

Long delays to admission in emergency departments cause higher mortality: implications for the 4-hour target

NHS England is planning to abolish the long-standing 4-hour target for waits in emergency departments. The target has been criticised as an arbitrary management target that is unrelated to clinical outcomes, but waits much longer than 4 hours in the emergency department cause a notable increase in mortality for admitted patients, suggesting that the 4-hour target is clinically important and should not be abolished.

Context

One of the key characteristics of the Blair reforms of the NHS in the early 2000s was the introduction of tough targets for elective and emergency department waits – nobody would spend more than 4 hours in the emergency department before discharge or admission and nobody should spend more than 18 weeks waiting for elective treatment. These targets were achieved and public satisfaction with the NHS rose sharply as a result.

But the emergency department 4-hour target was subject to much criticism. Some claimed that a target would distort clinical priorities. Some claimed it was arbitrary and not based on clinical reasoning. Some claimed it was impossible to meet, given how many long waits were occurring in the system.

Despite this, the target was met just a handful of years after it was set, and the NHS continued to meet it for more than half a decade. Hardly anyone attending an emergency department waited longer than 4 hours for treatment or discharge. However, performance has declined consistently since 2011 and is currently at the worst levels ever measured, with the system as a whole struggling to get even 70% of patients dealt with in 4 hours (this was closer to 60% in major emergency departments across England in December 2021 (NHS England, 2021).

One result of the decade-long problems with prompt treatment or admission has been a renewed wave of criticism of the 4-hour target. The week before this editorial was written, health secretary Sajid Javid said that the 4-hour target was ‘the wrong target’ because it distorted clinical decisions (Kituno, 2022). NHS England (2020) has been discussing a set of replacement metrics (including the abolition of the 4-hour target) for several years, although these have not yet been implemented.

Javid is not the first to suggest the abolition of 4 hours as a metric. Andrew Lansley proposed its abolition in 2010 when he became health secretary (Topping and Campbell, 2010), but was eventually talked out of outright abolition and chose to downgrade its importance and relax the standard instead. Significantly, this standard has rarely been met since in major emergency departments.

The relevance of 4-hour waits to patient outcomes

One of the most common initial criticisms of the target was its lack of relationship to hard clinical outcomes, and this criticism is still frequently raised today. However, a recently published analysis found it does matter clinically, because long waits lead to a significant increase in mortality (Jones et al, 2022). This study is not the first to highlight the possibility that long waits are bad for mortality. A significant study by Guttman et al (2011) used Canadian data and showed that longer waits were associated with increasing mortality, just in time to demonstrate the problems with the Lansley proposal to abolish the 4-hour target.

Jones et al (2022) took 2 years of data from English emergency departments. These data were not based on a sample; instead, the study used the complete official dataset of all

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emergency department attendances and admissions (the emergency department hospital episode statistics dataset has recorded patient-level data since 2007 for all emergency department attendances). The power of the study is strengthened because it used patient-level measurement of waits, not estimates based on average waits in specific departments during specific shifts.

This study focused on the outcomes for all admitted patients, which provides more data to adjust for the patient condition from the admitted patient records. In short, the study found that mortality is significantly higher after a 5-hour wait for admission and continues to increase further with longer waits. This result persists even after adjusting for various confounders. While this study did not test whether the increased mortality also happens for discharged patients, the authors suspect that it does, from both their initial analysis and previous work in other countries that shows a clear effect in discharged patients. As the study is observational, it cannot prove that the effect is causal, but since a randomised controlled trial would be unethical this is the strongest evidence of a relationship that is likely to be possible.

The implications for policy and hospital management

These observations strongly suggest that the 4-hour target was set at about the right level for clinical outcomes. Death is, after all, the least ambiguous outcome. In hospitals meeting the original 4-hour metric (fewer than 2% of all patients wait >4 hours), very few, if any, patients will wait long enough to see a higher mortality risk.

Jones et al (2022) believe that these results imply that the 4-hour target is not merely an arbitrary operational standard but a vital metric linked to patient outcomes. It should not be removed as a target.

Some continue to object to the target because it seems to be unattainable in the current environment of the NHS. The Royal College of Emergency Medicine (2021) estimates that even if the standard were set to 12 hours not 4 hours it would not be met in the current NHS. This was an objection when the target was first set, but the NHS achieved it in a handful of years and continued to achieve it for 6–7 years. The problem is not that it cannot be done but that the NHS lacks the will to enforce it and, as a result, the specific actions required to meet it have been neglected.

It is worth remembering that this target does not just apply to the emergency department. It is a system target that requires actions across hospitals and social care. The major causes of delays in emergency departments are not from inside the department, but are related to external factors. Emergency department waits also explain other major problems in current NHS performance. For example, long waits to discharge patients from ambulances are a direct consequence of long waits in emergency departments (and the emergency department waiting time captures most of those waits, as the ‘clock’ starts 15 minutes after ambulance arrival, whether the patient has been transferred or not). There is little to gain by demanding progress on long handover delays in isolation.

The 4-hour target does not measure whether the emergency department is doing a good job, it measures whether the hospital as a whole is doing a good job. The biggest and most obvious cause of long waits, especially for patients who are admitted, is that hospital beds are not available when needed (Monitor, 2016). And when emergency departments become crowded because of patients waiting to be admitted, that has a knock-on effect on their capacity to treat those destined to be discharged so they, too, experience delays. Some beds are blocked because patients cannot be discharged to social care, but metrics suggest this is not a major part of the problem. It is also worth noting that the timing of bed availability matters: if the bed is available at 6pm when it is needed at noon, a patient will experience at least a 6-hour delay. Conventional metrics of bed availability fail to capture this as they represent weekly averages not real-time availability. Few hospitals have installed automatic systems to monitor the live availability, despite advice first issued in 2004 pointing out that huge gains in bed availability for emergency department admissions were possible by altering the timing of discharges (NHS, 2004).

Instead of focusing on policy changes and operational interventions in hospitals to achieve the target, much policy in the last decade has, instead, prioritised ineffective interventions

Key points

- NHS England plans to abolish the 4-hour emergency department target
- The target has been criticised as lacking a clinical rationale.
- Research has shown that long waits for admission are associated with increasing patient mortality.
- The target is appropriate and clinically relevant: it should not be abolished, and hospitals and NHS England should make renewed efforts to meet it.

such as diverting patients away from emergency departments. This does not seem to have a notable effect on attendance and, even if it did, would have little impact on performance.

NHS England has proposed abolishing the 4-hour metric and replacing it with a range of other – much less useful – metrics. Given the relationship between long waits and mortality, NHS England should abandon its attempts to obfuscate the key metrics for emergency departments and refocus its efforts to understand the causes of long waits and eliminate them, as should hospital managers.

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