Having to spend time in self isolation gives you time to think. You think about your past, your present and predominantly the future. Like many over the past few weeks my thoughts turned very much to 'when this all ends, what will the world look like'? And having worked with the NHS for over 20 years, 'what will healthcare look like'?

I have no doubt that this current situation will change the world, through choice and through need. You may have heard the phrase that this pandemic is a 'wake up call for the government' reflecting on the under provision of the NHS and how hospitals are ill equipped to deal with surge capacity.

At present we are dealing with mass influx, a situation never deemed possible, and subsequently we have needed a reactive approach to this crisis. A reactive approach which is testament to the people of the UK and our ability to cope in times of hardship. Converting exhibition halls, drive through testing centres and assessment 'pods' are all temporary solutions to deal with a lack of preparation. Preparation that was considered too costly or likely never to be needed.

As each individual NHS Trust established command centres and prepared Coronavirus battle plans, necessity became the mother of invention. The World Health Organisation (WHO) published its European Hospital Readiness Checklist for Covid-19 on February 24, 2020. The document provided 'a checklist of the key action to take in the context of a continuous hospital emergency preparedness process'. The WHO noted that a 'modest rise' in admission volume can overwhelm a hospital beyond its functional reserve. But questions were asked, what were the current capacities of many hospitals before the pandemic? Were there any functional reserves? If the current system was running at capacity how could the surge be accommodated?

Rapid emergency measures have been implemented, elective surgery cancelled, non-critical procedures cancelled, admissions for only the most urgent needs, outpatient appointments cancelled, Physiotherapy sessions cancelled, GP appointments cancelled, and practices closed. The message was very much unless life threatening and you don't need to be in a healthcare environment, don't go.

Bed assessments for those already receiving inpatient care was reviewed. Doctors and nurses making difficult decisions about those staying in hospital or sent home. Risk assess and then risk assess again.

How do we classify the most urgent needs? As each directorate made decisions on what is the best care plan for the individual, with a caution first approach historically. But not now. Cancer care, renal dialysis, cardiology or maternity, to name but a few, whose care plans are being transformed to mitigate the risk of transmission with potentially severe consequences for those with 'underlying health conditions'. The daily report of fatalities around the globe caused by contracting covid-19 is a constant reminder of the virus but there seems little mention of those who have died due to care which is now not available or too risky to provide.

The world reflects on the availability of protective clothing and specialist equipment such as ~~breathing~~ ventilators. Innovation and development of products has risen exponentially over a very short period of time with some of the greatest technological minds coming together to help assist the crisis. Previously, when considering capital projects in an extremely challenging time for NHS budgets, we often scrutinise the pound per square meter cost of development. If we have a budget ceiling what takes priority, storage space or bed provision? The bottom line on the finance sheet may have asked the question if extra storage requirements and FF&E needs were fully needed? Do we build additional capacity into the system or can we share provisions? Some might say we can't afford to have additional capacity based on an event which occurs every 100 years but what if it's not that long before it occurs again?

So, how do we look to the future, how do we prepare, what can we learn from our history and our current situation? What does the future of our Healthcare environment look like?

A recent article in the Harvard Business Review presented a new online screening and triage tool in Boston that could differentiate between those presenting with mild Covid-19 symptoms to those who

needed more urgent treatment. This 'AI Bot' using voice response systems allowed a much higher number of people to be triaged and more efficiently directed to the most appropriate place of care. Could this process of a 'virtual' triage be utilised prior to attendance at Emergency departments and not just Covid-19? The current situation has resulted in Government intervention to restrict people attending the A&E, with the strong message 'Stay at Home, Save Lives'. Certainly, moving forward a much more restricted pathway would be needed to reduce hospital attendance. But could Emergency triage be carried out remotely reducing waiting times and the need for congregation or assessment rooms within the hospital.

Utilising the current approach during this pandemic to promoting video and online communication we can further consider the current method for outpatient appointments. In 2019 the 'NHS Long term plan' highlighted the rise in outpatient appointments and identified the need to reduce the need as part of the 5-year plan. Virtual consultation not only avoid hospital attendances, reducing cross infection, impact on infrastructure, reduction in travel but could enhance efficiencies in the system. An online appointment would not necessarily reduce the number of appointments, as it merely changes the location, but what if the way in which people obtained an appointment was changed. What if patients requested the appointment when they needed it rather than after a set period? Some Fracture departments have already implemented this with 'virtual clinics' for musculoskeletal injuries which do not require surgery. Following initial treatment within the emergency department the patient is sent home with access to a telephone hotline. Review is then conducted at the virtual fracture clinic and the patient is contacted afterwards by telephone by a nurse who discusses the onward plan. A patient-initiated physical review is only scheduled if the patient has a strong preference. This follow up via a virtual appointment significantly reduces hospital attendees and missed appointments, saving wasted time and reducing the amount of NHS estate required for delivering outpatient care.

What about Inpatient care. The current pandemic has shown two chains of thought. Firstly, the rapid implementation of beds within non-hospital environments and secondly the assessment of need within current hospital beds. The latter requiring assessment of need against risk of infection and a widescale approach to discharge where possible. This scenario highlights not only the shortage of inpatient beds within the UK, but possibly the challenges of the current discharge process coupled with a lack of provision in the social care system. Due to the current emergency, rapid discharge and assessment of suitability to return home took place. Obviously, the parameters changed and the risk of infection in many (and the need for beds) took precedence but it has shown that a quicker discharge and reduction within inpatient numbers can be achieved. This was assisted by enhanced diagnostic, pathology, pharmacy and community services. Can we build on the success of coming together in times of need? Yes, the pressure on all NHS staff has been incredible and has shown the need for more NHS staff at a clinical level but if further investment in support services was provided to allow more efficiency in the discharge process, would we need to 'build more beds'. Perhaps building 30% more bed capacity should be second to reducing the current capacity by 30%, perhaps both?

Let us not forget primary care. NHS England has written to each GP surgery in Britain requesting that all appointments for patients displaying symptoms of Covid-19 are conducted online, via telephone, video or other form of telecommunication. This form of triage will reduce the spread of the infection, protect the GP and ultimately reduce the pressure on acute hospital systems. If we look beyond the current situation and Covid-19, the use of telemedicine offers continued benefit to the patient, GP and wider environment. Many transferable illnesses (influenzas, the common cold) can be diagnosed via discussion without physical contact. The development of video technology will allow face to face access without the risk of cross infection to either the GP or other patients.

I am not for one moment suggesting that the methods employed during this current crisis are the immediate solutions for our historical challenges. We must not forget that the difficult decisions to defer care, discharge a patient too early or forgo a physical examination may unfortunately provide further long-term health problems, hospital readmissions or fatalities. Indeed, regular appointments also often serve as useful check-ins. Patient initiated appointments and virtual consultation should account for this by incorporating other 'touch points' to engage patients in broader conversations about their circumstances and care, ensuring they receive the best support for them.

There is also a risk that some patients get 'lost' in the system. Some patients, such as the elderly, without regular contact may need to be automatically contacted to ensure nothing critical goes unnoticed.

So, what does the future look like? Will we be utilising a 6G network and seeking a medical consultation from the home video conference suite? Attendance at any hospital restricted to those with a 'green card' accessed via an App on their smartphone. Hospitals providing only emergency care with outpatient appointments carried out on a virtual basis. Births, renal dialysis, physiotherapy and chemotherapy all provided at home unless high risk in houses now designed with home clinic rooms. Hospital sites reconfigured with enhanced surgery, diagnostic and pharmacy units. Inpatient beds only provided to those who are very poorly with visiting carried out via the same video conference technology. No need for the café, the shop, the restaurant. If you don't need to go to hospital, don't go.

Healthcare 2050…. Stay safe, Stay home.