia and surgery to proceed safely. Preoperative use of opioids and other dependence-forming medicines are significant risk factors for chronic postsurgical pain and persistent postoperative opioid use, and there is now the recognised need to wean these drugs preoperatively.²³

There is also the increasing realisation that psychological factors, including dispositional optimism and propensity to engage in adaptive health behaviours, improve certain short-term and long-term surgical outcomes.²¹ This is a further rationale behind the development of personalised health coaching apps and 'surgery schools', as they have also been shown to reduce patient anxiety, postoperative pain, and length of stay with improved patient satisfaction.²¹ Patient involvement and engagement are essential components of enhanced recovery after surgery (ERAS) patient partnership programmes.²⁴ Patients gain greater understanding of the importance of taking responsibility for increasing physical activity and improving dietary and other lifestyle choices both before and after surgery, and become active partners in the process to improve their health, rather than just passive recipients of healthcare.¹⁸

Barriers and enablers

The conversion of *waiting* lists to *preparation* lists involves a societal change in expectations, but also process changes in healthcare systems, and as with any other major change faces many barriers, some of which have been identified in previous studies.^{25–28} Some of these are more complex than others and include financial and behavioural constraints that lead to an unwillingness or reluctance to change. Nevertheless, the prospect of surgery remains a powerful and highly effective stimulus to effect change, and with appropriate patient



support, these barriers can be overcome and the quadruple aim⁴ realised (Fig. 2).

With the changing patient characteristics and increased expectations of the surgical population, there is a global need to re-engineer the surgical pathway. There is increasing evidence that utilising the time between contemplation of surgery and admitting for surgery to optimise medical, physical, and psychological health through lifestyle and medical preparatory interventions can improve surgical outcomes. This time needs to be embedded into the surgical pathway and 'preparation lists' provide the ideal opportunity to implement the necessary interventions.

Declarations of interest

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Bleeding, anaemia, and transfusion: an ounce of prevention is worth a pound of cure

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Association between postoperative haemoglobin and myocardial injury after noncardiac surgery: a retrospective cohort analysis by Turan et al., *Br J Anaesth* 2021;126:94–101, doi: [10.1016/j.bja.2020.08.056](https://doi.org/10.1016/j.bja.2020.08.056)

Bleeding Independently associated with Mortality after noncardiac Surgery (BIMS): an international prospective cohort study establishing diagnostic criteria and prognostic importance by Roshanov et al., *Br J Anaesth* 2021;126:163–171, doi: [10.1016/j.bja.2020.06.051](https://doi.org/10.1016/j.bja.2020.06.051)

Preoperative prediction of Bleeding Independently associated with Mortality after noncardiac Surgery (BIMS): an international prospective cohort study by Roshanov et al., *Br J Anaesth* 2021;126:172–180, doi: [10.1016/j.bja.2020.02.028](https://doi.org/10.1016/j.bja.2020.02.028)