Candesic's **Dr Joe Taylor** and **Dr Michelle Tempest** consider how changes in staffing roles and technological innovation can keep people in healthcare roles.

Remote **possibilities**

Alongside the familiar demographic and epidemiological drivers of increased demand, healthcare delivery is facing other challenges. As standards of healthcare have risen and medical science advanced, the complexity and intensity of care has transformed, putting the system, and particularly its staff, under strain.

Growing demands on healthcare providers are exacerbated by ongoing recruitment shortages and high rates of attrition. Healthcare staff are being asked to do more specialist activity, and more often. These pressures are making traditional life-long careers in healthcare less attractive.

Staffing pressures in our healthcare system will only intensify. Without significant changes in how we support staff in roles that maximise their value, and jobs that suit their lives outside of work, the system of healthcare cannot survive.

Technological innovations are tools that can support healthcare staffing, but technology is not the 'silver bullet'. A fundamental rethink about the roles of people and ways of working across the staffing base is required.

There are not enough people working in healthcare

The vast majority of UK healthcare workers are employed by state funded providers (Figure One), NHS providers are dominant. NHS funding growth has slowed compared to historical trends. Even as real terms funding on healthcare staff creeps up, staff attrition rates are higher than in 2013 (Figure Two).

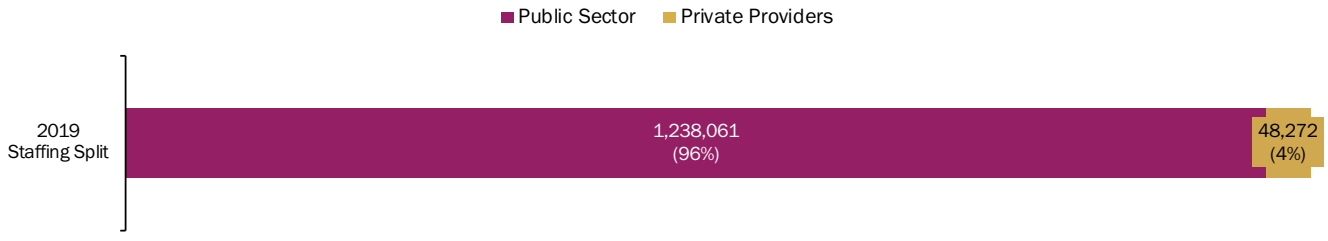
Attempts continue to 'plug' staffing gaps with temporary measures, including transient pay rises and the use of locums. Without longer-term structural reform in our approach to healthcare staffing, we will continue to fail.

Caps on hourly rates charged by staffing agencies and imposed mandatory pricing frameworks were established in 2016. However, these were not universally adhered to as providers were unable to fill essential staffing shifts offered at these rates. There was a £700m fall in agency spend in the NHS between 15/16 and 16/17.

Nonetheless, approximately a third of the £3bn agency spend was on locum doctors in 2017. People are choosing to work outside of the security of permanent contracts to gain the flexibility of temporary work.

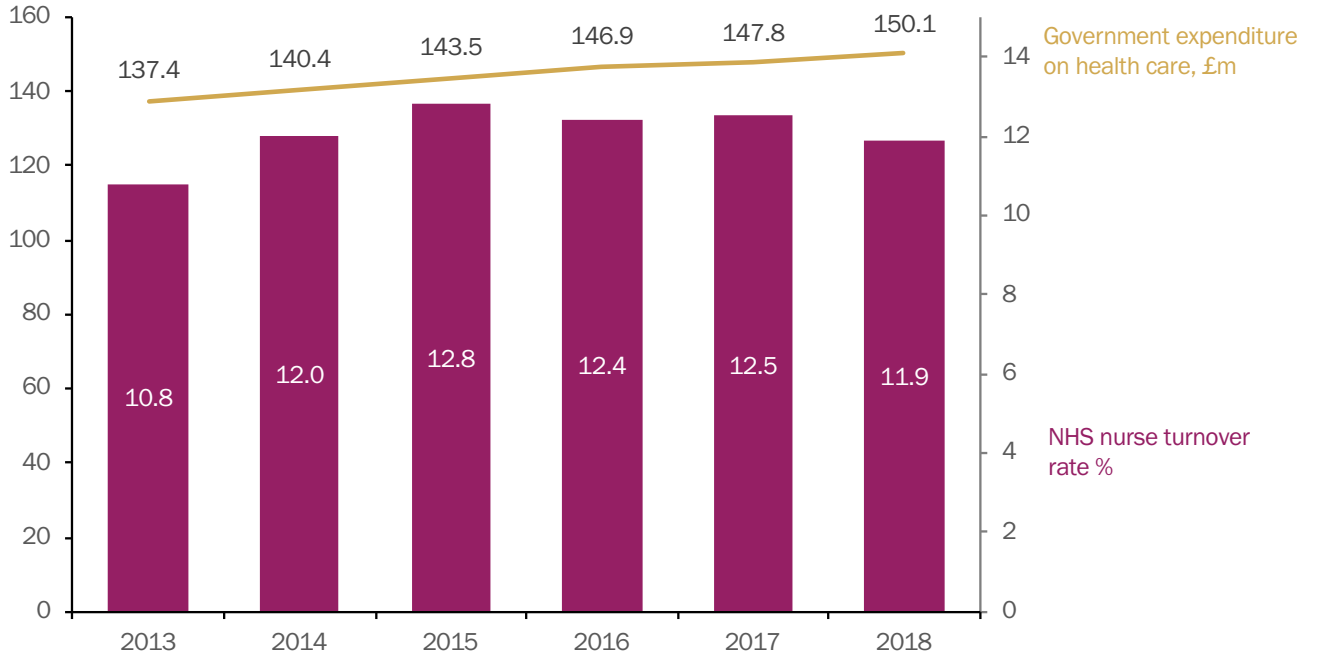
Current attempts to reduce the spend on healthcare staff are not succeeding. The balance of power ultimately lies in the hands of highly skilled professionals, willing to withdraw their labour in the face

FIGURE ONE
ENGLAND'S HEALTHCARE WORKFORCE BY EMPLOYER TYPE, # EMPLOYEES, MARCH 2018



SOURCES NHS DIGITAL; CANDESIC RESEARCH AND ANALYSIS

FIGURE TWO
THE RELATIONSHIP BETWEEN GOVERNMENT HEALTH EXPENDITURE AND STAFF TURNOVER, £M REAL TERMS & % TOTAL NURSING STAFF



SOURCES ONS; NHS ENGLAND; CANDESIC RESEARCH AND ANALYSIS

of policy stances that worsen their conditions and pay.

Fewer people are joining the UK healthcare workforce

Irrespective of the government's commitments to increase the number of nursing and medical trainees, the fall in applicants has been sustained. Careers in healthcare are less attractive than in living memory (Figure Three).

The workforce will be further weakened by reduced immigration. In the UK, our healthcare providers have traditionally been reliant on immigrant healthcare workers (Figure Four).

The dependence of the NHS on workers from other EU countries poses a challenge as the UK leaves the EU, irrespective of exemptions that may or may not come into effect.

Skilled staff are leaving healthcare, retiring early or working fewer hours

Skilled and experienced healthcare staff are a resource than cannot be easily or quickly replenished. However, little has been achieved in addressing the rising proportion of people leaving healthcare for other professions (Figure Five).

Reliance on staff to work uncontracted hours to shore-up a system when demands on staff are increasing, their pay effectively reduced and their perceived value falling is not sustainable. Results of the *2018 Staff Survey* revealed that over 50% of staff are thinking about leaving their current role and 21% want to quit the NHS altogether.

> PEOPLE ARE CHOOSING TO WORK OUTSIDE OF THE SECURITY OF PERMANENT CONTRACTS TO GAIN THE FLEXIBILITY OF TEMPORARY WORK

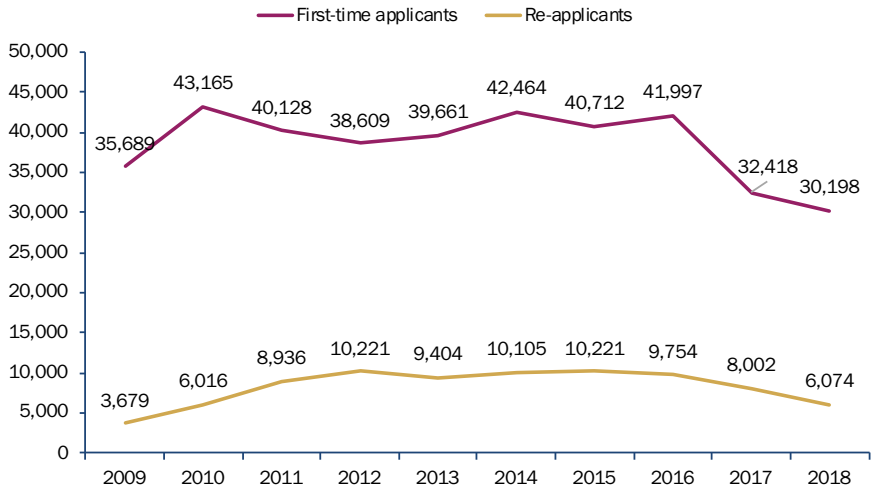
Healthcare providers have been reliant on the goodwill of staff to work longer hours than those they are contracted for; 60% of NHS staff work unpaid overtime every week. However, there is an increasing reluctance among healthcare staff to undertake this 'voluntary work' alongside their paid employment.

Since the 'junior doctor' dispute in 2015, approximately 60% are not choosing to apply onto specialty training (Figure Six). Ministerial policy suggestions of imposing repayment 'fines' on doctors who do not complete a minimum number of years working in the NHS post-qualification will not only dissuade people from entering medicine, but also harden the resolve of junior doctors to meet their contracted hours but put up with less unpaid 'overtime'.

Nurses too were subject to changes in their terms of training and engagement. Nursing training bursaries were abolished in 2017, contributing to a fall in applications for nursing and midwifery courses, with a 31% decrease between 2016 and 2018. In addition, the NHS Pay Review Body concluded that 'starting pay has lost value between 2009 and 2017, particularly compared with RPI inflation'.

At the other end of the spectrum, the willingness of consultants to work addi-

FIGURE THREE
APPLICATIONS TO UNDERGRADUATE NURSING COURSES IN ENGLAND, # APPLICANTS, 2009-2018



SOURCES NHS DIGITAL; CANDESIC RESEARCH AND ANALYSIS

tional shifts to clear backlogs and keep the NHS ship on an even keel is sinking. Consultants can earn a maximum salary of £105k, anyone earning more has been moved into the pension tax bracket. Therefore, although doctors may be working additional hours, they are earning less for doing the extra work; many no longer see value in doing so.

The same changes in pension rules account for record closures of GP surgeries. 62% of GPs who retired in 2016/17 did so before the age of 60, compared to just 33% in 2011/12.

The system has therefore managed to undermine the appeal of work across multiple specialty levels in the context of escalating staff pressure. It is too late to ponder the wisdom of such a strategy; we must now look for solutions to encourage people to stay in healthcare and to bring 'leavers' back into the system.

Innovation in the staff base to reflect changing care practice

We continue to underestimate the abilities of people entering care with fewer qualifications. It is necessary to accelerate the modernisation of staffing roles within the care system.

The shortage of traditional sources of care provision in the NHS, both doctors and registered nurses, means that those occupying existing staff grades will need to be upskilled to form more dynamic multidisciplinary teams. Progress has already been made (Table One), but there is still more to be done.

There will likely be new staff specialties emerging from the technological revolution in care. Given the proliferation of digital information collected by both equipment in the care environment and patients themselves, there is a huge amount of underutilised information.

Swabs are sent to microbiology, bloods to haematology and tissue samples to pathology. Where does remote and patient collected data get sent? There is a role for a new medical specialty. 'Patient Data Scientist' technicians and consultants will have to be introduced alongside the increasing ubiquity of clinical and consumer healthcare technology platforms.

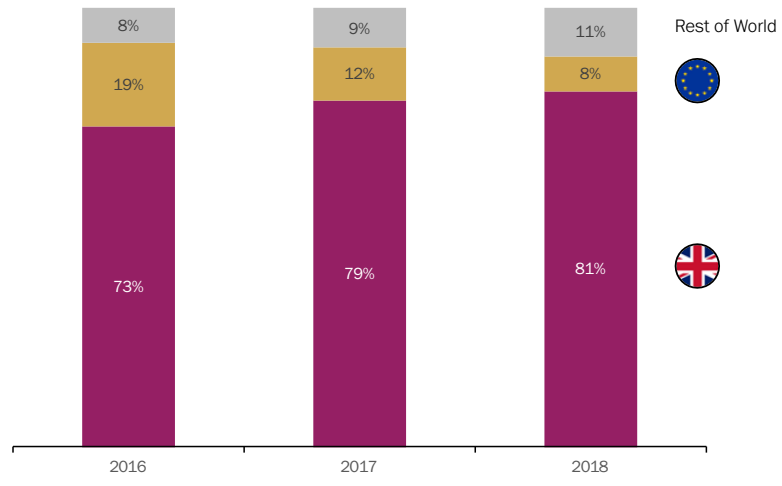
There must be changes in the way patients access care

GPs are traditionally the 'gate keepers' to specialist services, but direct self-referrals are likely to become more common. Direct access to physiotherapy has technically been possible since 1977, when physiotherapists were granted clinical autonomy, but the NHS has been wedded to the idea of using GPs as gatekeepers to access NHS musculoskeletal services. However, self-referral is becoming increasingly widespread. Within Salford Royal NHS Foundation Trust the 'go2physio' system allows patients with MSK presentations to self-refer, reducing the burden on GP practices. Self-referral for other services is anticipated in order to alleviate the pressures on the strained primary care system.

Self-referral into dermatology is likely to be next, through using technology to triage patients. A study published in November concluded that the AI platform 'DERM' used images from a smartphone compatible camera to identify melanomas with a 100% success rate.

The system, developed by Skin Analytics, seeks to address the burden of the 13 million primary care consultations for skin disorders per annum in the NHS, associated with 1.6 million referrals into secondary care.

FIGURE FOUR
NHS WORKFORCE BY NATIONALITY, % OF TOTAL EMPLOYEES



SOURCES NHS DIGITAL; CANDESIC RESEARCH AND ANALYSIS

Innovation in employment models is required to address the crisis

In 2017, of directly employed NHS staff in England, 77% were women and 23% men. Women have become the dominant gender in the junior doctor population, but they remain significantly underrepresented in some specialities, particularly surgery. The balance between work and family life must be addressed.

Part-time work has become more common but is still not part of the NHS culture. The majority of part-time medical and surgical trainees are women, but when surveyed they identify a 'cultural gap of acceptance' with this manner of work being perceived negatively by those responsible for training.

Flexible working is proven to improve staff retention across multiple industries. Flexible working can include working on different days, on different shift patterns, in different teams or in different locations.

Agency and temporary staff continue to be considered as a 'stop gap' solution to a temporary problem. However, you cannot use staff in this way so consistently and not recognise that this way of working has become integral to the staffing model – that it both suits staff and meets the dynamic needs of provider organisations.

The challenge therefore is how to bring the existing 'gig economy' into the care staffing sector in a more structured and sustainable way, whilst maintaining care quality.

Remote interpretation of clinical data is increasingly being used by NHS and independent sector providers. Electrocardiograms (ECGs) and radiological images are particularly suited to be interpreted at a distance from patient care delivery. It also enables the internationalisation of interpretation; smart telecardiology is a service based in India offering interpretation worldwide. Although not yet used in the UK, it offers far less expensive 12-lead ECG interpretation than is achievable in the UK. MEOMED, Primary Diagnostics, Broomwell Healthcare, Express Diagnostics, and ECG On-demand are already amongst providers into the NHS.

Interpretation of ECGs and imaging requires both in-depth knowledge and continual practice, often requiring input from specialists which can lead to significant delay in reporting. Dedicated specialists working remotely can turn around interpretations more efficiently, while benefiting from a higher volume of such work.

As interpretation in not location-dependent it allows for flexible working, with staff able to log into systems and be paid on the basis of the units of activity they complete (the 'uberisation' of care).

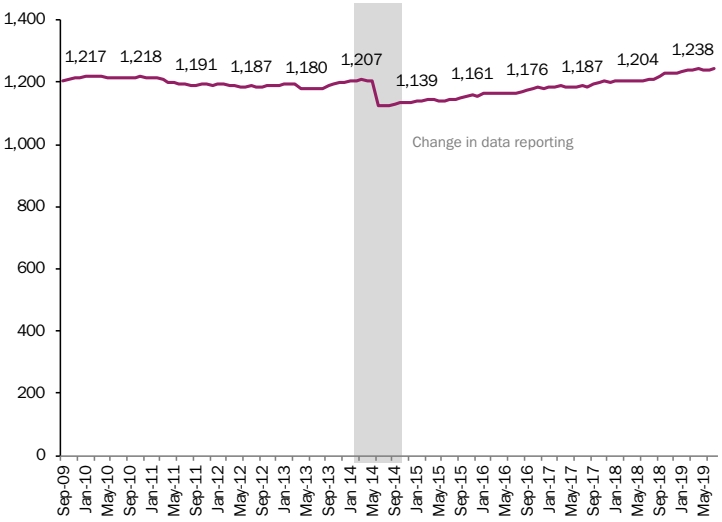
Remote consultations between patients and clinicians are becoming commonplace. Over 60,000 people are registered with Babylon's GP at Hand as their NHS primary care practice enabling remote consultations.

Push Doctor, DCA, Now GP, LIVI and others are providers of remote consultations partnering with the NHS to fulfil the requirement that all GP practices offer online consultations by April 2021.

General practice has always been somewhat of a 'gig economy', with GP surgery partners determining their own rosters. The increasing number of salaried GPs has meant the profession has become less flexible, and this is contributory to the huge number of unfilled GP posts – more than 15% in 2018. Enabling GPs to undertake remote consultations can make more efficient use of their time and bring people back into the profession who don't currently have a practice within which they are embedded.

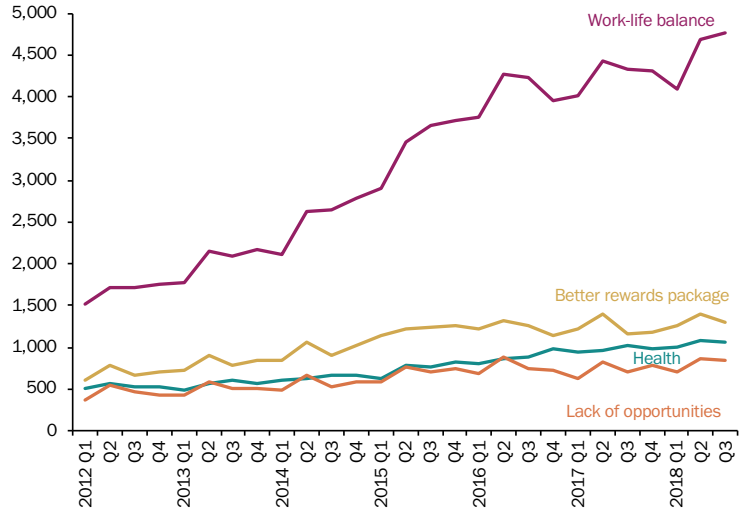
Developments in technology and communications infrastructure have opened up new opportunities for flexible and remote working, with the additional benefit of freeing up space in hospitals and clinics.

FIGURE FIVE
EVOLUTION OF THE TOTAL NHS WORKFORCE, #'000s



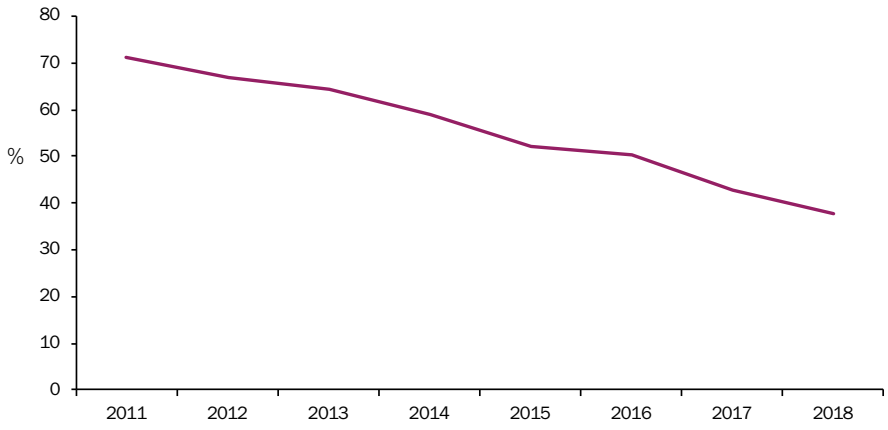
SOURCES NHS ENGLAND; CANDESIC RESEARCH AND ANALYSIS

FIGURE SIX
EVOLUTION OF THE MOST COMMON REASONS FOR STAFF LEAVING THE NHS, # STAFF BY REASON FOR LEAVING



SOURCES NHS DIGITAL; CANDESIC RESEARCH AND ANALYSIS

FIGURE SEVEN
FOUNDATION YEAR DOCTORS EMBARKING ON SPECIALITY TRAINING, # % FY2s GOING DIRECTLY INTO SPECIALITY TRAINING



SOURCES FEDERAL STATISTICAL OFFICE; PFLEGEMARKT.COM; CANDESIC RESEARCH AND ANALYSIS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Conclusion

Our ability to provide universal care of the highest possible standard is not sustainable unless we fundamentally rethink how, when and where care professionals work. New technologies can support us in delivering flexible and remote working, but they will only be effective alongside a cultural transformation in the way we support people in the way they want to work.

We have been familiar with associating high staff churn rates and frequent use of agency staff as negative indicators of provider performance. However, providers will have to respond to the staffing shortage with innovative employment strategies.

When there is a choice between the job they want to do and the life they want to lead, the latter will win. Let's use the tools at our disposal to ensure that fewer healthcare staff face such a choice.

TABLE ONE
TABLE OF INNOVATION IN THE STAFF BASE

Role	Description	Date of Introduction
Advanced Nurse Practitioners	• Can assess patients, make diagnoses and provide treatment, often substituting for doctors • Agree a clearly defined scope of practice with their employers	2017
Nursing Associates	• Bridge the gap between care assistants and Registered Nurses • Their role is to enhance the quality of personalised care by supporting nursing staff and reducing the dependency on Registered Nurses	2016
Clinical Pharmacists	• Carry out structured medication reviews for patients with ongoing health problems • Provide help to manage long-term conditions and multiple medications	2015
Physician Associates	• Medically trained, generalist healthcare professionals who work alongside doctors and provide medical care on multidisciplinary teams	2005

SOURCES CANDESIC RESEARCH AND ANALYSIS