What can statistics tell us about the state of the NHS upon the outbreak of the SARS-CoV-2 pandemic?

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Abstract

This paper draws upon selected statistics to paint a picture of a National Health Service which was not only ill-prepared for the pandemic, but the resilience of which had been undermined by policy, especially during the decade leading up to the pandemic. The paper argues that financial constraints, failure to care adequately for the workforce and the ongoing closures of hospital beds in a context of rising pressures had resulted in the health service having insufficient capacity to meet health needs even prior to the pandemic. The policy priority of restructuring health services and the shrinking of the NHS estate, reflecting in part inadequate capital investment, distracted attention from pandemic preparedness and reduced the room for flexibility available to NHS managers when large numbers of infectious patients began to be admitted to hospital. Public health had been significantly damaged by reductions in its budget and by its three-way partition in the 2012 Health and Social Care Act, reducing its ability to mount an effective and coherent response to the pandemic crisis. The capacity of primary care and NHS 111 were insufficient to meet need even before the impact of the pandemic was felt and social care, upon which the NHS depends for the effective use of its own resources, had been debilitated by chronic underfunding and the application over many years of competitive market forces in a context of severe financial constraint.

Introduction

When the virus SARS-CoV-2 reached the UK it gave rise to significant levels of Covid-19 disease, with significant implications for the NHS. This short paper discusses different dimensions of pandemic readiness.

The funding and capacity of the NHS on the eve of the pandemic

Funding of NHS

The Covid-19 pandemic occurred in the context of a decade of austerity which had significantly damaged public services. Between 1949 and 2010, annual average real terms increases in NHS funding were just under 4% but this plummeted to around 1.4% between 2010 and 2019.

The true impact of this reduction in annual increases can be assessed only when we consider the upward cost pressures faced by the NHS (e.g. changes to the size and age structure of the population, the changing profile of morbidity with a growing incidence of chronic conditions) which had been estimated to be around 4% annually (Roberts et al, 2012; King's Fund, 2021a). The funding settlement reflected an ideological determination in the Conservative Party to reduce public spending as a proportion of GDP. The more recent funding settlement, covering the 2019-2024 period was better - 3.4% for the part of the budget covering health care services. However, even this remained below the 5% thought by experts to be necessary for recovering lost performance, for instance by driving down lengthening waiting lists, and for implementing the 'transformation' of health services sought by government (Hopson, 2018). Thus Covid-19 hit the UK at the end of a decade in which the NHS had received the lowest level of funding relative to the needs it was trying to meet since its creation; despite strenuous efforts to bear down on costs, around £14bn of debts had been amassed across the service by 2020 (Dunhill, 2019).

Thus, the NHS went into the pandemic in a financially straitened position.

Workforce

The under-funding of the health service relative to need resulted in enormous pressure on the service's 1.3m staff (in England) many of whom found themselves being reorganised by their employers for more effective deployment, taking on higher workloads, trying to provide care with fewer staff and suffering 'downbanding' (losing job grade and pay for doing the job or having to take on a higher level of responsibilities to retain the same job grade) (e.g. West, 2020). All of this compromised job satisfaction and both recruitment and retention failed to meet requirements such that by 2018 over 100,000 vacancies had been identified in the service, with overseas nurse recruitment suffering especially badly in the immediate aftermath of the Brexit vote (Beech et al, 2019; RCN, 2020). Over 40,000 of these vacancies were in nursing which suffered a lower rate of workforce growth - 6.2% growth of full time equivalent (FTE) staff between 2010 and 2020 - than the workforce as a whole which grew by 11.9% FTE during the same period (NHS Workforce Statistics, 2020). Consistent with a working context of chronic underfunding and sustained pressure, elements of the workforce experienced worrying levels of turnover, for instance 11.9% in nursing and 13.4% among mental health clinical staff in 2019, and a number of surveys

reported dissatisfaction as reasons for leaving a job (NHS England, 2019). For example, a Nursing and Midwifery Council (2017) survey found 44% of nurses leaving their jobs blamed working conditions, including workload and staffing levels; 27% cited poor quality care; 16% poor pay and benefits. NHS Workforce Statistics reported that work-life balance was the largest single reason cited for leaving (26% in 2018/19) and Halter et al's (2017) systematic review of systematic reviews found multiple determinants of turnover in adult nursing, particularly stress and dissatisfaction, managerial style and supervisory support factors (Beech et al, 2019; Halter et al, 2017). The Care Quality Commission's State of Care 2019/20 report (CQC, 2020:26) noted that 'staffing issues in all regions have been a key factor affecting access to services' (CQC, 2020:26).

Most employers believed the pay restraint in place between 2010/11 and 2017/18, with pay freezes or pay rises capped at 1% such that a nurse's starter salary had lost 10% of its real terms value between 2010/11 and 2017/18, played an important role in the service's staffing problems (Beech et al, 2019). The earnings of staff in health and social care fell further in real terms value than wages in the economy as a whole (Beech et al, 2019). Despite the obvious fact that a health service is only as good as its workforce, health policies have been pursued regardless of their likely impact on staff and the relatively low level of priority placed on strengthening the workforce is evident in cuts in the education and training budget, and the decision to abolish the bursary for most health profession trainees (effective 2017) (Iacobucci, 2015).

This decision was ostensibly to permit the trainee workforce to expand without limits to the public budget requiring a cap on numbers of trainees but it resulted in reductions in applicants for some courses such as nursing (Pisavadia, 2020). Workforce strategy, such as it was, focussed on increasing the proportion of the workforce accounted for by 'support to clinical staff' workers (less qualified supports to clinical workers, typically not on a professional register) which grew by 20.8% FTE in the decade up to the beginning of 2020 (NHS Workforce Statistics, 2020).

Thus, the NHS went into the pandemic with an already depleted workforce.

Beds

NHS beds have been declining in number over many decades: for example, because policymakers have wanted to see more care in community settings, because of changes in cultural practices such as the length of time women are expected to stay in bed after having a baby, or for technological reasons such as keyhole surgery which make short stay or day

case treatment possible. However, even as pressure on acute beds has intensified in the past few years, bed numbers have continued to decline, such that there were around 17,000 fewer beds in February 2020 than there had been in February 2010, including 10,000 fewer general and acute beds (NHS Beds Database, 2010, 2020; Ewbank et al, 2020).

By 2018, the UK had one of the lowest ratios of beds to population in the developed world: the OECD average of 4.5 beds per 1,000 population contrasted with the UK's 2.5; Germany's was 8 (2017) (OECD, 2021). With regard to critical care beds, in early 2020 the UK had fewer than 4,400 at its disposal in March 2020 while Germany had 28,000 (Bauer et al, 2020).

Consequences of capacity constraints

One of the overall consequences of these significant constraints has been a lack of capacity to provide the care needed by patients. For example, on the eve of the pandemic, 17.1% of patients had to wait for more than two weeks for a GP appointment when they wished for something speedier (BMA, 2020). While in February 2010, 90.3% of patients commenced treatment within 18 weeks of a GP referral and 2.34 million people were on the waiting list, by February 2020 these figures had deteriorated dramatically to 83.2% and 4.43 million, respectively (RTT, 2021). Measures to reduce demand for health care had been implemented over several years such as the removal of certain items from the NHS prescription list (meaning they could no longer be obtained free by those entitled to free prescriptions but had to be purchased over the counter); the removal of some procedures from routine NHS availability and the establishment of referral management systems to scrutinise GP referrals to assess whether each referral was really necessary.

Another consequence was the increased reliance of the NHS upon private health sector capacity to provide procedures and diagnostics. There are several policy drivers of increased privatisation of NHS care. One is an ideological belief in what is described as a 'level playing field' in a competitive market and another is the so-called 'choice' agenda. The 2012 Health and Social Care Act increased the use of competitive processes in the awarding of contracts and prohibits commissioners from expressing 'preference' for NHS providers; the Any Qualified Provider policy (whereby private companies and others can apply to be licensed to provide specific services and, once licensed, must receive NHS payment when their services are chosen by NHS patients) mainstreams private sector provision of NHS funded care especially in elective services.

A third policy driver of privatisation is precisely constraints on NHS capacity. Lengthy waits for treatment from NHS providers such as local hospitals incentivise patients to choose alternatives - usually independent sector alternatives. Additionally, the lack of theatre and bed capacity

in NHS hospitals, combined with the 'emergency patients first' policy during the winter months when emergency hospital admissions increase, can result in local commissioners (Clinical Commissioning Groups) contracting out some elective care to non NHS providers as the ability of NHS hospitals to provide elective care drops. Moreover, some NHS providers themselves have contracted 'their own' work out to private sector providers, for instance because of waiting time targets.

Table 1 below is based on Rowland's analysis of the ways in which NHS expenditure on non-NHS providers is calculated (Rowland, 2019).

Table 1 NHS Expenditure on non-NHS bodies

Expenditure on non-NHS bodies	**2013 /14**	**2018 /19**	**Change 2013/14 to 2018/19**
Purchasing of health care from non-NHS providers by NHS England Group	£6,467m	£13,734m	47%
Purchasing of health care from non-NHS providers by NHS providers	£683m	£1,328m	106%
Total NHS England Group expenditure on independent sector providers	£24,173m	£29,827	23%

Adapted from D Rowland, 2019

By the same token, another consequence of capacity constraints has been the increased dependence of the independent acute hospital medical/surgical and clinic sector on revenues from NHS work: where in 2007, 5% of this sector's revenues were derived from the NHS, by 2018, this had increased to 32% (Barrett-Evans et al, 2018).

Restructuring and reconfiguring health services

Estate

Reductions in the number of beds in recent decades has contributed to the reduction in the number of NHS hospitals. Two broad reconfiguration processes have been advanced in government policy over the past two decades or so by which the physical organisation of services has altered: one is a model of reconfiguration in which as many services as possible are transferred out of hospitals into community settings; the other is a model of concentration in which major hospital departments such as maternity and emergency are centralised onto fewer sites. These processes, which predate the past decade, have been more urgently pursued in recent years, in the context of severe financial restraint. Inspired in part by managed care in the United States, the 'new

models of care' advanced by NHS England look to reduce the amount of care provided in 'high cost' settings (acute hospital settings) and to increase the proportion of care given in cheaper settings with lower overheads (including the patient's own home). These policies permit the sale of hospital estate.

The gradual 'shrinking' of the NHS estate is furthered by cuts to the capital budget which declined by 7% between 2010/11 and 2017/18 (Kraindler et al, 2019), bringing some estate into disrepair, and by the Review of estates undertaken by Sir Robert Naylor, the recommendations of which were adopted by government. The Naylor Review (Naylor, 2017) identified around 1,200 sites owned by NHS Trusts, with a value loosely estimated to be between £9bn and £11bn. He identified a need for around £10bn of capital spending and advocated the sale of around £2.7bn worth of existing estate with the investment of the proceeds into improving the quality of remaining estate.

Quite apart from the closure in decades past of fever hospitals and sanitoria, the more recent policies of reducing available estate and running down the quality of estate arguably reduced the options available to hospital managers in managing large numbers of infectious patients and the flexibility they enjoyed in separating infectious from non-infectious patients.

Health Systems Support Framework

The shift to new models of care on the basis of accountable care systems and accountable care organisations (currently called, respectively, integrated care systems and integrated care providers) has been the main focus of policy since Simon Stevens' appointment as Chief Executive of NHS England, which steers the NHS and has adopted a strong command and control model. A new framework of 'support' has been put in place to assist NHS organisations in refashioning how they work as they undertake this latest top-down imposed reorganisation. This framework consists of licensed organisations (around 80 of them, almost all of which are private) which can be contracted to provide certain kinds of services such as demand management and capacity planning support, informatics, analytics and digital tools support, and patient 'empowerment' support (NHS England, 2021).

Arguably the dominant focus on reconfiguring services, thinning out estate and implementing top-down reorganisation weakened further the attention that has been paid in the past decade to considerations of pandemic preparedness.

The readiness of primary care, public health and social care

Public health

This argument might receive further support from developments in public health in the years leading up to the pandemic, itself the largest threat to public health faced by the UK since the second world war. The controversial 2012 Health and Social Care Act split public health provision three-ways such that some of it is provided by public health departments in Local Authorities; some of it is provided by the NHS and some of it is located outside both the NHS and Local Authorities (Public Health England, which is an executive agency inside the Department of Health with regional offices). Concerns about the implications of the loss of coherence arising from this tripartite structure for pandemic management were expressed soon after its implementation (e.g. Pickles and Rowland, 2014).

Public health capability was further undermined by chronically low levels of funding. Money was in fact taken out of the public health budget and given to NHS England to be spent on health services (Iacobucci, 2015). While England's health and social care budget was £150bn in 2019/20, for example, only £3.3bn was planned for public health spending by Local Authorities. Net revenue expenditure on public health services in England decreased by 13% on a like-for-like basis since 2013/14, with significant cuts from 2016/17. Ironically, cuts to spending on health at work were the most severe at almost 50% between 2016/17 and 2020/21 (King's Fund 2021a, 2021b). Meanwhile central government grants to Local Authorities were cut, creating additional pressures on council resourcing.

The timing of these cuts could not have been worse and, combined with the fragmentation of public health provision, created a state of unreadiness. The failure to implement recommendations arising from the Shirley-Quirk Report following the 2016 pandemic simulation exercise (Exercise Cygnus), the deprioritisation of pandemic preparedness in the context of austerity and the privileging of the second partly finance-driven forced health system restructuring in a decade added to the inadequacies of the response in England to the pandemic. This was despite the complacent belief that the strong track record on UK public health responses would see us through (Shirley-Quirk, 2017; Calvert et al, 2020; Pegg et al. 2020).

Primary care and NHS111

Primary care was not in a strong position when the Covid-19 pandemic hit either. GPs and their trade union, the British Medical Association, had been warning for several years that rising workloads were unsustainable. In 2019, there were 312m appointments in GP surgeries, with

numbers of appointments rising. However, full-time equivalent GP numbers had been declining since 2015, despite an increase in the number of training places (BMA, 2020). This was partly because, by December 2019, 45% of GPs were choosing to work less than full-time, working instead on a part-time or locum basis (Triggle, 2019). Alongside this, 45% of 'GP appointments' were in fact with non-GP members of a multi-disciplinary primary care team (BMA, 2020). In the context of this shortage of resource in traditional family doctor provision, the public were advised by government to contact NHS111 in the event they experienced Covid-19 symptoms.

NHS111, which is an advice-giving telephone service provided across England via multiple providers, including private companies, was thus entrusted with this responsibility. However, data analysis undertaken by the Health Foundation demonstrates that not only was NHS111 unable to handle the sharp spike in calls which occurred during March 2020 but that it had been answering fewer than 90% of calls in the pre-pandemic period (Vestesson and Gardner, 2020).

Table 2: NHS 111 calls received and answered in early 2020

	December 2019	January 2020	February 2020	March 2020	April 2020
No. calls	1,844,804	1,503,318	1,625,240	2,962,751	1,655,146
Change in no. calls on previous year	+191,047	-31,771	+217,407	+1,515,625	+202,702
Calls answered	1,577,276 85.5%	1,329,760 88.5%	1,362,402 83.8%	1,388,916 46.9%	1,254,667 75.8%
Change in calls answered on previous year	+95,499	-29,913	+130,392	+69,665	-68,860

Source: Data from Vestesson and Gardner (2020).

Social care

The NHS relies heavily on social care and the interaction between the two came into sharp relief when the decision was made in March 2020 to discharge, from acute hospitals facing rising numbers of Covid-19 admissions, frail older people, often to care homes and nursing homes, without a SARS-CoV-2 test. Unfortunately, the care sector itself was ill-prepared for the pandemic.

Between 2009/10 and 2017/18 overall spending by Local Authorities on adult social care fell by 5% (IFS, 2019). In fact by early 2020, public funding in social care in England was still £300 million *below* the level of funding in 2010 in real terms despite a rise in the number of people requiring social care (Bottery, 2020). The Association of Directors of Adult Social Services estimated the funding gap in adult social care for 2019/20 to be £2.4bn (Economic Affairs Committee, 2019). AgeUK estimated that there were 1.5million people with unmet care needs in 2019, partly due to a tightening of the eligibility criteria for publicly funded social care which had taken place during the decade as budgets shrank (AgeUK, 2019; TUC, 20).

The social care sector is quite different from the NHS in that access to public funding is means tested and provision is fragmented across multiple sectors. The application over many years of competitive market forces in a context of financial constraint had resulted in fragmentation and a low paid, casualised workforce, undermining the quality of care which can be provided. By 2012, only 6% of nursing and residential home beds and 11% of domiciliary care were publicly provided (Fotaki et al, 2013). The 2019 Skills for Care report (SfC, 2019) found that in England 18,500 organisations were providing adult social care employing 1.5 million people. Various factors contributed to the marginalised status of this workforce. The vast majority of employees (82%) were female and a significant number (17%) were non-British national (TUC, 2020). More than 50% of organisations employed fewer than 10 people. 145,000 people worked for direct payment recipients who hire their own care staff. Workers were fragmented across the private sector, third sector, local authority sector, NHS and direct payment employers, with the largest proportion (59%) in the private sector (SfC, 2019).

The social care workforce is also highly casualised, with 25% of the overall workforce and 35% of care workers on zero hours contracts. Twenty per cent of care workers were on the minimum wage and the mean hourly wage was only 50p higher. Moreover, over 50% of the social care workforce not subject to professional regulation had no care qualifications (SfC, 2019). The unvalued character of the workforce has led, inevitably, to high levels of turnover with 30.8% of turnover among directly employed staff (440,000 individuals) (SfC, 2019) and 40% among care workers (CQC, 2019). The vacancy rate stood at 7.8% (SfC, 2019) and staff shortages, particularly among specialist staff tend to lead to imperfect skill mix, a tendency towards a production line approach and a reliance upon agency staff.

These conditions contributed significantly to the unpreparedness of the care sector at the start of the pandemic. The shortage of staff may have

been literally fatal as many employers relied on agency staff, a reliance which is thought to have helped spread the infection among care homes. The fragmented, highly privatised care sector does not share the strong cultural identity enjoyed by the NHS in the UK and its overworked, underpaid workers are not organised into strong trade unions and professional associations such as the BMA and RCN. Both of these factors arguably contributed to the delays in attending to the needs of the care sector during the early weeks of the pandemic, particularly in relation to personal protective equipment when the better organised more visible doctors and nurses of the NHS were taking to social and mainstream media directly and were effective in raising public awareness and placing acute pressure on government to act. To make matters worse, the government appeared to have failed to act on the recommendation in the Shirley-Quirk Report that action needed to be taken to ensure the care sector could expand adequately to cope with the surge in demand arising from the 'reverse triage' of rapidly discharging patients from hospitals to care sector (Shirley-Quirk, 2017; Pegg et al, 2020).

Conclusion

The NHS, like the social care sector, was poorly positioned to cope when the SARS-CoV-2 pandemic hit the UK in 2020. It had been debilitated after years of under-resourcing, both in terms of funding and in terms of workforce. The emphasis upon running down bed numbers and sweating the estate left the NHS with little room for manoeuvre when an infectious illness required surplus capacity and flexibility in the use of physical space. The decision in 2015 to take money *out* of the staff training and public health budgets in order to transfer resources to equally hard-pressed health care services represented a counter-productive, short-sighted and even possibly lethal exercise in robbing Peter to pay Paul. It is a matter of irony that the 'integrated care systems', emerging from the 'new models of care' beloved of Simon Stevens and the government, are supposed to be predicated upon a strong preventative and public health function to reduce demand for health care. Meanwhile, the focus on driving down the unit cost of health care, restructuring services and paring back what was already limited (in international terms) and overly-pressured hospital capacity, distracted attention from effective pandemic planning and resulted in a de facto deprioritisation of pandemic readiness.

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