



Digital transformation in the NHS Ambulance sector

White paper on how the digitisation of
Make Ready services can improve patient
safety, generate efficiencies, reduce lost unit
hours and improve staff morale.

Digital transformation in the NHS Ambulance sector

In 2017 the total expenditure for ambulance services was £2.3 billion. It is forecasted that demand is expected to increase by 38% in the next 10 years placing unprecedented pressure on the service.

By implementing best practice and operational improvements in staff, digital technologies and effective fleet management, £200 million in productivity benefits could be delivered, of which £120 million would be in clinical workforce productivity.



If all NHS Ambulance trusts in the UK adopted the Mo:dus Make Ready platform aligned with a Make Ready system, 387,000 lost unit hours, equating to 32,000 12-hour shifts, would be **SAVED**.

Abstract

This paper presents a transformational solution for the UK NHS ambulance sector for improving patient safety, staff morale and efficiency (via reducing lost unit hours).

This solution encourages best practice across all NHS ambulance trusts, and a collaboration between the public and private sectors, under a shared mission to assist the NHS in solving its ongoing, and increasing financial pressures, therefore, contributing to the sustainability of the UK's unique health service and our society overall.

The proposal includes a plan to digitise Make Ready services with the ultimate goal of creating an efficient delivery model with transparency, data accuracy and auditability at its core.

The solution addresses the recommendations, required improvements and live workstreams from various reports and programmes including The Carter Report, The Government Outsourcing Playbook, and the AACE (Association of Ambulance Chief Executives) National Workstream in Information Management and Technology. The common theme throughout the research findings is a need to drive efficiency, resilience and governance with the ultimate objective of improved patient safety. And whilst traditional Make Ready services can contribute to the targets set, a digital tool will achieve greater productivity with unparalleled visibility and operational insight. It will ensure consistency across the service UK-wide, with practices adopted uniformly throughout all trusts, and all systems connected through the central solution, enabling the utilisation of data to benchmark performance and productivity on an ongoing basis and between trusts.

The Mo:dus Make Ready app is an enabler to Make Ready services that improves data collection and data accuracy, and optimises resource with autonomous governance. Through collaboration and knowledge sharing, significant benefits can be realised.



Statement of the issue

A study by the National Audit Office in 2017 revealed that the NHS has to deliver efficiencies of 2-3% per year, effectively placing a 10-15% real terms cost reduction target on trusts to achieve by April 2021.

Ambulance trusts face resourcing challenges that are limiting their ability to meet rising demand. Most trusts are struggling to recruit and retain staff. The reasons people cite for leaving are varied and include pay and reward, and the stressful nature of the job. In 2015, ambulance trusts had a paramedic vacancy rate of 10%.

The use of different operating frameworks across ambulance trusts is contributing to variations in performance. NHS England has put in place an urgent and emergency care strategy that aims to integrate all urgent and emergency care services and provide care closer to home. The extent to which trusts have taken up this strategy varies across the UK. Each trust has developed its own operating framework which is contributing to variations and inefficiencies in performance.

In solving this problem the NHS will contribute to its financial targets, time targets, address the key points in the Carter report and be in line with the Government Outsourcing Playbook.

Background

There are three key studies and projects that cohere to provide the relevant context and background to the current status of the NHS Ambulance Trusts in England:

- The Government Outsourcing Playbook
- National Audit Office (NHS Ambulance Services 2017)
- The Carter Report (September 2018) Operational productivity and performance in English NHS Ambulance Trusts

Key findings include:

1. Demand for ambulance services continues to grow rapidly.



2. Increased funding for urgent and emergency activity has not matched rising demand, and future settlements are likely to be tougher.



3. Ambulance trusts face resourcing challenges that are limiting their ability to meet rising demand.



4. The use of different operating frameworks across ambulance trusts is contributing to variations in performance.



The Government's Playbook was designed to improve how Government works with industry. In March 2018 the Government completed a study of what it outsources, why it outsources and how it outsources. The study concluded that when done well, the private sector can bring efficiency, scale and fresh thinking to the delivery of public services.

John Manzoni - THE OUTSOURCING PLAYBOOK Central Government Guidance on Outsourcing Decisions and Contracting said:

“Reforms have been captured within 11 key policy changes that are designed to improve both our decision making and the quality of contracts we place with industry.

Following the simple guidelines, rules and principles related to these policies will improve how we do business and ultimately safeguard the continuity of critical public services. Delivering the Minister for the Cabinet Office and Chancellor of the Duchy of Lancaster’s goal, to rebuild public trust in Government and its suppliers.”

National Audit Office (NHS Ambulance Services 2017) reported 500,000 ambulance hours lost due to delayed transfers of care at hospitals in 2015-16, which is impacted by ambulance change over time, ambulance and crew location.

The Carter Report (September 2018) Operational productivity and performance in English NHS Ambulance Trusts

Lord Carter’s review identifies unwarranted variation in the delivery of ambulance services, as well as the potential savings of £500 million that could be made in efficiencies by 2020/21.

Lord Carter produced the report into ambulance productivity in England with nine recommendations to improve patient care, efficiency and support for frontline staff who have responded to a significant rise in demand for ambulance services in recent years.

The report found that if more patients were treated at the scene by paramedics or were better assessed over the phone when dialling 999 — avoiding the need for an ambulance when it is safe to do so — the NHS could treat patients closer to home and reduce unnecessary pressure on emergency departments (EDs) and hospital beds. Offering safe and quicker care could save the NHS £300m a year by 2021, with a further £200m of savings through improvements in ambulance trusts’ infrastructure and staff productivity. (<https://improvement.nhs.uk/about-us/corporate-publications/publications/lord-carters-review-unwarranted-variation-nhs-ambulance-trusts/>)

In his letter to the Secretary of State prefacing the report, Lord Carter outlines five key points following his review of operational productivity and performance in English NHS Ambulance Trusts:

- | | | |
|---|--|--|
| 1. The provision of high quality clinical care and good resource management go hand-in-hand  | 2. A single reporting framework should be adopted across all trusts, which pulls together clinical quality and resource performance data and compares it to the ‘best in class’  | 3. Delayed transfers of care have a significant impact on achieving efficiency savings  |
| 4. The need for genuine local and national collaboration and coordination  | 5. Rapid adoption of the review recommendations is paramount  | |

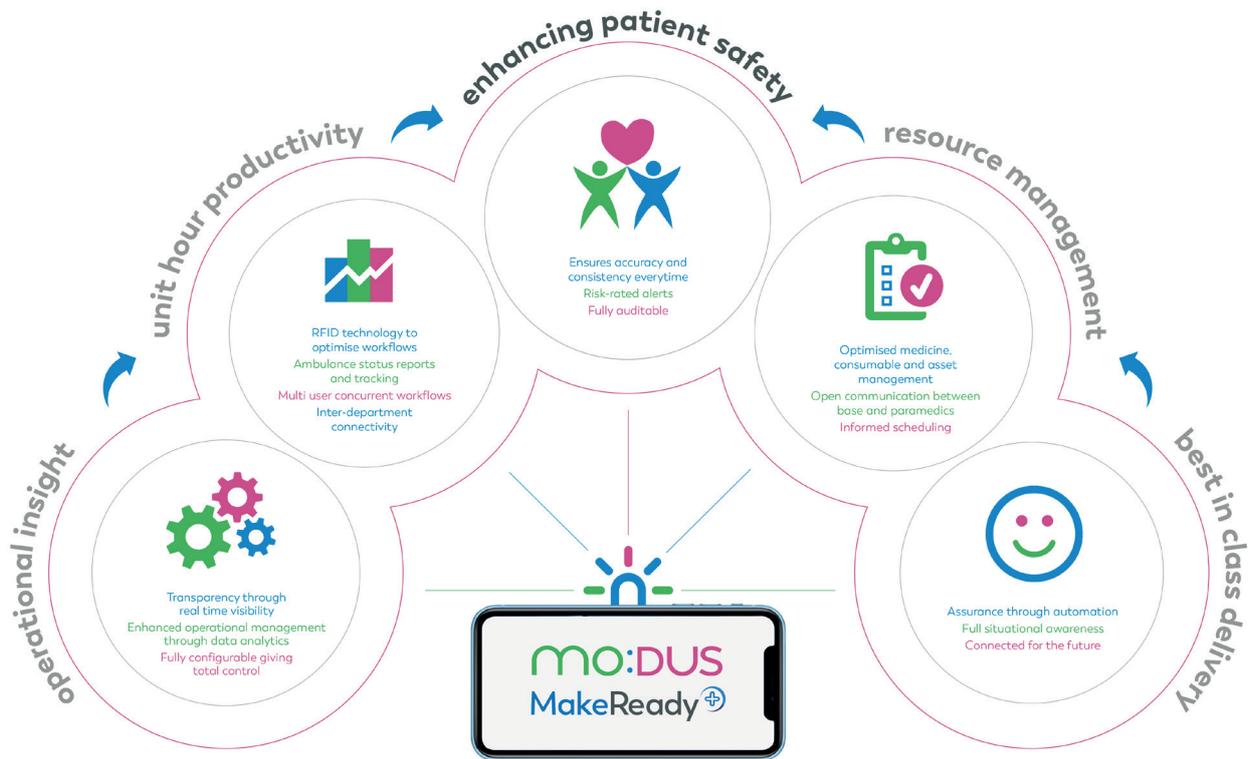
The Carter Report identifies that a Make Ready programme can affect positive change and create significant financial savings and is referred to as a key enabler.

Make Ready is a system which sees ambulances prepared by a dedicated team of specialists who clean, restock and check the equipment on ambulances before the beginning and at the end of every shift. Currently Make Ready methods vary across the trusts; including specialist centralised centres with workshops or adapted ambulance stations.

However, the adoption of traditional Make Ready services alone does not go far enough to meeting the required target by 2021. It will certainly deliver efficiencies for those trusts that have not already adopted a Make Ready programme, but the Mo:dus Make Ready app will take productivity, best practice, transparency and resilience to the next level.

Solution

The digitisation of Make Ready services through a singular digital platform is made possible by the Mo:dus Make Ready app – a software platform designed and built specifically to address the challenges presented and provide a digital solution offering a level of assurance and governance above the traditional model.



digitising the ambulance service

enhancing patient safety



The overarching objective of the Mo:dus Make Ready app is to support the NHS sector in enhancing patient safety. Each element of the solution has secondary benefits, but ultimately all contribute to creating a safer environment. The app will drive benefits whether the ambulance trust has an existing Make Ready solution or has not yet adopted Make Ready services.

This is achieved through establishing transparency, resilience, accuracy and insight in the workflows by digitising the different aspects of a Make Ready model. The Mo:dus solution ensures consistent high quality clinical care every time, reduces the risk to patients through increased vehicle safety, ensures all equipment and medicines are checked, and is fully auditable for total accountability. Mo:dus will provide NHS ambulance trusts with a best in class solution for reporting on Make Ready times, wait times, and medicine wastage reduction.

One of the predominant benefits of Mo:dus is its ability to reduce lost unit hours – one of the major challenges identified in the research. The capability to communicate in real time, giving safety and location updates for the ambulances, means that costly transfer delays can be minimised or avoided by providing crews with accurate information. The crews can communicate with the fleet department, give visual evidence of any damage, and be 100% certain that the ambulance they are assigned to is safe to deploy.

Another area contributing to lost unit hours is the manual checking and stocking of medicine, and equipment on the ambulances at each handover. Up to 100 separate manual checks are carried out per ambulance but with Mo:dus, RFID tags can be scanned using a bluetooth device, checking all areas simultaneously.

Managing resource in terms of people, assets and medicine management is central to driving up efficiency savings, and the RFID tagging feature is also critical in cases of medicine recalls. With the manual model, if a pharmaceutical manufacturer recalls a particular product, there is no way of accurately knowing where stock is in real time or ensuring that all of it is retrieved. Because everything is recorded digitally in Mo:dus, the location of any products is known and they can be located and removed straight away. Again, this enhancing patient safety as no unsafe medications are at risk of being administered.

Another benefit, in terms of resource management, is that because the workflows are automated and streamlined, it is not essential for these workflows to be completed by the paramedic crew. This means that paramedics can focus on their core role. The app allows multi-user synchronised access, so tasks can be allocated and spread across the workforce, again reducing wait time.

The app solves the following issues related to a vehicle preparation by:

1. Enabler to running a Make Ready operation
2. Saving an estimated ten minutes time saving per Make Ready
3. Immediate location and recall of equipment for servicing/calibration via the RFID tagging software that sets a location for devices at every Make Ready
4. Immediate location and recall of all medicines pouches, in case of expiry date being passed, national meds recall, etc
5. Complete control of all consumables usage through a fully integrated tagging and stock control system
6. Removal of record pads currently used in a manual Make Ready system
7. Designated managers (trust and contractors) have immediate access to any Make Ready job over several years, instantly viewing what was checked, what was missing, damage, issues relayed to oncoming crews, etc
8. Make Ready Operatives (MRO) are guided around the vehicle in the most efficient and effective way, ensuring consistency in training, and allowing more than one MRO to process the same job, by dividing the job into sub-activities
9. Complete control over MI and KPI reports. Agreed reports can be generated daily/weekly and managers will also be able to access dynamic data, by region, site, operative, etc
10. Mo:dus acts as the 'glue' between any existing systems, so that there is a single logical flow of work and information. This will mean, for example; that any missing items identified by a MRO automatically generates a pick list (and subsequently a purchase order); MRO might identify an out-of-date medicines pouch, for which a recall and repacking process can be immediately instigated; MRO might identify damaged or broken equipment, or equipment that is due a service, and this can immediately generate an alert to the relevant trust department (as well as providing a photo of any damage, allowing the trust to make a much quicker decision regarding potential VOR)
11. With the unique Mo:dus tagging and scanning system, the MRO can locate all tagged items in a matter of seconds, removing the need to individually check items, breaking seals, opening cupboards, etc
12. With the Mo:dus crew app, the oncoming crew will be notified of the vehicle allocated to their shift, along with any specific issues they should be aware of. These highlighted issues will be held electronically against that job in case of required audit trail, etc
13. All vehicle or equipment damage is instantly reported to the relevant trust department, along with photos for clarity
14. If a key (valuable/vital) asset is moved from one vehicle to another – or just removed from vehicle – the trust will immediately get an alert, showing that the equipment has moved and showing which vehicle it is now on. As well as allowing the trust to quickly recover missing items, potentially saving thousands of pounds, it also allows the Trust to see patterns (e.g. equipment always moving when a particular crew is working or from a particular vehicle, etc)



In Mo:duS, designated managers will create and assign jobs at the start of each shift, prioritising jobs as appropriate, and adding other jobs (such as cleaning sluice rooms, scanning patient record forms, etc). This ensures the MRO knows in which order to complete each job, and allows managers to monitor progress throughout the day.

Mo:duS is designed with a sustainable future in mind. Its architecture is constructed to continue to realise value from global technological advancements, for example, from developments in IoT “Internet of Things” and VSA “Voice Search Optimisation”. Both of these technologies as their value is validated will be integrated into Mo:duS enhancing its core delivery. An example of this will be allowing Mo:duS workflows to be spoken in many different languages, helping to ensure compliance, whilst processing insights from data taken from IoT sensors which will influence real time decision making.

In reviewing the other solutions that are available, we have not found any other products in this category.

Conclusion

Based on the findings of this paper, the recommendations are that all ambulance trusts should implement a digital solution to enable:

- ✓ A Make Ready delivery
- ✓ A single reporting framework which pulls together clinical quality and resource performance data enabling comparison within trusts and across trusts
- ✓ Improved data collection
- ✓ Local and national collaboration and coordination
- ✓ High quality clinical care and good resource management
- ✓ Digitisation of workflows to drive up efficiency savings
- ✓ Reduction in lost unit hours through improved turnaround times

References

National Audit Office report into NHS Ambulance Services 2017
<https://www.nao.org.uk/report/nhs-ambulance-services/>

[The Government Outsourcing Playbook](#)

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/816633/Outsourcing_Playbook.pdf

[The Carter Report](#)

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/499229/Operational_productivity_A.pdf

Final Thoughts

Mo:dus Make Ready is a best in class example of where the private sector can transform and add value through bringing efficiency, scale and fresh thinking to the delivery of public services. The demand for ambulance services will continue to rise and this digital platform is an enabler to Trusts adopting a Make Ready solution that provides auditable, measurable and transparent solutions to many of the challenges faced by the sector, whilst critically reducing the time to make an ambulance ready. Implementation is simple, and there should be few barriers to rolling out nationally, and ultimately re-building public trust and improving patient safety.