

# **Waiting time research by EEPRU and ESHCRU:**

## **Summary of results to date**

28 August 2024

Waiting times for elective treatments in the NHS have been increasing for several years and were exacerbated by the effect of COVID-19. Longer waiting times can impact health through different mechanisms: (a) longer wait postpones health benefits that a patient could have accrued earlier; (b) it potentially reduces their ability to benefit from health care; and (c) it increases the risk of mortality or morbidity while waiting. Waiting times may also impact health inequalities. Tackling long waiting times has therefore become a policy priority.

Current policy in England is that 92% of patients with non-cancerous conditions should wait no longer than 18 weeks from referral to treatment for elective procedures, although this target has not been met for some time. Alternative approaches to a single overall target are possible. For instance, patients could be prioritised either across treatments or within treatments, with longer or shorter waits applied differentially. Indeed, health care workers are used to informally prioritising patients and average waiting times systematically differ across treatments. For example, waiting times for coronary bypass are much shorter than for a hip replacement. However, it is possible to devise more formal systems of prioritisation and reflect these in guidance or policy as seen in some other countries.

This summary describes results emerging so far from a series of projects on waiting times undertaken at the University of York as part of the ESHCRU and EEPRU PRUs. It considers the health impact of waiting, as well as the impact on inequality and can be used to inform the development of waiting times policies, in particular the use of alternative targeted prioritisation of waits for particular procedures or patients.

### **1. Health benefits lost through longer waits**

Gibbs et al. (2023, 2024a, 2024b) developed a simulation model to quantify the effect of an increase in waiting times on patient health for a selection of high-volume elective surgeries: Cataract surgery, Cholecystectomy, Coronary Artery Bypass Graft, Hernia, Hip Replacement, Hysterectomy, Knee Replacement and Percutaneous Coronary Intervention. They estimate the change in Quality-Adjusted Life Years (QALYs) that would arise from a longer waiting time (for example, an additional six weeks of waiting) across ten sub-groups of the population for

each procedure defined by sex and income deprivation. The model takes into account the postponed health benefit (mechanism (a) above), the risk of dying while waiting (mechanism (c)), the possibility of opting for the private sector while waiting, and the possibility that the capacity to benefit is reduced as a result of a longer wait (mechanism (b)). They find that the largest health loss from waiting an additional six weeks is for hip and knee replacement. This result is driven by the high health improvement that these surgeries generate through better mobility and elimination of pain. However, prioritising this condition for shorter waiting times would also potentially increase health inequality in the population.

## **2. Reduced ability to benefit through longer waits**

Arabadzhyan et al. (2024) and Gaughan et al. (2024) test specifically if longer waiting times reduce the ability to benefit from health care leading to worse health outcomes. If they do, the health loss due to the postponement of the health benefit will be exacerbated. Arabadzhyan et al. (2024) focuses on patients with cardiovascular diseases who require a Coronary Artery Bypass Graft (CABG) or a Percutaneous Coronary Intervention (PCI). They find that longer waiting times do not lead to worse health outcomes during the pre-pandemic period for these procedures. However, during the pandemic, when waiting times increased substantially, an increase in waiting times for CABG increased the risk of death within 30 days of hospital admission for surgery, and the effect was larger among older and deprived patients. No effect was found for PCI. Gaughan et al. (2024) focus on elective hip replacements. The study finds that longer waiting times do not generally affect postoperative health at the time of the surgery (as measured by the Oxford Hip/Knee Score) or the risk of a hospital readmission. This holds for both NHS trusts and private providers treating NHS patients. Therefore, although waiting times postpone health benefits, which Gibbs et al. (2024a) show to be significant given that hip replacement is highly effective in reducing pain and improving mobility, it does not reduce the ability to benefit from a health improvement once the surgery is received.

## **3. Waiting according to health need**

Kasteridis et al. (2023) investigate the extent to which patients requiring a hip replacement are prioritised on the waiting list based on criteria such as the degree of pain and lack of mobility. The study provides evidence of modest prioritisation in the length of wait from the time a

specialist adds the patient to the waiting list to when they are treated, such that patients with more severe symptoms are treated more quickly. It shows that prioritisation is used more extensively when waiting times are longer, both before and during COVID-19. It also considers a stronger prioritisation policy, further reducing the wait for patients in more pain or who are less mobile, while increasing the wait for those with less pain and more mobility. The study shows that this stronger prioritisation policy could lead to larger health gains, as patients with more severe symptoms have larger health gains from surgery.

#### **4. Inequalities in waiting times**

One concern raised by previous literature is that within publicly-funded systems patients with lower income deprivation have shorter waits than more deprived patients for elective treatments, such as hip replacement and CABG. However, waits are generally shorter for cancer treatment and Matias et al. (2024) tests for the presence of inequalities in waiting times by socioeconomic status for patients receiving breast cancer surgery (either mastectomy or breast conserving surgery). The study shows that there are no differences in waiting times by income deprivation before the pandemic, while there is a small difference (less than a day) during COVID-19. Wen et al. (2024) focus on surgery for prostate cancer. The study finds no differences in waiting times by income deprivation either before or after COVID-19. However, it suggests the number of prostate surgeries for patients living in the most income-deprived areas is substantially less than for those living in the least deprived areas, both before and after COVID-19.

#### **5. Conclusions**

As a whole, this body of research suggests that there is scope for the NHS to enhance waiting time prioritisation both across and within treatments to minimise the health loss while patients are waiting on the list. However, some trade-offs may be required between overall population health gains and inequalities in health.

- Waiting times postpone health benefits and the arising health loss differ substantially across treatments.
- Waiting times can also reduce the ability to benefit from surgery, which would exacerbate the health loss from postponing treatment.

- Stronger prioritisation according to measures of ability to benefit from surgery could yield substantial health gains at little cost.
- During COVID-19, waiting times increased 30-day mortality risk for CABG patients but not for PCI. Waiting times do not affect postoperative health for hip and knee replacement.
- Waiting times for breast cancer surgery did not differ by socioeconomic status before the pandemic but patients with low income have a slightly longer wait after the pandemic. There were no differences for prostate cancer surgery before and after the pandemic, but there is evidence suggesting that access to prostate cancer surgery may be inequitable.
- A limitation of the analyses is that the follow up period post Covid is short and that the data only include people who have had surgery, not the full waiting list.

## References

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