

What price 90 seconds: is 'Call Connect' a disservice to 999 callers?

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In 2005 the UK Department of Health published *'Taking healthcare to the patient: transforming NHS ambulance services'*.¹ This insightful and imaginative report was intended to deliver ambulance services fit for the 21st century. It made 70 recommendations, most of which gave particular focus to addressing the (currently unmet) needs of the majority of users of the 999 service, up to 80% of which have a non-life threatening or even a non-urgent clinical condition. One of the report's recommendations, which was unrelated to patients with non-urgent unscheduled care needs, has since however dominated the attention of ambulance service managers to such an extent that it has had a negative impact on progress in most other areas.

In accordance with this recommendation, in 2008 a new definition for the key Department of Health performance measure of ambulance response times was introduced. Previously the 'clock-start' for measuring response times occurred when a patient's chief complaint had been confirmed: this was now moved back to the point at which the telephone call was received in the ambulance dispatch centre—hence the title *'Call Connect'* for this policy revision.² Consequently, responding emergency vehicles now have, on average, a 90 s reduction in the time available for them to drive to a patient within the otherwise unchanged 7 min and 59 s target. The premise of *'Call Connect'* is based on the view that achieving this revised 8 min target will make *'... a real difference to patients and the way we deliver patient care'*, and has been publicised as a great advance in ambulance service delivery.² It builds on previous technical analyses of how to measure call

times accurately and to present the findings to the community and funders,^{3 4} and the assumption that shorter response times are intimately connected with better clinical outcomes. However, is this necessarily true?

The resource requirements—human, vehicular and financial—to achieve this new performance standard have been significant. Many millions of pounds have been pumped into ambulance trust's budgets to enable them to meet it, creating a considerable opportunity cost and thereby diverting funds from other areas of ambulance trust (and wider NHS) development and service provision. There are numerous reports of the cancellation of education and training courses; managers being diverted to operational duties to the extent that they are unable to perform their normal functions effectively; and clinical governance suffering through an ongoing lack of clinical audit, supervision and research due to the diversion of staff to crew ambulance vehicles. Further, a new staff grade of emergency care assistant (ECA) with 6 weeks training (3 weeks of which are about driving) is replacing ambulance technicians who had 12 months of education—arguably evidence that a previous emphasis on clinical competency is being subsumed in order to produce personnel to drive emergency vehicles to reach 999 calls in the shortest possible time. Until the 1960s the possession by a recruit of a driving licence was more highly prized by ambulance employers than that of a first aid certificate, and the introduction of ECAs risks a return to this outmoded value.

A blinkered focus on response times to the exclusion of all else jeopardises the provision of high quality clinical care focused on the varying needs of real patients. The funds spent on additional vehicles and staff are now not available to spend on training specialist paramedics (emergency care practitioners) with the skills to treat and discharge the low-acuity patients that make up the majority of the 999 call population. This has resulted in

the admission rate to emergency departments continuing to grow unchecked, as does the length of the queues of ambulances waiting outside hospitals for an available bed. Minimally trained ECAs, unqualified student paramedics and contracted voluntary aid society ambulances manned by first aiders are, despite stated policy, sometimes sent to seriously ill or injured patients without the immediate back-up of a paramedic, and there are many reports of such personnel transporting the critically ill to hospital without skilled clinical assistance. Even when paramedics are sent to a 999 call, they will frequently be a lone responder staffing a car since this stops the clock as effectively as an ambulance arriving on scene. They may then have to wait an hour or more for an ambulance to become available to admit their patient, as these are preferentially diverted to outstanding 999 calls, again to stop the clock. And because of the need to assign any vehicle to respond as soon as a 999 call is received, call triage systems designed to allocate the correct type of resource a patient needs no longer function effectively, with the small number of specialist paramedics being equally likely to be sent to a patient requiring admission as to a case where they can use their skills to treat and discharge in the community.

While response times and other temporal intervals are commonly used as performance indicators for ambulance systems throughout the world, it is important to note their limitations. They are simply process measures that should only form *part* of a comprehensive performance framework that captures the structural elements, service delivery processes and outcomes of a system.⁵ Yet one of the failings of ambulance performance measurement regimes internationally is that they draw upon a narrow band of performance indicators that are based purely on the ready availability of measures rather than any justified and coherent framework. While response and other time intervals are useful in some ways, they fail to describe clinical processes or outcomes and an over-reliance on them runs the risk of distorting management practices and the deployment of resources.^{6 7} One study of a UK trust using a High Performance Ambulance Service system has reported that *'... the focus on improving response times has been to the detriment of other parts of the service, particularly in the development of staff training programmes with potential consequences for the quality of clinical care'*.⁸

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The policymakers who introduced the 'Call Connect' standard may have been unaware of evidence which shows no clear link between ambulance response times and outcome for the majority of patients, or just how short response times need to be if they are to lead to increased survival in the tiny proportion that could benefit. Indeed, a review of the literature fails to find any compelling evidence that there is something special about an 8 min response time, however defined, in the case of cardiac arrest or for any other clinical condition.^{9–11} One study in the USA which evaluated the outcome of trauma patients found no difference in survival between two groups on either side of an 8 min response time benchmark.¹² Research has repeatedly identified that a response time of 4–5 min is required to maximise survival from out-of-hospital cardiac arrest.^{13–14} Likewise, other studies found few data that would support faster response times unless they were in the order of 4–5 min.^{15–17} Arguably, the drive to reach the entire 20–30% of 999 calls falling within the 8 min 'Call Connect' standard acts as a perverse incentive, diverting attention from the need to reach the 1% of patients who are in cardiac arrest within a truly beneficial 4–5 min window.

Many longlasting and dearly treasured paradigms have come and gone in the world of prehospital medicine as they have been proved to be ineffective or harmful, including the use of medical anti-shock trousers in hypovolaemic shock and the routine administration of calcium, lidocaine and bicarbonate in cardiac arrest. However, despite the mantra of evidence-based practice, other paradigms remain ingrained in the prehospital professions, are integral to their identity and continue to be held in the highest esteem—including the use of response times as the main measure of ambulance system performance. The key question is whether the community is prepared to continue

contributing 'unwarranted' expenditure of resources to achieve little real improvement in outcomes and in the likelihood that perverse consequences may flow from a 'slavish' pursuit of unrealistic performance benchmarks.^{18–20} Could our limited resources be better applied to other intervention strategies? In the context of a government strategy which emphasises evidence-based policy making²¹ and one of overstretched and resource-limited ambulance services, emergency departments and unscheduled care services, the onus is on the advocates of 'Call Connect' to provide clear and substantial evidence of improvements in patient outcome or we should abandon this expensive, distracting and arbitrary target.

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