As technology advances, patient transport has the potential to move from traditional ambulance and standard taxi services to far more sophisticated yet cost effective mobile health and 'back-home' provision, as Dr Joe Taylor and Luke Crocker from Candesic. North West explain

Driving patient recovery

As the NHS is faced with the fresh challenge of catching up on an enormous backlog of elective activity following the restricted service offered during lockdown (see Figure One), it will be essential that resources are used more efficiently than ever.

Improved patient transport and innovative support to help people settle back home are easy wins for the NHS and can be delivered by independent providers.

Patients unable to get to appointments mean wasted hours in outpatient clinics, and those who can't find a safe way home languish unnecessarily in hospital beds that could be occupied by the next in line for inpatient care.

Beds available has been falling historically (see Figure Two), leaving the NHS ill equipped to address the enormous backlog generated by responses to SARS-CoV-19 without a significant improvement in efficient use of the rump of beds available.

Healthcare journeys neither start nor end at the hospital front door.

For many unwell and elderly people getting to and from hospital can be a challenge. Investments in hospital transportation services can help the healthcare system most efficiently utilise its fixed resources while providing the wrap-around care and support many people need to access the system.

Lessons from the third sector

Hospitals are dangerous places, especially for the unwell and the infirm. Patients well enough to be at home should be ushered out of the hospital as quickly as possible. Delayed discharge leads to patients accumulating new infections, bed sores, heightened psychological dependency and a whole myriad of other conditions that ironically generate the need for them to be in hospital.

Wishing patients luck as we wave them goodbye may be a temporary relief, but without support at home they often yo-yo back into the hospital in a very short period of time.

Getting back to a cold house, without basics in the fridge or a path to the door free of ice is staking the odds against an uneventful convalescence. Nobody is willing to take responsibility for support with settling back home, despite widespread recognition that it is cheap and effective.

The lack of bureaucracy in the voluntary sector gives it an agility that the public sector doesn't have. Inexpensive and uncomplicated ideas can be put in place with comparative ease. As in many cases where low-cost small-scale initiatives can solve 'real world' problems, the third sector has been active in patient transport solutions.

The British Red Cross and the Royal Voluntary Service implemented a holistic scheme where after the patient has been transported home they offered further practical support to settle them in,

check-up on them after a couple of days and signpost them to other family and professional support as needed.

Although the third sector scheme was shown to improve care outcomes across a range of important endpoints, the Trusts involved did not wish to support continuation of the scheme. Often the NHS does not like third sector involvement in activities that impact patient outcomes.

Sir Stephen Bubb, Candesic senior advisor and chair of AVECO at the time of the project, said that charities face opposition from the NHS as they are seen as 'interfering do-gooders only suited to serving cups of tea'.

As the NHS comes under greater strain and its resources are further stretched, it's time to look at what the third-sector was able to achieve in patient transport and 'settling in' and replicate this model at scale.

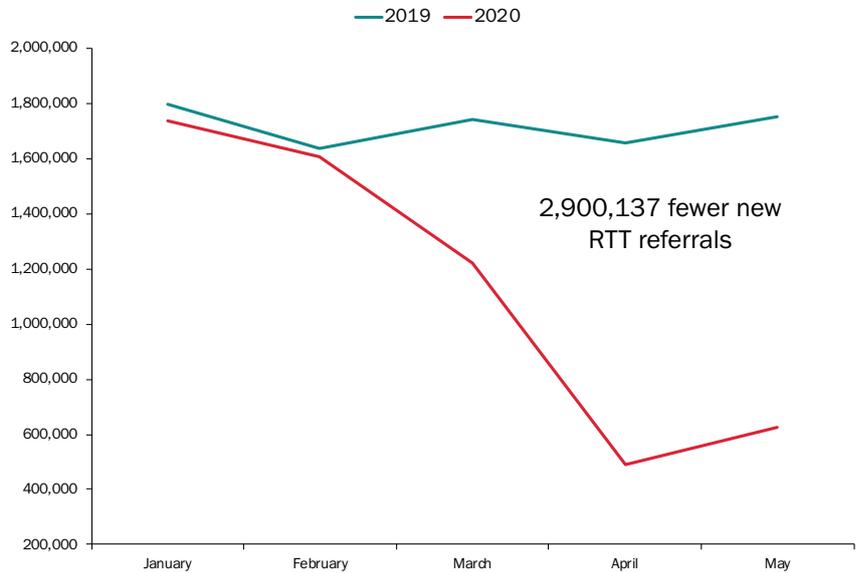## The Uberisation of taxi services

For companies which have cut their teeth driving people home after a night out on the tiles, healthcare is a market that has huge appeal.

Given that healthcare focused incumbents are little more than glorified taxi companies, their value-add over generalist people transport providers is marginal at best. Just as Amazon is making determined inroads into the delivery of groceries at the expense of UK logistics providers for supermarkets, we are seeing new opportunities for transport businesses.

Patient transport services (PTS) are regulated by the CQC to determine that vehicles used are safe. However, this regulation only applies to vehicles that were either designed for medical transport or modified for that purpose. Taxis and volunteers' cars, on the other hand, aren't subject to such regulation. Similarly, the logistics software used by these providers doesn't fall under any specific regulatory remit.

Should any existing taxi firm enter into a contract with an NHS Trust using its existing fleet to deliver the service then, currently, the door is open for them to do so without conforming to time consuming and expensive review by the CQC. Such

DEMAND FOR NHS SERVICES PLUMMETED DURING COVID-19, SO A LOT OF REFERRALS HAVE BEEN MISSED - ABOUT 2.9 MILLION. AT SOME POINT, SOME OF THE 'MISSING' DEMAND WILL RETURN.

NEW RTT REFERRALS, ENGLAND
2019 VS. 2020

2,900,137 fewer new RTT referrals

EDGE HEALTH ANALYSIS SHOWS HOW THIS MIGHT IMPACT THE SIZE OF THE WAITING LIST OVER TIME. DEPENDING ON THE SCENARIO, THERE COULD BE BETWEEN 7 AND 10 MILLION PEOPLE ON THE WAITING LIST BY NEXT APRIL.
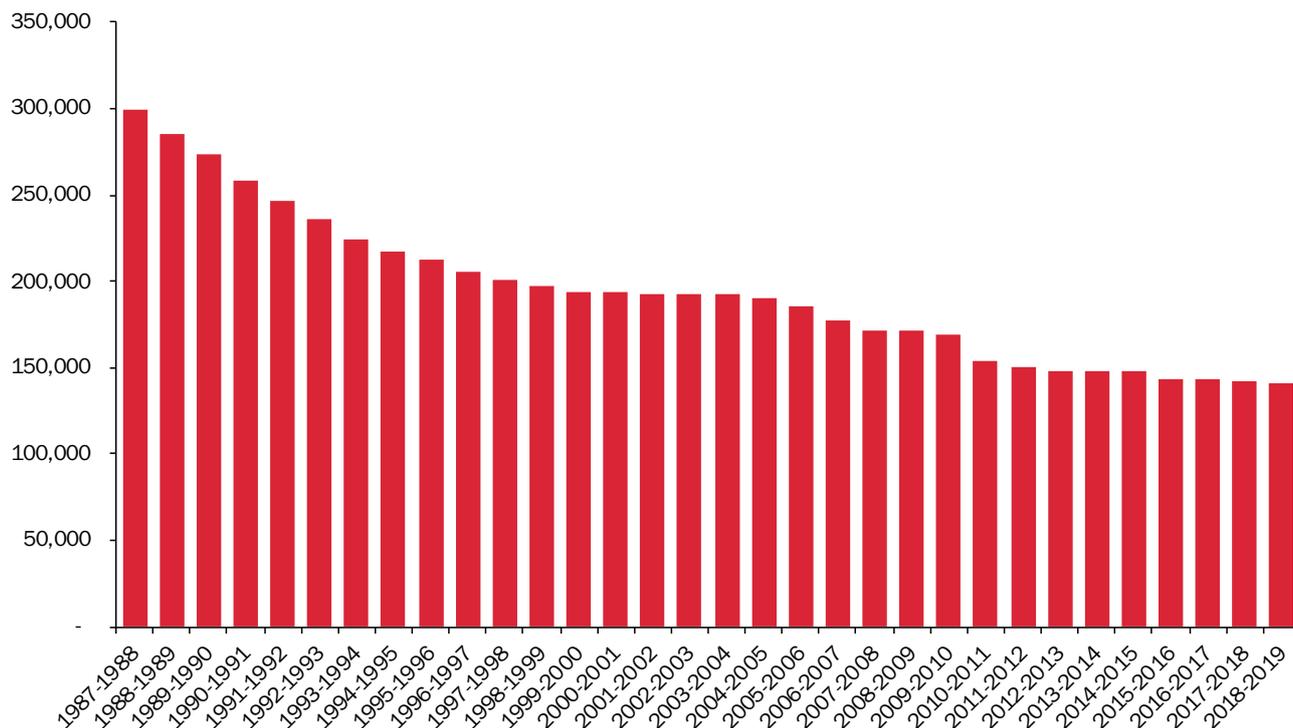
WAITLIST SIZE BASED ON DIFFERENT RECOVERY SCENARIOS
ASSUMING GRADUAL RETURN TO NORMAL FOR REFERRAL VOLUMES (BY SEPTEMBER 2020) AND FOR TREATMENT VOLUMES (BY MAY 2021)
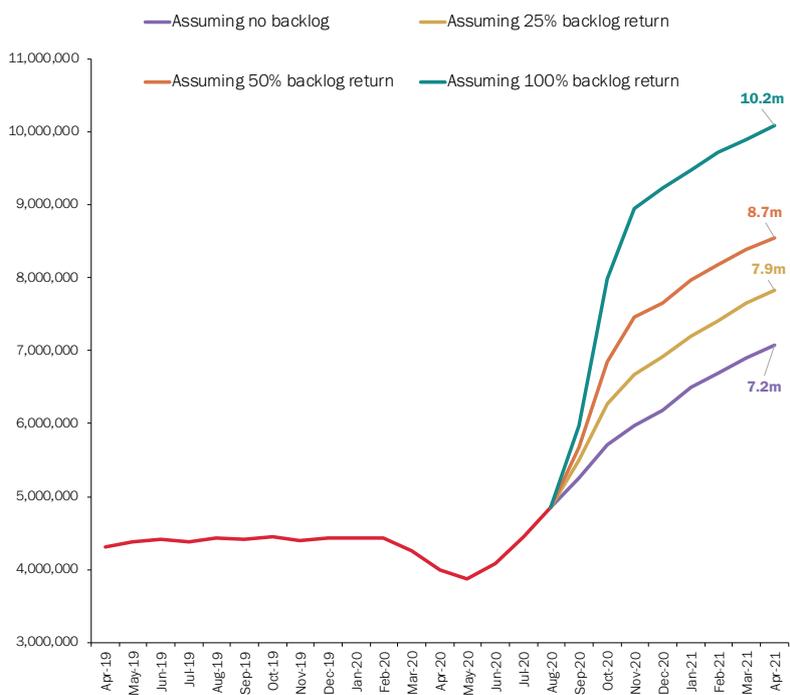
THIS IS NOT GOOD, AND IT IS WORSE DUE TO (I) THE SIZE OF THE WAITING LIST PRE-COVID-19, AND (II) THE REDUCTION IN PRODUCTIVITY DUE TO INFECTION CONTROL. THE BACKLOG WILL CONTINUE to grow

SOURCE EDGE HEALTH (23 JULY 2020); CANDESIC RESEARCH AND ANALYSIS

FIGURE TWO
THE FALL IN THE NUMBER OF AVAILABLE BEDS IN THE NHS, ENGLAND

existing people transport businesses, therefore, have an advantage over dedicated providers and we should expect them to take advantage of this to move into the market should the demand for patient transport increase.

Uber Health has seen a huge growth in its hospital transport activity in the US, having secured contracts with over 1,000 healthcare providers. The service principally is designed to enable healthcare professionals to book non-emergency journeys for patients. Its key differentiator is the health-specific dashboard that has built-in data security and privacy functions to protect patient data.

Uber's commitment in April to give 2.5 million discounted rides to NHS and care staff lead to a significant increase in rides to and from healthcare facilities. Like many businesses, people transport firms have been hit hard by responses to the pandemic, and increasingly see health-related activity as a new area for significant focus.

In 2019, Uber Health partnered with Henry Schein Medical to streamline doctors' use of software company Medpod's MobileDoc 2 — a portable case stocked with medical devices to enable remote consultations. Medpod has integrated Uber Health into its

platform so doctors can request Uber to shuttle a medical assistant, carrying MobileDoc 2, to a patient's home to guide a teleconsultation. If the doctor deems it necessary following the consultation, Uber can also bring the patient into their office for further care.

ESTABLISHMENTS ARE OFTEN BLINDSIDED BY TECHNOLOGICAL REVOLUTIONS

This departure from pure patient transports represents a significant step for the logistics giant in healthcare.

However, establishments are often blindsided by technological revolutions. Many of the driving jobs currently being carried out by humans are unlikely to exist in a decade; driverless vehicles are an inevitability.

As rapidly as the motorcar made the Hansom cab obsolete so too the taxi

driver will be seen as an antiquated peculiarity of our technological infancy.

Today's drivers should be retrained to support the patient transport sector (see Table One), just as the miners before them became care workers.

While driverless cars may get patients from door-to-door, they will never provide the on-board reassurance and the welcome home safety net of another person. Those healthcare transport providers that recognise there is more to their role than logistics will be the only ones to thrive.

Driving opportunities

Improving hospital transport isn't as simple as increasing the number of people offering to transport patients, the whole transportation system needs to be co-ordinated more efficiently. However, the lessons from how Uber Health works, and from the technologically advanced non-healthcare sector more broadly, is that complex algorithms designed with the best intentions are no substitute for live demand data from the service users.

Put simply, you need to be able to order transport when you actually need it with the minimum service specification required to get the job done.

While some elements of patient

transport are very predictable, this largely relates to journeys into care settings rather than those at discharge or transfer of care to another location.

If you consider NHS outpatient appointments, most of us have experienced knowing exactly when we need to arrive but having little visibility of when we'll be leaving. This isn't the NHS maintaining some sort of Machiavellian asymmetry of knowledge to purposefully frustrate patients, it's that healthcare activity has too many uncertain variables to enable modelling on an individual patient level. Naturally those who can, will say to friends and family 'I'll call you when I need a lift home' or 'I'll call a taxi when I'm done'.

Demand driven transport models have a few key elements that make them work.

The first is aggregate demand anticipation. This can either be informal or emergent. Uber is responsive, using surge pricing to mobilise its workforce. But all people-transport businesses have lots of experiential knowledge that shape individual driver behaviour to match anticipated demand.

The second is the scale to meet not only aggregate demand, but sub-sector demand. Whether this be enough people carriers to make airport runs or enough wheelchair accessible vehicles to make pick-ups from the movement disorder clinic that happens to be on Wednesday.

The NHS is prone to overcomplicating technology, implementing far-reaching, unresponsive and inflexible follies of software platforms that reflect a combination of hubris and naivety on the part of commissioners.

There have been four major failures in the current software, in 1992, 2006, 2011 and 2017, which in most cases forced staff back to an archaic pen-and-paper system, resulting in huge delays. Through implementation of software that enables staff to meet their immediate demands rather than constrain them by limitations of what was anticipated to be required sometimes years previously, replication of the successful implementation of dynamic feedback software from consumer logistics interfaces into the NHS will be a welcome breath of fresh air.

Tackling the capacity issue is potentially more challenging for providers of patient transport. The most sensible approach is to curate a number of existing consumer people transport organisations and enable them to address the specific requirements of patient transport and minimal at-home support. There would be a number of key steps to supporting the integration of people transport businesses into a healthcare transport ecosystem.

Such systems enable efficient management of transport services both from the community into hospital, and from hospital into the community. In 2019, £3.6bn was spent on transport services which could have been spent through a digital marketplace, showing there is already a large spend in this area. Quite clunky and unimaginative solutions, such as those provided by 365 Response, are still ahead of the curve when it comes to innovation in patient transport.

Conclusions

Getting people safely back into their homes is one of the most empowering things you can do in hospital medicine. When patients are helped with the basics of a safe journey and a helping hand, it's the sort of final goodbye doctors and nurses really look forward to.

TABLE 1 KEY ELEMENTS TO PUTTING CONSUMER TRANSPORT PROVIDERS TO WORK IN HEALTHCARE	
Training of drivers to support patient care during their journey	Although light touch, it will be essential to ensure drivers have up to date first aid training and guidance on how to spot patient deterioration that should lead to the patients return to the point of discharge
Provide specifications for different categories of fleet vehicles to meet alternative patient requirement scenarios	Accessibility for patients, and in some cases transport of care-associated equipment, may require vehicle modifications. For example, patients in wheelchairs with ambulator oxygen tanks
Enhanced DBS checking of all drivers and reliable documentation of the journeys each driver undertakes in relation to patient care	There is some trepidation with respect to the use of staff in consumer people transport firms for healthcare, the public and the healthcare provider organisation will need reassurance that reasonable checks have been made on drivers
Training of drivers in patient confidentiality issues to ensure compliance with hospital care provider policies	It is essential that the software platform, including the booking interface, reflects and respect the heightened confidentiality requirements around patient care. There will need to be some cultural changes brought about from naturally 'nosy' taxi drivers to respecting patients' rights to privacy
Ensuring drivers have training and mechanisms to supply 'settling in' services, including 'welcome home' kits	Something as simple as a box with a few basics to ensure people have enough to be getting by, while formal or informal support steps are taken, is low cost and hugely beneficial. A common sense safety checklist to support review and simple fixes without a huge amount of red tape would be an easy way to avoid potential disasters for patients

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