



RADIX

VOLUME ONE

PROFESSOR STEPHEN K SMITH

The Best NHS?

An introduction to reforming the
UK's system of health and care

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FOREWORD

*By Ben Rich,
Chief Executive, Radix UK*

As long ago as 2015, the author of this book, Stephen Smith - together with his brother, Ian published an article in *Health Service Journal* predicting the crisis in the NHS that is emerging now.

We had barely imagined a lockdown in those days, let alone a global pandemic, yet the roots of the current crisis may have been obvious then. What Stephen says in this short book, the first in a series of 12 monthly books which I am proud to say that Radix is publishing, is that the signs were there back then of the catastrophic crisis now evident in the delivery of UK healthcare. Covid seems to have triggered precisely what they predicted.

This book, the first in the series, provides some background about the eight major issues that lie behind the long-term crisis. The others will follow every four weeks or so for the rest of the year and until next summer.

You will I am sure not agree with everything he suggests but this is an expert with unprecedented experience. So what he says deserves to be taken seriously. If you have an opinion on these - or anything else - please let us know at Radix and we will do our best to hold the reins of the ensuing debate.

In the meantime, here is the full list of 12 - these will not be their final titles, but they give a sense of the breadth of the subject area they will cover:

- 1. Post-covid introduction.**
- 2. What to do about social care.**
- 3. NHS inequality.**
- 4. NHS and tax.**
- 5. Poor NHS management and what to do about it.**
- 6. Tackling the crisis in older people's care.**
- 7. NHS primary care.**
- 8. NHS hospital care.**
- 9. Seizing the opportunity to transform the NHS.**
- 10. Improving patient safety.**
- 11. The new medicine.**
- 12. Managing change.**

"It is important to be clear about where the problem lies. The problem is not with the clinicians and carers, who are amongst the best trained and dedicated in the world. The problem is not with 'theoretical' access to the service in a system that is 'free-at-the-point-of-care'. The problem is not with the UK's bio-medical science: the UK has three of the top ten universities in the world (and they perform especially well in bio-medical science). The problem is with the system in which scientists, clinicians and carers work, and the way in which it lets them down. It is a system that is stuck in 1948, a system that has been further undermined by the cuts in social care since 2010. The UK's health and care system is no longer 'fit for purpose'.... It is dangerous."

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INTRODUCTION

In 2015, my brother and I published a paper in the *Health Service Journal* that identified an impending crisis in the UK's health (NHS) and social care system.

The near-term causes of the crisis were the cuts in social care spending since 2010, and the resulting pressure on the NHS, both in terms of over-stretched, acute hospitals and increasingly difficult access to General Practice Physicians (GPs).

The longer-term cause was, and remains, that the system – the way patients move through it – created in 1948, which was perfectly well aligned with the needs of the population at that time, has remained largely unchanged since, and has become seriously misaligned with health and care needs that have changed markedly over the past 70 odd years.

We began the 2015 paper by writing:

'A crisis is looming in health and social care in the United Kingdom. The population is ageing, the prevalence of chronic ill health increasing, and demand is rising at the same time as funding falls. Parts of our system are already operating at crisis point, yet the pressures are only set to increase.... We have little choice but to take action. Unless we do, there is a real risk of catastrophic failure in both the NHS and the social care system.'

One of the major recommendations of the 2015 paper was the formation of integrated care organisations that brought together health and social care and managed regions of about 1.5 million people as a system. It is encouraging that the NHS announced in 2019 early moves to create integrated care systems that would, indeed, begin to connect NHS institutions in a region, and try harder to co-ordinate local authority (social care) and NHS responsibilities. It's encouraging, but there is still much to do.

In June 2020, we published a report with the think tank ResPublica, extending the analysis with more detail on how the system could be improved. It was published towards the end of the first Covid-19 lockdown. It recognised the heroic work of frontline staff, but lamented how the system often made their lives more, not less, difficult.

It concluded that reform was even more urgent as a result of the coronavirus pandemic because the system would come under intense pressure as non-Covid-19 clinical conditions that had been necessarily side-lined, such as cancer and elective surgery, would surge. And that this would happen in a system that was already running above capacity before the crisis: in winter 2018/19, the hospital sector ran at 95 per cent capacity utilisation,¹ 10 per cent above the recommended safe level of 85 per cent.²

The pandemic will mean that hospitals will have to reduce capacity so as to maintain social distancing in hospitals, run more slowly due to clinicians taking-off and putting-on personal protective equipment (PPE), and the need for surge bed capacity to be kept empty to cater for the new pandemic outbreaks that are likely to occur despite the great scientific achievement of producing a vaccine for the particular strain of Covid-19.

Some of the other post-Covid effects that will reduce productivity are illustrated in the two charts below.³

POST-COVID EFFECTS ON NHS EFFICIENCY (1)

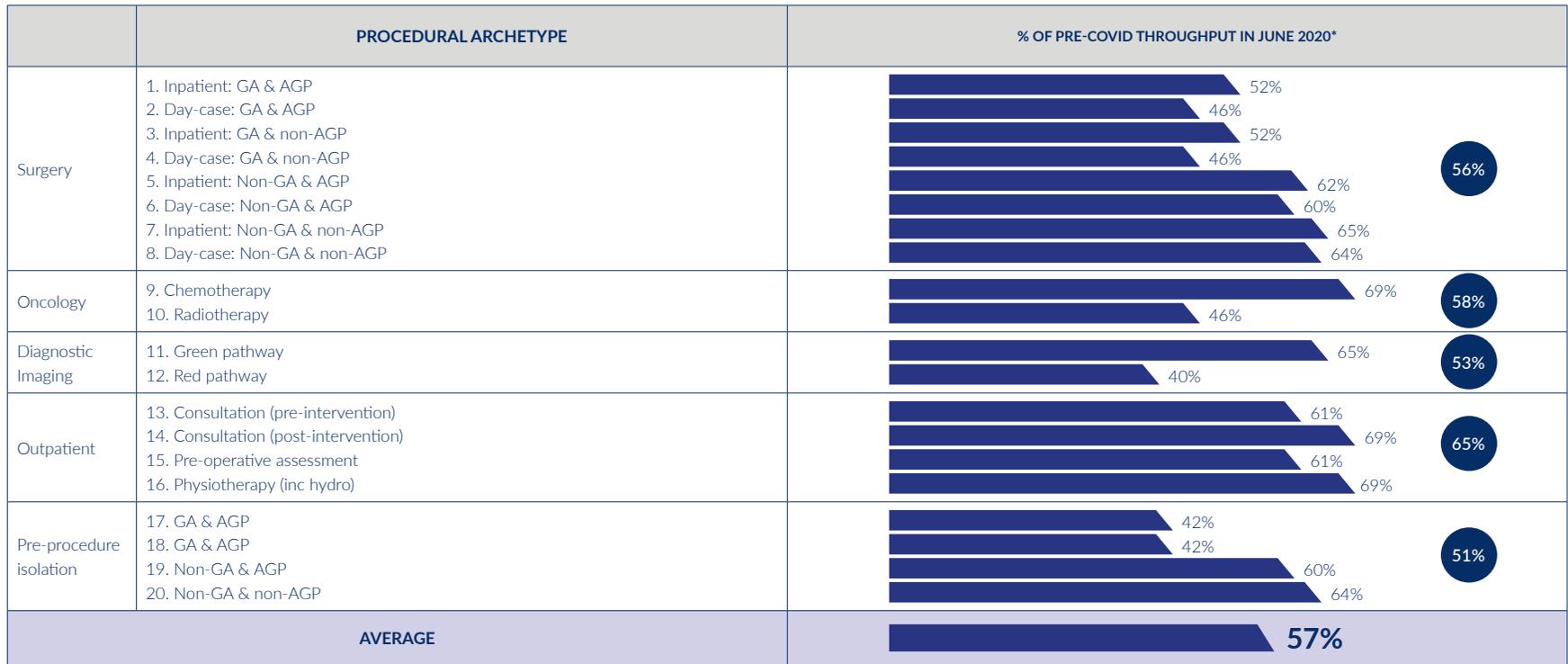
Agreed protocols and relevant drivers of delay distilled from published Covid guidance.

	PROTOCOL	EXAMPLES OF SPECIFIC DELAY	TIME DELAY (MINS/%)
1	 Covid tests	Testing for Covid required pre-procedure alongside MRSA swab	N/A (manifests as a cost impact)
2	 PPE	Donning and doffing specific PPE required for procedures	0-5 mins each for donning and doffing
3	 Aerosol generating procedures	Extubation of patients must be performed in theatres as it is an aerosol-generating process Fallow time must be allowed after an aerosol-generating procedure to allow for air changes	20 minutes 5 minutes
4	 Social distancing rules	Patient moves are delayed as they cannot be held in a waiting area before their procedure	5 - 20 minutes
5	 Pre-procedure isolation	Cancellations cannot be backfilled as patients are required to isolate before procedures	10%
6	 Cleaning	Additional time is required for cleaning depending on the patients Covid status	0 - 20 minutes

Specialist guidance on protocols by: NICE, Royal College of Surgeons, Royal College of Radiologists, College of Radiographers, Royal College of Ophthalmologists, ENTUK, British Society for Gynaecological Endoscopy.

POST-COVID EFFECTS ON NHS EFFICIENCY (2) 4.5

July 2020 throughput reduction against non-Covid levels for 20 procedure archetypes



* Throughput calculated from application of Covid related delays to each procedure archetype.

My intention is to build on our 2020 report to outline a more comprehensive path forward. Together with my brother I have frontline experience of managing in health and social care, and this book-series draws on these coalface experiences to describe practical solutions that have been tested in the real world. Such a perspective is not as common as many people might imagine.

Most people both within the system and ordinary patients and citizens would say that change seems to be happening all the time and everywhere. They would say that, if you look, there are reams of reports and policy papers and recommendations and five- and ten-year plans from politicians, civil servants, senior NHS managers and the many healthcare think tanks that cluster around Whitehall and Westminster.

And they would be right, there is lots of activity, but there is very little productive action. The UK is 'healthcare policy rich, but patient-impact poor'. If you leave the NHS for two weeks and return, you find that everything has changed. If you leave for 20 years and return, you find that everything is the same.

Clearly a change programme involving 3 million people (in health and social care) and costing over £200 billion is not a 'flick of the switch'. There are no easy answers and no 'magic' policy buttons. The complexity of an effective and comprehensive change programme cannot be described briefly. Therefore, the presentation of this plan has been divided into a 12-book series that will be released monthly and will cover the complete landscape of health and social care reform. This first book outlines the problem and summarises some of the solutions that will be addressed over the 12 book-series.

The book-series, then, takes a different tack. It does talk about policy, especially policy that is politically sensitive (such as how to make sure that the service is adequately funded over the long term), but it does so in practical and actionable ways. Importantly, it describes ways in which key parts of the system can be better managed to improve outcomes.

In Book 7, it will describe a high-risk care-management programme, for instance, that is being pioneered in Bromley that shifts the system from nine minute GP appointments (the average across the country) to personalised care for the most vulnerable people in our society. The programme results in those patients faring better whilst also keeping them out of highly pressured and expensive hospitals.

To cite another example, Book 8 describes how to run an efficient A&E department, based on experience and data from King's College Hospital, so that more patients are more safely and more quickly discharged.

In Book 6, it gives details, from real experience, of how the care home and domiciliary care system can be made more stable and more responsive to patients, and how it can be better aligned with, and supportive of, the NHS. Book 11 explains how clinical practice and academic science need to be better linked so that patients can benefit from the international trends towards 'personalised medicine', and how that will safeguard the UK's life sciences industry.

Book 10 outlines how the Care Quality Commission (the CQC, the major regulator of quality) can be reformed to support clinicians to learn from mistakes and, thereby, build a safer system. These are just some examples of the practical recommendations contained in the book-series.

The book-series not only describes a 'vision', though that is done well, for instance, in the latest NHS 10-year plan (2019).⁶ But, more importantly, it describes the concrete steps that we need to take to get to that 'vision'.

The UK healthcare system, the NHS, has some marvellous positives. It has skilled and dedicated clinicians, it is a world-leader in bio-medical science, and it is free at the point of care. Yet, all of these positives are undermined by an increasingly fractured system.

The final part of this book looks at the eight constraints to productive change which are:

- 1. Threadbare social care.**
- 2. Major cracks between health and social care.**
- 3. An overly centralised system requiring devolution.**
- 4. Insufficient money.**
- 5. Inadequate and under-supported management.**
- 6. Jumbled jurisdictions.**
- 7. Under-management of broader, scale-efficient healthcare economies.**
- 8. Muddled and overlapping national bodies.**

The malfunctioning of the system not only makes it clunky and disorientating for clinicians and patients, it also has a direct effect on quality and safety. These effects are illustrated in a case study on the UK's poor performance on cancer survival rates following a discussion of the eight constraints to change.

The pressure on the UK's health and care system.

> SECTION 1

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The NHS was truly 'the envy of the world' when it was set up in 1948, and it was perfectly fitted to the needs of the UK population in the middle of the 20th century. At that time, most people passed away before the age of 65 and died within months of their terminal illness.

Out-of-hospital (social) care for the elderly, therefore, was not a mass need as people died before they contracted dementia, or chronic diseases, or succumbed to frailty. District General Hospitals (DGHs) performed relatively simple operations while independent, single-doctor General Practice (GP) surgeries dispensed drugs, especially the recently discovered antibiotics, dealt with minor illnesses, and referred more serious cases to the DGHs.

People with mental health conditions were locked up in mental asylums, over 150,000 as late as the 1960s.^{12,13} Today there are barely 16,000 beds in England for those with mental health problems.¹⁴ Quite properly, the 'lunatic asylums' have been closed down, and their former patients live in the community. Yet too little psychological or psychiatric care is available for them there.

Public Health,¹⁵ with its emphasis on preventing illness, was deemed surplus to requirements, in part as a result of its huge success in reducing mortality towards the end of the 19th century, through major initiatives in hygiene, sanitation, and immunisation.

The needs of the UK population have changed dramatically since 1948. A person born today has a life expectancy of 85, but the later years will rarely be comfortable as people live with chronic diseases, such as treatable forms of cancer, dementia and diabetes, and with the various medical conditions that accompany old age and frailty. Preventable lifestyle diseases, such as obesity, alcohol abuse, and excessive drug use (both prescription and illegal) are rising alarmingly, exacerbated in part by persistently high levels of poverty.^{16,17}

Unfortunately, the way the health and care system works has barely evolved since 1948, and already-inadequate out-of-hospital care has been further denuded both by cuts in social care funding since 2010 and by rising, unfunded demand for such services.

Since 2010, £7.7bn has been cut from adult social care budgets in England. A further £700m of cuts were planned for 2019-20 prior to the Covid-19 pandemic.¹⁸ Social care, although increasingly vital to protect the most vulnerable in our society as the incidence of chronic and lifestyle diseases rise, remains an afterthought and quite separate from the NHS.

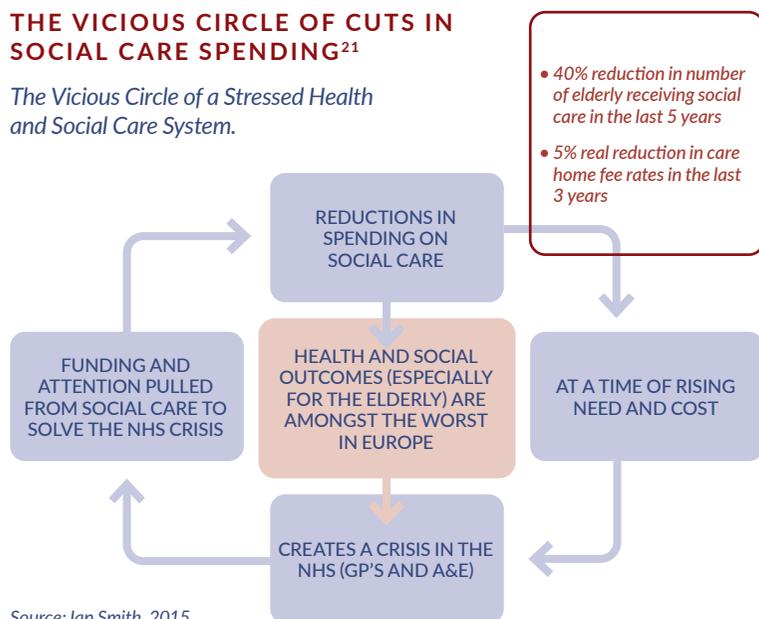
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Cuts in social care funding create a vicious circle in that inadequate provision means that vulnerable people, especially the frail elderly, are forced to go to A&E and be admitted into hospital, putting pressure on these acute hospitals. As a consequence, more money is spent on keeping the NHS working, but with constrained public spending, this money comes from cuts elsewhere, including social care, which further adds to the pressure on the NHS.

Public health remains scant, advisory and perhaps most crucially, wholly without any effective means of delivery.¹⁹ This has been especially sadly exposed during the pandemic and *'there is concern across the health system—in the NHS, government and local authorities—that Public Health England has failed to rise to the challenge.'*²⁰

THE VICIOUS CIRCLE OF CUTS IN SOCIAL CARE SPENDING²¹

The Vicious Circle of a Stressed Health and Social Care System.



Source: Ian Smith, 2015

The response of clinicians, carers and the public to the Covid-19 pandemic of 2020, showed the remarkable dedication that people have to delivering care to their fellow citizens. 'Heroism' was a word rightly used to describe the selflessness of doctors, nurses and carers. But the way the system supported these clinicians did not emerge equally lauded.

The coronavirus crisis highlighted the underinvestment in the system that resulted in distressing shortages of testing kits, personal protective equipment, ventilators, oxygen, and intensive care (ICU) beds. The UK has 6.6 ICU beds per 100,000 and Germany has 29.2,²² and Germany's decentralised system, which is much more integrated regionally, was able to respond to the crisis far more quickly and more effectively than the UK. It became apparent, also, that Germany was better prepared for the crisis than the UK.

The exact timing of a pandemic was, of course, unknowable, but the fact that it would happen at some stage was very clear to politicians, senior managers and scientists. Indeed, the NHS conducted an exercise, Exercise Cygnus, in October 2016 simulating just such a crisis. It highlighted all of the shortages and constraints to coordinated action that played out in early 2020.

The report was not released publicly because it was felt that *'it would terrify people.'*²³ It is still not available from the government or from Corporate NHS. As recently as 2019, *'ministers were warned... the UK must have a robust plan to deal with a pandemic virus and its potentially catastrophic social and economic consequences in a confidential cabinet office briefing leaked to the Guardian.'*²⁴

My brother was chair of the largest care home operator in 2016 (with 20,000 residents and 30,000 care workers). He was concerned about the deteriorating state of social care, and lobbied hard to meet the Secretary of State for Health.

When the meeting finally happened, the Health Secretary listened patiently, and the meeting ended without him ever mentioning Exercise Cygnus and the need for care homes to prepare themselves for the likelihood of a pandemic sometime in the coming years.

The Covid-19 crisis put significant extra pressure on the NHS, but the system was already at breaking point running into the crisis. The blind spot that the NHS and government has for social care resulted in Covid-19-infected patients being moved without tests to care homes in March 2020,²⁵ where they infected others, and many died as a result.

Even the much-lauded mobilisation, mostly organised by the military, of resources and effort to build the Nightingale Hospitals has a sting in the tail – the money would have been much more wisely spent before the well-anticipated crisis struck.^{26,27} Not only have Covid deaths been higher than many other comparable countries, but the government's lack of preparedness has increased the number of non-Covid-19 deaths:

'...the taxpayer-funded health service had entered the pandemic in a deeply fragile condition, after years of cuts that prioritised efficiency over resilience.... more than four out of five English hospitals had 'dangerously low' spare capacity on the eve of the crisis....

'The service struggled to cope when the pandemic struck. The NHS 'had to withdraw services from huge cohorts of people', cancelling 2m non-urgent operations; meanwhile urgent cancer referrals from GPs fell by 75 per cent. The think-tank said these figures 'are indicative of why the UK has experienced significant numbers of excess deaths not directly caused by Covid-19, as the outbreak took its toll on health and adult social care'.²⁸

This book-series is not an analysis of the NHS response to the Covid-19 pandemic. It was largely written before that event. The NHS was creaking at the seams, and the pressure on hard-working and skilled clinicians was intense, even before the pandemic struck. Nothing in this book has been invalidated by the coronavirus crisis – rather a number of the key points, such as the underinvestment in health and social care, and the lack of integration between the two, have been validated.

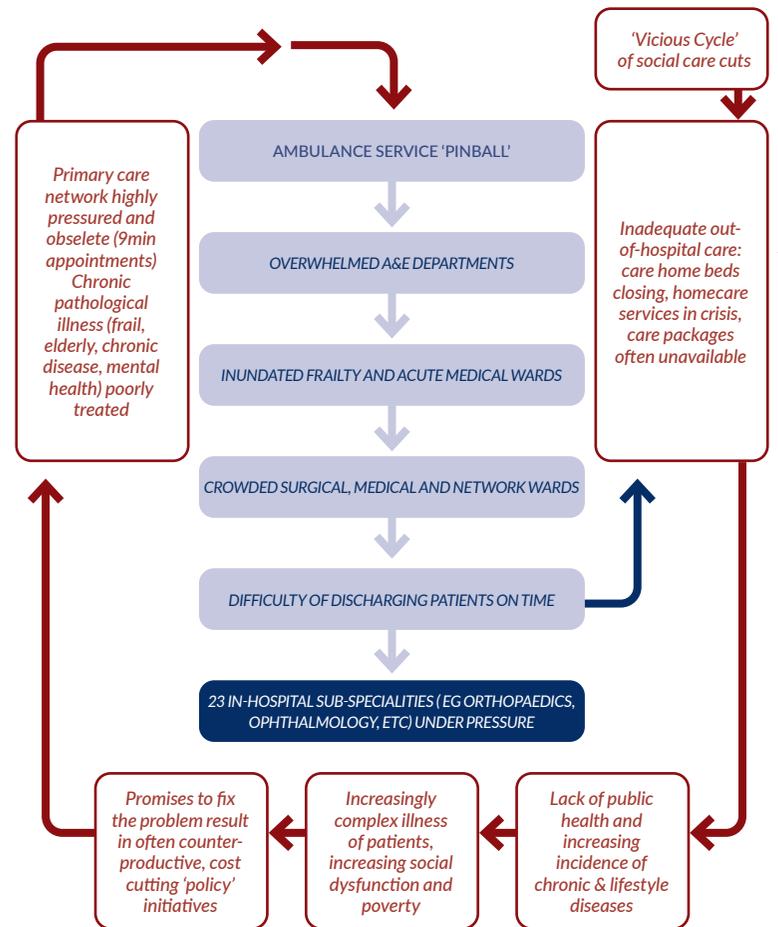
There has been one bright spot in the sorry tale of 2020 and 2021 which is the UK's successful vaccination programme. This success came about due to three factors: the UK's strength in life sciences and its successful integration with the NHS: an unusually agile 'search and develop' programme led by Kate Bingham; and a well-funded NHS roll out as the government saw this as an opportunity to recover from their earlier failings.

The success of the vaccination programme, however, must not lure us into a false sense of security that we can just return comfortably to the situation before the pandemic struck. Now is the time to take reform seriously. The government has indeed grasped the moment and announced reform in a White Paper in March 2021. But it doesn't go anywhere close to the type of radical reform that is required and which is outlined in this book-series.

There is no part of the health and care system that is not under stress, as the graphic below illustrates. The poverty of out-of-hospital care, the lack of effective public health policies to counter rising levels of lifestyle and chronic diseases, and often counter-productive top-down reorganisations puts pressure on GP practices, ambulance services and A&E departments. These pressures then reverberate through busy hospitals, placing heavy demands on stretched managers and clinicians and, to complete the 'systemic pressure', safe discharge into the community is difficult.

INCREASING PRESSURE THROUGHOUT THE HEALTH AND SOCIAL CARE SYSTEMS

Each of these problems and pinch-points will be analysed in this book-series, and solutions to each of them will be outlined. This analysis starts with a description of the changed epidemiology of disease since the system was set up in 1948.



10 macro-trends
shaping the
country's health.

SECTION 2

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It is difficult to imagine the UK in 1948 – it was a very different world. There have been ten 'macro trends' that have changed the nature of healthcare need in the country.

MACRO TREND 1: ADVANCES IN BIOMEDICAL SCIENCE

Advances in biomedical science over the past 70 years – especially over the last two decades – have been breathtaking. The United Kingdom is a leader in this field, hosting three of the top 10 universities in the world – Oxford, Cambridge, and Imperial College, and a further two – University College London and King's College London – in the top 40.²⁹

These advances are leading to a higher success rate in treating disease, most recently in developing a vaccination for Covid. There have been three notable advances in the last few decades.

First, surgical techniques developed rapidly in the second half of the 20th century, particularly the most difficult ones that are conducted on the brain and the heart.³⁰ To take an example from neurosurgery, the most important change in the past few years has been the introduction of frameless stereotaxy. This equipment helps surgeons navigate safely through high risk areas of the skull and brain by allowing them to know exactly where they are at any one time. This has given the neurosurgeon confidence in undertaking difficult tasks such as complex surgical approaches through the base of the skull and the removal of tiny lesions in the middle of the brain.³¹

Secondly, drug therapy has made startling advances and is even set to accelerate as 'small molecule' pharmaceuticals are being complemented by biotechnology which is expected to comprise 50 per cent of the pharmaceutical market in the coming years.³²

Finally, genetic science and engineering, since its inception in the early 1950s, is accelerating exponentially. There were two key breakthroughs. These were: the 1953 discovery of the structure of DNA by Watson and Crick, and the 1973 discovery by Cohen and Boyer of a recombinant DNA technique to transplant genes from one living organism to another.³³

With the discovery of recombinant DNA (DNA formed by laboratory methods bringing together genetic material from multiple sources) came the idea that genetic engineering would have major human and societal consequences. It is revolutionising medical practice, and has underpinned the impressive scientific search for a Covid-19 vaccine.

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This scientific revolution has spawned a wide spectrum of approaches to finding a vaccine, including live attenuated and inactivated viruses, protein subunits and peptides (chemicals formed of amino acids), viral vector-based delivery, DNA plasmids (molecules within cells), and synthetic mRNA.³⁴

The UK has punched above its weight in biology ever since Charles Darwin published *On the Origin of Species* in 1859.³⁵ Until now, the poor performance of the NHS has not had much of an impact on the UK's bio-medical excellence.

However, as genetic medicine increasingly draws its energy from real-time clinical practice, and, as it increases its relative position compared to the discovery of 'small molecules' in the lab, so the workings of the NHS and the continuation of the UK's lead in bio-medical science become increasingly intertwined. The importance of NHS reform and of a new commitment to UK science, is discussed in Book 11.

MACRO TREND 2: AN AGEING POPULATION AND THE NEED FOR MORE CARE FOR A GROWING OLDER POPULATION

Better drugs, better medical equipment and better clinical knowledge and diagnosis, together with the improvements in public health introduced in the 19th century, mean that people are living much longer than they used to. The care for many ailments has also been greatly improved by better nursing care, newer antibiotics, transfusions of platelets to prevent bleeding and the insertion of monitoring tubes in major veins.

The number of people aged 60 or over is expected to pass the 20 million mark by 2030, the proportion of people aged 65 or over will rise from 17.7 per cent currently to 23.5 per cent in 2034.³⁶

The numbers of disabled older people in households receiving unpaid care are projected to increase by 116 per cent, from 2.1 million in 2015 to 3.5 million in 2040 and 4.5 million in 2070. The numbers of disabled older people receiving care from a spouse or partner are projected to increase faster than the numbers receiving care from an adult child. Yet care by children will still need to increase by over 60 per cent over the next 25 years and 107 per cent over the next 55 years, if the proportion of disabled older people (by age, gender and marital status) receiving care from their children is to remain the same as it is today.

Whether the supply of care by adult children of the elderly will actually rise in line with need is very uncertain as health and economic pressures on them increase.^{37,38} The number of older users of local authority funded home care services or direct payments is projected to rise from 249,000 in 2015 to 466,000 in 2040 (an increase of 87 per cent) and 640,000 in 2070 (an increase of 157 per cent), to keep pace with demographic pressure.³⁹

The ageing population is a major factor in increasing healthcare costs, although the biggest impact is not so much in caring for the elderly, but the fact that the post-war population bulge has begun to flow through to death, and it is the period leading up to death that is the major driver of healthcare costs.⁴⁰

The ageing population is the most stark and important difference between now and 1948, and it is the most prominent reason why the UK's health and care system needs to embrace change.

MACRO TREND 3: A RISE IN CHRONIC CONDITIONS

One of the greatest challenges facing health systems globally in this century is the increasing burden of chronic diseases.⁴¹ This has been driven by greater longevity, 'modernisation' of (more unhealthy) lifestyles such as overeating, with increasing exposure to many chronic disease risk factors, and the growing ability to intervene to keep alive people who previously would have died.⁴²

A high proportion of the people who live into extreme old age can expect to experience some level of ill-health during their final years. Over the course of their retirement, men aged 65 today have a seven in 10 chance of needing some care before they die; women aged 65 have nearly a nine in ten chance.⁴³

Life expectancy has been extended dramatically since the end of the Second World War, but it is often a tough physical and mental burden for the people growing old:

'The world's population is living longer, but it is also spending more of those years in poor health. Since 1990, life expectancy has risen globally from 65.3 years to 71.5, an increase of 6.2 years. However, healthy life expectancy has risen more slowly.'

MACRO TREND 4: A RISE IN CO-MORBIDITIES

Co-morbidity is the presence of one or more disorders (or diseases) in addition to a primary disease or disorder. When two disorders or illnesses occur in the same person, simultaneously or sequentially, they are described as co-morbid.

Co-morbidity also implies interactions between the illnesses that affect the course and prognosis of both – these combinations interact with the unique biology of each individual to produce different symptoms and drive different treatment needs. This is one of the factors driving the need for integrated and personalised care around the particular needs of each individual.

There are growing numbers of people with multiple health problems. These are most common among older people, with an estimated two-thirds of those who have reached pensionable age having at least two chronic conditions.⁴⁵ Research shows, for instance, that Alzheimer's Disease may increase the frequency of co-morbid disorders because of the way the illness develops.⁴⁶

As the Department of Health & Social Care noted in its *Prevention is Better Than Cure* paper, around 20 per cent of our lives are spent in poor health, and with ageing comes chronic conditions. The proportion of those aged 65 and over with four or more diseases is set to double by 2035.

*'Much of the increase in four or more diseases, which we term complex multi-morbidity, is a result of the growth in the population aged 85 years and over. More worryingly...future adults, aged 65 to 74 years, are more likely to have two or three diseases than in the past. This is due to their higher prevalence of obesity and physical inactivity which are risk factors for multiple diseases.'*⁴⁷

Chronic disease and co-morbidities feed off each other, causing, for instance, failing eyesight due to diabetes, or hypertension associated with dementia – 92 per cent of people with dementia have at least one other serious health condition.⁴⁸

MACRO TREND 5: INCREASE IN BEHAVIOURAL, LIFESTYLE AND ENVIRONMENT-RELATED CONDITIONS

The public health initiatives from the late 19th century into the early 20th century have had a profound impact on the health of the population. The most important of these were: improving water quality, reducing pollution and discovering vaccines that either greatly reduced or eliminated infectious diseases.

Yet the rise of conditions related to behaviour, lifestyle and environmental factors has re-introduced the need for public health in order to encourage people to take more responsibility for their own wellbeing: in short, to stop drinking too much alcohol, smoking cigarettes, eating too much poor food and, in some cases, taking too many drugs, both illegal and prescribed. These behaviours all have serious impacts on health.

Many of the infectious diseases that have proved most deadly in human history – smallpox typhus, yellow fever and cholera – have, since the 19th century been controlled or eliminated through the discovery of vaccines.

Even so, other infectious diseases, such as influenza, never went away and have defied cures. This book-series is being written in the middle of the coronavirus pandemic which is proving deadly across the world. The discovery of a vaccine for Covid-19 is a very significant breakthrough but various environmental factors, to be discussed shortly, suggest that the coronavirus is not a one-off, and that variations will appear with increasing frequency.⁵⁰

OBESITY

Obesity, virtually non-existent in the early 20th century, is now a major and growing problem. The United Kingdom has one of the highest rates of obesity not just in Europe but in the developed world. Excess weight is a leading cause of type 2 diabetes, heart disease and cancer.

'Overweight and obesity represent probably the most widespread threats to health and wellbeing in this country. A total of 23 per cent of adults are obese (with a body mass index – BMI – of over 30); 61.3 per cent are either overweight or obese (with a BMI of over 25). For children, 23.1 per cent of 4 to 5-year-olds are overweight or obese, as are 33.3 per cent of 10 to 11-year-olds.'^{52,53}

Rising levels of obesity are leading to alarming increases in fatty liver disease. Fatty liver disease is a condition in which fats build up in the cells of the liver. If left untreated this can lead to fibrosis (scarring of the liver) and, in severe cases, eventually cirrhosis of the liver, which is irreversible. One in five young people in the UK have fatty liver disease, and one in 40 have already developed liver scarring.⁵⁴

The risks associated with obesity have been highlighted in the higher death rates that obese people have suffered in the coronavirus pandemic.⁵⁵

ALCOHOL

Alcohol has been a key part of British life for as long as history has been recorded. Its consumption has risen and fallen depending on the social, economic and political circumstances of the age. After distillation was deregulated in 1690, gin consumption soared, triggering widespread political concern.

Gin was effectively prohibited in 1736 – though this just encouraged a black market and disregard for the law. In 1743, more moderately restrictive legislation, combined with a decline in grain harvests, saw gin consumption trail off. However, it was in support of a further push for legislation in 1751 that Hogarth produced 'Gin Lane' and 'Beer Street'. As a result, alcohol consumption declined before rising with generally rising standards of living in the late Victorian era.

The late Victorian peak was followed by a decline in the early 20th century, which steepened with the outbreak of World War I. Various explanations have been offered for this: the 1910 Budget increased taxes on brewers; the creation of a Central Control Board in 1915 led to reduced opening hours, a ban on the buying of rounds and nationalisation of the trade in some areas; and – obviously – millions of young men were sent to war, nearly a million of whom never returned.

Strikingly, however, this decline was sustained for decades despite attempts by brewers to claw back customers through retail innovations and marketing campaigns. Indeed, despite a small upswing in the early 1920s, drinking in the UK remained low from the 1910s right through to the 1960s.⁵⁶

Consumption rose again to 2004, but has fallen 18 per cent since that time. However, this masks an increase in the heaviest drinkers, which explains the increase in deaths as a result of alcohol to one of its highest levels since recording began, a rise of 6 per cent since 2004.⁵⁷ In the poorer north-west of England, 33 per cent of the population 'binged' on their heaviest drinking day, compared to only 19 per cent in the more affluent south-east.⁵⁸

The associated diseases, particularly of the liver, are an increasing burden on society. Probably the most disturbing trend is the increase in the incidence of liver disease among young people.

The United Kingdom has one of the highest rates of underage drinking in the industrialised world. In 2006, there was an increase of more than 40 per cent in young people aged between 25 and 29 years dying of advanced liver disease than in the previous year.⁵⁹ In England alone, there were 6,541 deaths directly related to alcohol. This was a rise of 19 per cent since 2001. Of these deaths, the majority (4,249) died from advanced liver disease.⁶⁰

The cost to the health and care systems is large.

*'A quarter of people arriving at A&E do so due to alcohol-related injuries or disease.'*⁶¹

The combination of obesity and alcohol is particularly deadly.

*'Women can expect to die earlier in Britain than in almost any other country in western Europe....The study has found death rates among British women to be higher than the European average from the age of 30 to 74. British alcohol consumption has not had the big reduction of some other countries, while 63 per cent of UK adults are overweight, compared with a European average of 57 per cent.'*⁶²



BEER STREET AND GIN LANE BY HOGARTH, 1751

DRUGS (ILLEGAL AND PRESCRIPTION)

Class A drug use was on a downward trend between 1996 and 2011/12, from 9.2 per cent to 6.2 per cent of the population. Increases year-on-year since then have resulted in a significant rise, with around 8.7 per cent of young adults taking a class A drug in the last year – or 550,000 people. The percentage of 20- to 24-year-olds was highest, at 10.4 per cent.

Drug deaths are at their highest historic levels – with 2,917 people dying due to illegal drug use in 2018. These were mostly due to opiates such as heroin, but cocaine deaths have doubled over the last three years. The production of both opium and cocaine are at their highest levels ever, according to the UN.⁶³

The discovery of penicillin, the first antibiotic, has had a profound impact on improving healthcare across the world. By 1927, Alexander Fleming had begun investigating the properties of staphylococci. He was already well known from his earlier work, and had developed a reputation as a brilliant researcher, but his laboratory was often untidy.

On September 3 1928, Fleming returned to his laboratory having spent August on holiday with his family. Before leaving, he had stacked all his cultures of staphylococci on a bench in a corner of his laboratory. On returning, Fleming noticed that one culture was contaminated with a fungus, and that the colonies of staphylococci immediately surrounding the fungus had been destroyed, whereas other staphylococci colonies farther away were normal, famously remarking: ‘That’s funny.’⁶⁴

Fleming showed the contaminated culture to his former assistant Merlin Price, who reminded him: ‘That’s how you discovered lysozyme.’⁶⁵ Fleming grew the mould in a pure culture and found that it produced a substance that killed a number of disease-causing bacteria. He identified the mould as being from the genus *Penicillium*, and, after some months of calling it ‘mould juice’, named the substance it released ‘penicillin’ on March 7 1929.⁶⁶ The laboratory in which Fleming discovered and tested penicillin is preserved as the Alexander Fleming Laboratory Museum in St Mary’s Hospital, Paddington, London.

He investigated its positive anti-bacterial effect on many organisms, and noticed that it affected bacteria such as staphylococci and many other Gram-positive⁶⁷ pathogens that cause scarlet fever, pneumonia, meningitis and diphtheria, but not typhoid fever or paratyphoid fever, which are caused by Gram-negative bacteria, for which he was seeking a cure at the time.

It also affected *Neisseria gonorrhoeae*, which causes gonorrhoea, although this bacterium is Gram-negative.

Fleming’s accidental discovery and isolation of penicillin in September 1928 marks the start of modern antibiotics. It has, since then, been a wonder drug, saving many lives. During the same period many other drugs have been developed, such as opioids. Opioids are a broad group of pain-relieving drugs that work by interacting with opioid receptors in cells. Opioids can be made from the poppy plant – for example, morphine (Kadian, MS Contin, and others) – or synthesised in a laboratory – for example, fentanyl (Actiq, Duragesic, and others).⁶⁸

But there is now compelling evidence that you can have too much of a good thing.

Overuse of prescription drugs and antibiotics in the United Kingdom is becoming a major problem. 10.2 per cent (3,735) of those in drug treatment services reported their primary problem was with ‘prescription only’ medicine and ‘over the counter’ drugs referred to as ‘POM’ (mostly Benzodiazepines, ‘Z’ drugs, opiates prescribed as painkillers) and OTC, mostly opiates (painkillers); and antihistamines.⁶⁹

A further 14 per cent (28,775) whose primary dependency was illegal drugs reported additional problems with POM/OTC (referred to as ‘POM/OTC+’). This means that overall 16 per cent (32,510) of people in drug treatment services reported problems with their use of POM/OTC medicine out of a treatment population of 206,889.⁷⁰

Opioids represent the most prevalent group of drugs mentioned in Drug Related Deaths (DRDs) in 2018. In England and Wales, 2,644 deaths or 60.7 per cent of all DRDs mentioned opioids.⁷¹

Separately, there is an alarming rise in drug-resistant bacteria, the effect of which will be to increase the number of people living worse lives with medical conditions that were previously more curable. NHS England has warned that:

‘...inappropriate use of antibiotics may increasingly cause patients to become colonised or infected with resistant bacteria. As resistance in bacteria grows, it will become more difficult to treat infection.’⁷²

Indeed, there is also growing evidence that antibiotics can have serious, health-damaging side-effects. Obviously, they also have great benefits – but when they are not required, that is for viral infections (like colds and flu), then there are serious side-effects.

*'A study just released shows a correlation between antibiotic use in childhood and the later development of allergies, but there are also concerns that antibiotics may increase the risk of many other health problems, including autoimmune diseases and even conditions such as autism. Among them is obesity, which statistics suggest rises with antibiotic use, especially in early childhood.'*⁷³

Prescription drugs are also addictive in the non-biological sense. Many are taken needlessly, just for the comfort of taking medication. This is very expensive and prescription drug consumption is costing the British taxpayer dearly:

*'More than a billion prescriptions were dispensed in England last year – an average of about 20 per person and a 50 per cent increase on levels ten years ago. The rise is being fuelled by increased use of antidepressants, painkillers, statins and diabetes drugs.... Doctors are increasingly concerned about the high levels of patients living with multiple, long-term conditions, requiring a cocktail of drugs that may interact with each other, causing side effects.'*⁷⁴

From the small beginnings of Fleming's discovery, a vast pharmaceutical industry has grown. Most drugs are dispensed through GPs, and the amount and cost is increasing:

*'Estimated total NHS spending on medicines in England has grown from £13 billion in 2010/11 to £17.4 billion in 2016/17 – an average growth of around 5 per cent a year.'*⁷⁵

SMOKING

Smoking is the single greatest avoidable risk factor for cancer, although some claim that obesity has now moved above smoking. In the United Kingdom, it is the cause of more than 28 per cent of all deaths from cancer and has killed an estimated 6.5 million people over the past 50 years.⁷⁶ In 2018, 77,800 deaths were attributable to smoking in England. Exposure to second-hand smoke (passive smoking) can lead to a range of diseases, many of which are fatal, with children especially vulnerable to the effects of passive smoking.

In England, there were estimated to be 489,300 hospital admissions attributable to smoking in 2017 to 2018. Reducing the prevalence of cigarette smoking is therefore a main objective for government.

There have been important advances in reducing the number of people smoking, but the nearly 20 per cent of the population who smoke today has declined only slightly over the last decade.⁷⁷

As with recreational drug-taking, the incidence of cigarette smoking is more concentrated in the more disadvantaged, 'high risk/high cost' cohort of the United Kingdom population. That cohort is strongly class- and region-based. Poor areas in the north of England still have a high number of people smoking.

*'Poorer people are much more likely to smoke than the better-off. While one in five (20.4 per cent) of the most deprived people in England light up, just 14.3 per cent of the least deprived in society do so.'*⁷⁸

'Behavioural' illnesses are a heavy burden on the system. It has been estimated that 20 per cent of health costs in the United Kingdom are driven by these, the most burdensome of which is poor diet (followed by alcohol, smoking and physical inactivity).⁷⁹

TRENDS IN THE CAUSES OF MORTALITY IN THE UK

In the past, the majority of people everywhere died from infectious diseases and only a minority of people lived long-enough to succumb to degenerative diseases. Even in major famines, before the twentieth century, most deaths were from infectious diseases, triggered by the changes in behaviour induced by famine conditions.⁸⁰

In the 19th century, approaching half of all deaths were from infectious disease; non-communicable conditions, such as cancer and cardiovascular disease, were far less important than in rich countries today.

Between 1848 and 1872, tuberculosis was the leading cause of death in Britain, accounting for 15 per cent of all deaths. Bronchitis was responsible for 6.7 per cent of all deaths, scarlet fever and diphtheria for 5.7 per cent and diarrhoea and enteritis for 4.4 per cent. By contrast, heart disease and strokes accounted for only 5.8 per cent and cancer for a mere 1.7 per cent of recorded causes of death. Because so many people died at relatively young ages few people lived long enough to develop life-threatening heart disease or cancer.

Overall life expectancies began to rise from the middle of the 18th Century. One major factor was increasing control over smallpox, which was probably the leading cause of death in mid 18th century England, but only a minor cause of death by the mid 19th century.

This did not begin with Jenner's famous discovery of the world's first vaccine in 1796 and publication of the results in 1798, important as this was.



Long-before this, in 1718, a different technique had been introduced into England from the Ottoman Empire, by Lady Mary Wortley Montagu, whose husband had been the British ambassador in Constantinople.

The procedure, termed inoculation, involved administering a small dose of smallpox to the patient via an incision in the skin. In most cases this would lead to a very mild infection and confer immunity. Unfortunately, in a small minority of cases it proved fatal.

Given the prevalence of smallpox, inoculation was widely, but not universally adopted, after 1760. Inoculation and the use of quarantine seems to have been widespread in southern, but not northern England, with mass inoculation carried out by parish poor law authorities who also provided 'pest-houses' in which to isolate the sick.

In the more interventionist south of England, the fatality rate from smallpox was probably somewhere between 25 and 50 per cent of the level in the less interventionist north. Autonomous mutation of the virus that led to greater infectiousness in the late 18th century, together with poor law practices in the rural south, from where most London migrants originated, were probably jointly responsible for the major reduction in smallpox mortality in London amongst adult migrants.^{81,82} This contributed to the spectacular decline in the excess of deaths over births that occurred over the last three decades of the 18th century.

More widespread breast-feeding of infants conferred considerable protection from infection, based on the evidence of London Quakers.⁸³ Vaccination played a major role after 1798. The trend towards an excess of deaths over births appears to have been a general feature of urban centres in England and at least some cities elsewhere in the late eighteenth and early nineteenth centuries.

The most virulent diseases were those which were most easily dealt with. Alongside smallpox, the big killers that declined rapidly across the 18th and early 19th centuries were malaria and typhus.⁸⁴ It was the decline of these diseases, combined with the earlier disappearance of famine and plague, which drew the era of major epidemics to a close.

Malaria is not associated with England today, but areas of extensive, marshy wetland, such as the fens in Cambridge, Norfolk and Lincolnshire, suffered from endemic malaria. Drainage of wetlands, aimed at agricultural improvement, were probably largely responsible for the decline in malarial mortality in England.

The second half of the 19th century saw major reductions in waterborne diseases as a consequence of widespread improvements in water supply and sewerage, much of it delivered by newly-empowered local governments.

Most of the long-term improvements to life expectancy in Britain have occurred since 1900, with the most significant improvements occurring in the first half of the 20th century. Rising living standards and public health interventions played a major part in this. Mortality from tuberculosis and measles, for example, declined dramatically, and this probably reflected improving nutritional status and reduced residential crowding (in which fertility declines also played an important role).

The period after about 1950 is where medicine came to make large contributions. This saw the widespread use of antibiotics and mass vaccination campaigns against a whole series of infections. Smallpox became the first, and to date only, disease to be eradicated from the human population on a global basis. This was achieved as a result of a sustained and coordinated global eradication programme initiated by the World Health Organisation (WHO) in 1959.

Initially poorly funded, the programme was intensified in 1967 and the last non-laboratory case of smallpox was in 1977 with the disease officially considered eradicated in 1980.

During the 20th century the declining number of deaths from infectious diseases in the UK was accompanied by the sustained growth of deaths from cancers, heart disease and other chronic diseases.

In the third quarter of the nineteenth century cancer accounted for only 1.6 per cent of ascribed causes of death, and heart disease and strokes for 5.8 per cent. By the 21st century the corresponding figures were 27.6 and 34.7 per cent.⁸⁵

High modern rates of death from cancer and other chronic diseases are not simply the negative consequence of industrial lifestyles, though smoking and air pollution have played a role and continue to do so. Rather, the primary cause is the declining incidence of death from infectious diseases, allowing more and more people to live long enough to succumb to cancer, heart disease, and dementia.⁸⁶

THE RESURGENCE OF INFECTIOUS DISEASES

Disturbingly, however, infectious diseases are making a comeback, and the 2020 coronavirus is not a one-off. It is, instead, part of a rising trend of occurring pandemics.

Coronaviruses are thought to have been circulating in bats for centuries but have only recently become a leading source of zoonotic diseases, alongside other illnesses that originated in animals such as HIV, Ebola and Zika. The increase in the spill-over of pathogens from animals is a result of two trends: rapid globalisation and humanity's cavalier interaction with nature. This means disease outbreaks and pandemics are likely to emerge regularly unless the trends can be checked or reversed.

*'The coronavirus pandemic is completely unsurprising. We knew before this happened that two-thirds, if not three-quarters, of emerging infections were occurring because of the spill-over of pathogens from wild animals into people.'*⁸⁷

The primary reason for the crossover was the change in how people engaged with nature, such as rapid deforestation and the global wildlife trade.

*'There are no free lunches in nature. We swim in a common germ pool with other animals. If we stretch the fabric of life too far, things pop out of that germ pool and they land on us.'*⁸⁸

Land use change, including deforestation, was the single biggest driver for emerging diseases. Construction of logging roads to extract timber created access to deeply forested areas previously largely untouched by humans, bringing them into contact with disease-carrying wildlife. Displacement of animals that lived in those forests also forced them to find new habitats, increasing the chance of them spreading pathogens to other species, including humans.

There have been zoonotic diseases in the past, but they have been rare with large periods of time between the outbreaks. Now, the regularity is increasing. And it will continue to increase until the growing trade in animals is reduced.

Initially, Chinese health officials thought Covid-19 had jumped from an animal to a human at a Wuhan food market where wildlife was sold. More recent evidence suggests the virus originated elsewhere, but the number of people, who fell sick after shopping in the market, indicates it played a crucial role in spreading the illness.

It is known from past experience with coronaviruses, including Sars, that these viruses are able to spread within market systems. The Wuhan market looks to have served, perhaps, as an amplification centre, if not the exact beginning of the outbreak. While deforestation and the wildlife trade are blamed for diseases spilling from animals to humans, globalisation can turn outbreaks into pandemics.

*'These are the matches that light the pandemic fires, but the fuel on the fire is the globalisation of humanity and the increasing population density in cities.'*⁸⁹

Fifty years ago, it would have been much harder for Covid-19 to spread from Wuhan to the rest of the world. The city's residents had neither the means nor option to travel; its airport was built only in 1995 and did not start international flights until 2000.

Scientists think Ebola crossed into humans long before the first recorded outbreak in the Democratic Republic of Congo in 1976. The chief difference in the 2013-16 outbreak, which spread across west Africa, was that the first infection was thought to have been in a village in Guinea close to the borders of Sierra Leone and Liberia. There was enough connectivity, the roads were good enough, that cases of Ebola – for the first time in history – made their way to capital cities where suddenly there were millions of people available to be infected.⁹⁰

Infectious diseases made only a brief exit in the second half of the 20th century, and they are now back, possibly for ever.

MACRO TREND 6: THE RISE OF 'NEW' CHRONIC DISEASES – DEMENTIA AND DIABETES

Not only is the ageing population increasing the need for more care, but the ageing process is creating, in effect, 'new' categories of illness, especially dementia, and rapid increases in some conventional diseases, especially diabetes.

Whilst these diseases have been around for ever, and are not 'new' in that sense, their prevalence is rising rapidly as a result of the macro-trends described here, particularly the ageing population and the rise of 'lifestyle' diseases.

DEMENTIA

There are now more than 850,000 people living with dementia in the United Kingdom. The total number of people with dementia in the country is forecast to increase to nearly 940,000 by 2021 and more than 1.7 million by 2051 – an increase of 18 per cent over the next six years and 112 per cent over the next 36 years.⁹²

Dementia is a result of damage in the brain. The most common causes of dementia are neurodegenerative diseases, and include Alzheimer's disease, frontotemporal dementia, and dementia with Lewy bodies. The cause (aetiology) of the disease is still poorly known and a cure is probably many years away.

The physiology is that the brain becomes damaged in ways that are far beyond what would occur in normal ageing. In particular, the damage appears to be caused by a build-up of abnormal proteins, amyloid clumps, in the brain. Whether these clumps are cause or effect is still not known for sure.

The pathology of dementia and the role of social care (especially care homes) in providing more humane care of people living with dementia is considered in more detail in Book 6.

DIABETES

One in ten over 40s now has type 2 diabetes, and the number of people living with diabetes in all its forms in the UK has reached 4.7 million. By 2030 the number of people affected by the condition is expected to reach 5.5 million.⁹³

The increase in obesity rates is the main driver behind so many more people living with type 2 diabetes. While not every case is caused by excessive weight, it is the single greatest risk factor for developing the condition. Age, family history, and ethnicity can also contribute to someone's risk, with people of African-Caribbean, Black African, or South Asian descent two to four times more likely to develop type 2 diabetes than white people.

Diabetes is expensive. It costs the NHS £10 billion each year. But this is mainly because its complications, things like amputation, blindness, kidney failure and stroke, cost a lot of money. And the cost pressure that diabetes puts on the NHS is projected to get worse.⁹⁴

The United Kingdom has a poor record on caring for people with diabetes.

*'Dozens of children die each year and rates are 'high and rising' compared with other EU countries...last month the National Paediatric Diabetes Audit reported 'worryingly high' numbers of teenagers showing early signs of damage caused by the disease.'*⁹⁵

Diabetes complications are divided into microvascular (due to damage to small blood vessels) and macrovascular (due to damage to larger blood vessels). Microvascular complications include damage to eyes (retinopathy) leading to blindness, to kidneys (nephropathy) leading to renal failure and to nerves (neuropathy) leading to impotence and diabetic foot disorders (which include severe infections leading to amputation).

Macrovascular complications include cardio-vascular diseases such as heart attacks, strokes and insufficient blood flow to legs.⁹⁶

MACRO TREND 7: BETTER TREATMENT DRIVES AN INCREASE IN DEMAND, NOT JUST FOR THE ELDERLY BUT ALSO FOR WORKING-AGE ADULTS

As well as seeing more older people live longer, the same medical advances have also meant that younger people with disabilities and chronic health conditions are now living longer. Following improvements to medical care, particularly for heart problems, life expectancy among people with Down's syndrome, for instance, has increased from 12 years in 1912 to 60 years today.⁹⁷

According to the Office for National Statistics (ONS) the number of people aged 18 to 64 will rise by 3 per cent between 2015 and 2040, from 33.4 million in 2015 to 34.6 million in 2040.⁹⁸ The numbers of social care services users with learning disability aged 18 to 64 or with physical disability aged 18 to 30 are projected to change in line with the scenario which assumes that, for younger adults with learning disability or physical disability, all of those with critical need or substantial need and 50 per cent of those with moderate need use social care services.

The numbers of service recipients with physical disabilities aged 31 to 64 and the numbers with mental health difficulties aged 18 to 64 are projected to change in line with changes in the overall population.

The numbers of learning-disabled users of local authority home care services or direct payments are projected to rise by 72.5 per cent between 2015 and 2040 and 115.3 per cent between 2015 and 2070, from 94,000 in 2015 to 162,000 in 2040 and 203,000 in 2070.

The numbers of physically disabled users of local authority home care services or direct payment will rise by 29.4 per cent between 2015 and 2040 and 35 per cent between 2015 and 2070, from 68,000 in 2015 to 88,000 in 2040 and 92,000 in 2070. The numbers of users of home care services and direct payment with mental health difficulties will rise by 4.7 per cent between 2015 and 2040 and 10.7 per cent between 2015 and 2070, from 38,000 in 2015 to 39,000 in 2040 and 42,000 in 2070.

A further driver of increased demand for healthcare services is genetic medicine. With every human being having a different genetic footprint and with the identification of the biomarkers that predispose an individual to disease and which determine the most appropriate treatment regime, so the ability of the system to anticipate the disease profiles of every individual and to give every individual a customised treatment plan increases. The costs could be astronomical, and ultimately unaffordable. That will not, however, stop the demand for it.

Genetic medicine has the potential, more encouragingly, to reduce some costs as it will, if managed well, cut out the waste of the many treatments, often involving very expensive drugs, that are ineffective today – and can, with genetic medicine, be predicted to be ineffective. However, the forces driving costs in the other direction will become more and more powerful.⁹⁹

MACRO TREND 8: CHANGING ATTITUDES (AND POLICY) TOWARDS MENTAL HEALTH

Mental health is a major but often untreated and ignored health issue. Mental illness still carries a stigma. Yet it is the largest single source of burden of disease in the United Kingdom. No other health condition matches mental illness for its combined extent of prevalence, persistence and breadth of impact. Society has a more enlightened approach to mental health than it did a few decades ago but there is still a long way to go.

The case for early intervention in mental health is forceful given that most cases of long-term mental health problems begin in childhood.

'Half of all lifetime cases of diagnosable mental illness begin by age 14¹⁰⁰ and three-quarters of lifetime mental illness arise by mid-twenties....In a UNICEF survey in 2007 the UK ranked at the bottom on children's well-being compared with North America and 18 European countries,¹⁰¹ and ranked 24th out of 29 European countries in another survey in 2009.¹⁰²

Trends in mental health and reform of the UK's mental health services are considered in chapter 8.

MACRO TREND 9: MORE SOCIAL DYSFUNCTION

Whether or not levels of social dysfunction are increasing in the United Kingdom is a controversial and politically sensitive issue. But on balance the data suggests that it is increasing. The annual Crime Survey for England and Wales estimated that 37 per cent of adults experienced or witnessed anti-social behaviour (ASB) in their community in 2019 – its highest level for six years.¹⁰³

One indicator of social dysfunction is the rate of teenage pregnancy. The United Kingdom has one of the highest rates in the developed world, with a rate more than twice the average of the rest of Europe, and exceeded only by the United States.¹⁰⁴

The co-occurrence of social dysfunction, poverty and lifestyle diseases is placing an increasing burden on the health and care system. Drug-related gang violence, alcohol abuse and mental health problems are putting increasing pressure on inner city communities and on A&E departments.

Local authorities, the organs of government best placed to alleviate these problems, suffer from the over-centralised system of UK politics and power. Tackling these broader societal ills – and the inequalities and poverty that underpins them – is a key part of improving the health and wellbeing of the UK population.

It is a key theme in Book 3 which outlines how devolution of power from Westminster and Whitehall can improve the lives of the 20 per cent or so of the UK population whose lives are currently blighted.

MACRO TREND 10: RAISED EXPECTATIONS AND MORE DEMANDING CONSUMERS

Our consumer-led society brings heightened expectations and more demanding users of the NHS. This leads to a tension of escalating costs in a service that is free at the point of care.

*'People want more from the health service than their parents did. They are not content to be passive recipients of healthcare, prescribed and dispensed by healthcare providers at their convenience. Accustomed to ever-widening choice and sovereignty in decisions in other areas of life – banking, shopping, housing, education - they expect to be consulted, informed and involved by healthcare providers in any decisions that affect their health. They are better informed, more articulate and more likely to know about and demand new and expensive treatments.'*¹⁰⁵

The modern, younger patient acts increasingly like a consumer, and this more demanding consumer will, over time, replace the old, often unquestioning respect towards the NHS and clinicians. People will increasingly demand their 'rights,' putting new, and probably justified, pressures on the system.



The effect of these combined macro trends: from a narrow, acute-focused system to a broader, acute and chronic-care model.

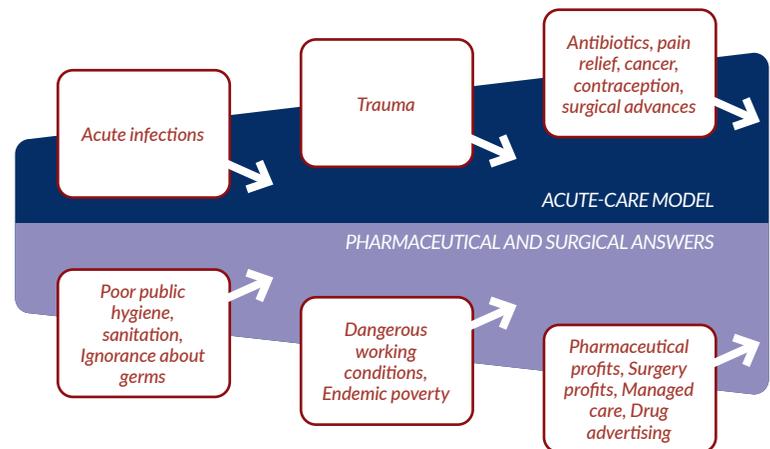
The trends described above have created a demand for a very different kind of health and social care system – one that offers a broad, yet personalised service. This is very different from the ‘acute care model’ created in 1948 which narrowed the focus, appropriately at the time, to GP surgeries and hospitals, and to which the NHS was perfectly designed.

The narrowing of medical focus in the middle of the twentieth century is illustrated below, driven by: the decline of infectious diseases due to public health advances in hygiene and vaccination; the decline of industrial accidents as heavy industry retreated and health and safety measures increased; a reduction in the levels of poverty and inequality; and pharmaceutical discoveries.

To take just one of these as an example, mining deaths in the UK exacted a heavy toll until the middle of the 20th century. Nearly 60,000 people died in mines in the period 1850-1900, and a further 85,000 in the period 1900-1950. This fell sharply to 16,000 in the period 1950-2000, and this fell again to just 14 in the first decade of the 21st century.¹⁰⁶

This narrowing focus of healthcare through to the middle of the 20th century, when the NHS was formed, is illustrated by the US-based Institute of Functional Medicine here.¹⁰⁷

20th century medicine forces narrowing the focus of 21st century



This is a very different context to the one prevailing in the 21st century. These days, health and care should be as much about maintaining and improving health and avoiding illness and disease as it is about treating it.¹⁰⁸

According to the US-based Institute of Functional Medicine, our health and care systems must expand to meet inter-related trends such as unhealthy lifestyles, social fragmentation of families and communities, environmental factors and an ageing population base. Integrated care systems must employ:

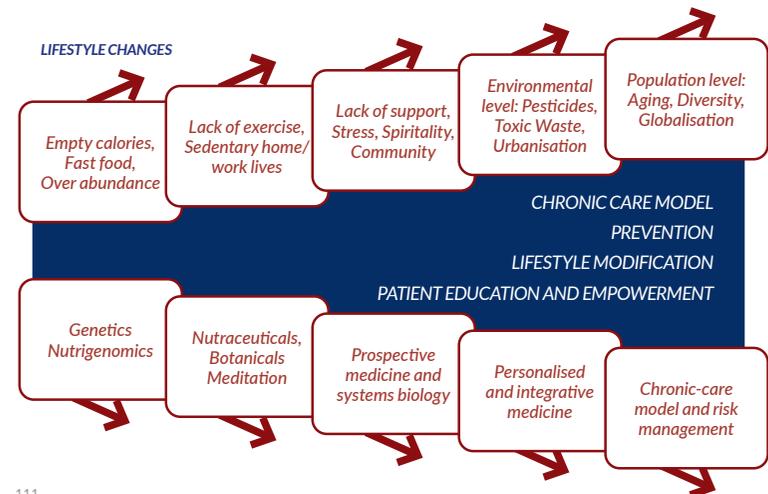
*'...broad-based pattern-recognition and communications skills... to prevent, treat, and reverse the declining function associated with these pervasive influences.'*¹⁰⁹

These forces are expanding the scope of health and social care, as the next diagram from the Institute of Functional Medicine, illustrates. This graphic neatly summarises many of the macro-trends discussed above:

- The rise and promotion of 'junk food' that is high in calories from sugar or fat, with little dietary fibre, protein, vitamins, minerals, or other important forms of nutritional value. Even high-protein foods, like meat prepared with saturated fat, is considered junk food. Our understanding of the effects of a poor diet is opening up new areas of treatment such as nutrigenomics which is the study of how different foods may interact with specific genes to increase the risk of common chronic diseases such as type 2 diabetes, obesity, heart disease, stroke and certain cancers.¹¹⁰
- Lack of exercise and the increasing stress of modern life are strongly linked to multiple ill-health consequences. Programmes to encourage exercise and spiritual cures, such as meditation and mindfulness, are becoming accepted treatments in ways that were unheard of forty or fifty years ago.
- Nutritional science has made progress in the last few years, along with the broader topic of bio-medical science. For instance, 'nutraceuticals' are substances that may be considered a food or part of a food which provides medical or health benefits, encompassing prevention and treatment of disease. Products as diverse as isolated nutrients, dietary supplements and diets to genetically engineered 'designer' foods, herbal products, and processed foods (cereals, soups, beverages) may be included under the umbrella of nutraceuticals.

- As our capacity to do harm to ourselves increases, together with our knowledge of how to mitigate that harm, then the need for more engagement of individuals in managing their own care also increases. Patient education is becoming more and more important.
- Whilst industrial accidents declined in the second half of the 20th century other environmental hazards, such as micro-plastics and pesticides, have increased. Human vulnerability due to climate change, population growth and ageing were noted earlier. On the positive side the advances in genetic science are opening up many more treatment options. The New Biology, Systems Biology and the New Medicine will be examined in more detail in book 11.

21st century medicine forces expanding the focus of 21st century



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The UK's health and care system is still based on the older, acute model as a result of the 'narrowing' trends extant in the middle of the 20th century, which were 'baked into' the health and care systems, which have largely remained unchanged. The UK population, however, is living at a time of 'expanding' need. This lack of alignment is resulting in tensions:

'The soaring number of people with long-term medical conditions such as diabetes and dementia is threatening to 'overwhelm' the NHS....The challenges posed by patients with chronic medical conditions are so great that they represent the 'healthcare equivalent to climate change' and must force the NHS to undertake a major rethink of how it cares for such patients....

Looking after the 15.4 million people in England with at least one long-term condition already takes up 70 percent of the NHS's £110bn budget – £77bn – as well as £10.9bn of the £15.5bn spent on social care in England....The costs are so huge that the NHS could become unsustainable unless it gives those with long-term conditions better care, with much of it provided by GPs performing enhanced roles rather than hospital doctors....

Illnesses and diseases such as arthritis, heart disease, breathing problems, obesity and mental health conditions such as depression....have risen dramatically in recent years, largely as a result of the ageing population and lifestyle factors such as smoking, drinking and overeating....'

'...The NHS in its current form is not well set up to look after patients who are medically complicated, especially if they have several long-term conditions, such as arthritis, heart failure and the early signs of dementia....

'People with multiple long-term conditions often fall through the gaps as their secondary [hospital] care is highly specialised and their GP care highly generalised, with little continuum between the two, meaning those with multiple long-term conditions can fall through the gaps when confronted with confusing and fragmented secondary care....The failure so far to reorganise services for such patients means too many are not getting proper care and can end up having largely avoidable spells in hospital, which adds to the pressure on A&E units and hospital beds and also wastes vital NHS resources....

'While a healthy patient costs the NHS about £288 a year, those with one long-term condition cost an estimated £783, those with two cost £1,521 and those with three cost £2,559 each. Their need for frequent treatment and monitoring means that the small minority with five such conditions cost £5,512 a year and those with six about £8,083 ...

*'The NHS is still set up to deal with 20th-century medical need and must evolve rapidly to better handle long-term conditions, the greatest challenge of this century....The NHS and social care have been slow to rise to the twin challenges of an ageing population and increased prevalence of long-term conditions like diabetes. There is now an urgent need to transform how GPs treat people with these conditions, and to support people themselves to take more control over their health.'*¹¹²

Health and social care needs have changed dramatically over the last 70 years, but the system that was set up in 1948 has not kept pace with that change.

There is a serious mismatch between the needs of the UK population and what the system is able to provide. In terms of chronic diseases, health and social care have become increasingly coterminous in terms of need but are still jarringly separate systems, and some aspects of the old hospital model have become obsolete as some of its purpose is replaced by the need for out-of-hospital care.

But at the other extreme of acute, specialist medicine, the advances in bio-medical science (both in terms of increasingly sophisticated surgical techniques and in terms of genetic science) mean that larger, scale-efficient clinical units are required.

The need to realign the UK's health and care system to the needs of the modern UK population is the topic of this book-series. There is no greater testament to its urgency than the disturbing trend of deteriorating health outcomes in the UK, both relative to other advanced nations and in some cases in absolute terms.

Health and social care outcomes in the UK are poor compared to other European countries.

Despite the dedicated and skilled work of clinicians, despite Britain's world-class position in bio-medical science, and despite services being free-at-the-point-of-care, the UK has some of the worst health and social care outcomes in the developed world.

A recent study revealed that:

'We decided to look at specific outcome measures for the 12 conditions which cause the most deaths in high-income countries, according to the World Health Organisation ¹¹³....the NHS is not delivering outcomes as good as those of its peers. Performance for cancer and cardiovascular diseases, the developed world's two highest causes of death, is consistently below average'. ¹¹⁴

The table below summarises how the NHS is doing, first on each of the 12 most lethal diseases, and then on the other three fields.... In most areas the health service is not delivering outcomes as good as those of its peers.' ¹¹⁵

	Relative Performance
Breast cancer	POOR
Colorectal cancer	POOR
Lung cancer	POOR
Pancreatic cancer	POOR
Diabetes	GOOD
Kidney disease*	GOOD
Chronic obstructive pulmonary disease	POOR
Lower respiratory tract infection*	POOR
Suicide*	GOOD
Dementia*	UNCLEAR
Stroke	POOR
Heart attack	POOR
Amenable mortality	POOR
Patient experience	GOOD
Birth	POOR

HEALTH OUTCOMES RELATIVE TO OTHER EUROPEAN COUNTRIES ¹¹⁶

The US think tank, the Commonwealth Fund, ranks the United Kingdom health care system as the best in the world. This is misleading. The NHS is ranked first on a large range of measures that are to do with the service being 'free at the point of care'. This is, indeed, a commendable feature of the system. However, in the Commonwealth Fund ranking, health outcomes are given one 'vote' compared to the eight that are related to affordability and accessibility.

Affordability in the United Kingdom is treated as 'free', but the UK taxpayer, of course, spends a lot of money on the NHS. Accessibility, too, is a biased category as it relates to the theoretical advantage of the NHS being 'free at the point of care', whereas, as we will discuss later, the system perversely advantages the middle class who can navigate the system better and, often, have privileged access through knowing clinicians who can give informal expert advice.

On the issue of health outcomes, the Commonwealth Fund records the United Kingdom as 10th out of 11 – but this fact is given only 11 per cent of the weighting in deciding the NHS' rank. The NHS is, arguably, the best system in the developed world in terms of access, but once there, the UK taxpayer experiences some of the worst outcomes in the developed world. ¹¹⁷

The Commonwealth Fund ranks access and affordability so highly because it is a pressure group that campaigns for reform of the US system, where accessibility and affordability (for the least well-off in society) is indeed dreadful. Although the United States has the best elite healthcare in the world, which is built on the leading position that the United States has in bio-medical research, it is an appallingly unfair and inefficient system, as the following extracts from the Commonwealth Fund report demonstrate.

'Not surprisingly—given the absence of universal coverage—people in the U.S. go without needed health care because of cost more often than people do in the other countries. Americans were the most likely to say they had access problems related to cost....On indicators of efficiency, the U.S. ranks last among the 11 countries....'

The U.S. has poor performance on measures of national health expenditures and administrative costs as well as on measures of administrative hassles, avoidable emergency room use, and duplicative medical testing...The U.S. ranks a clear last on measures of equity.

Americans with below-average incomes were much more likely than their counterparts in other countries to report not visiting a physician when sick; not getting a recommended test, treatment, or follow-up care; or not filling a prescription or skipping doses when needed because of costs. On each of these indicators, one-third or more lower-income adults in the U.S. said they went without needed care because of costs in the past year.' ¹¹⁸

Clearly we do not want to copy the US system – although Barack Obama's reforms (the Affordable Care Act), supported by the Commonwealth Fund, will improve their Commonwealth Fund ranking – but the skewed conclusion of the Commonwealth Fund on the UK's performance, ranking it first despite poor health outcomes, is undeserved. ¹¹⁹

The Commonwealth Fund does, however, signify potential for the United Kingdom if it reforms the system along the lines recommended in this book. The access that the NHS gives, with a key feature being free-at-the-point-of-care, means that testing for conditions like cervical cancer, or increased risk of heart attack, if combined with a reformed system, could lead to the United Kingdom leapfrogging the rest of the world in terms of health outcomes.

The United Kingdom also currently performs poorly on social measures. For instance, the country ranks 28th, the lowest Western European nation, on the Gender Inequality Index. That index concerns maternal mortality, adolescent fertility rate, seats in national parliament (percentage that are female), population with secondary education (male and female percentages), labour force participation rate (male and female percentages), contraceptive prevalence rate, at least one antenatal visit, births attended by skilled health professionals and total fertility rate. ¹²⁰

Health outcomes are the most important measures of a health system's performance. But there are other measures, many of which are not measured by the Commonwealth Fund, which demonstrate that the NHS is struggling.

The NHS is in deficit and its financial crisis is worsening by the day. The deficit in 2017/18 was £960 million ¹²¹ which was twice the amount planned for at the start of the financial year, and even these numbers were calculated after a number of 'one-offs' (mostly property sales) that will not be repeated.

The extra funding announced by the government in May 2019 and increased again in August 2019, even if they follow through on the commitments, is insufficient to meet growing demand, let alone fix the underlying insolvency of the system. ¹²²

The massive spending on Covid-related measures – the test, trace and isolate programme alone has consumed £12 billion in 2020 – will inevitably constrain the amount of money available. Efficiency, then, as outlined in this book becomes an even bigger priority.

The operational metrics of the health and care system were deteriorating even before Covid:

- ***‘One million patients a week cannot get appointments with GPs, amid the longest waiting times on record.’*** ¹²³
- As of March 2019, ***‘more than 4.2 million patients were on waiting lists for surgery, a 55 per cent rise in five years.’*** ¹²⁴ This has increased markedly as a result of the pandemic.
- ***‘Waits at A&E departments in England have hit their worst levels since records began, official NHS statistics have shown.’*** ¹²⁵

Again, even before the Covid pandemic, the devoted workforce of doctors, nurses and carers were suffering increasing levels of burn-out and stress:

‘NHS staff are quitting because they are stressed and burned out from heavy workloads, having too little time with patients and suffering bullying and harassment at work, an official report has said.’ ¹²⁶

Official figures from ‘NHS Corporate’ reveal that the NHS in England has nearly 100,000 jobs unfilled, a situation described by them as ‘dangerously understaffed.’ ¹²⁷

Stress, burn-out and the rate of clinicians leaving the service are all being intensified by the Covid pandemic.

Worsening mortality rates are being directly linked to the ‘vicious spiral’ of cuts in social care funding:

‘Research has demonstrated that cuts to the welfare payments of elderly people and disability benefits have had statistically significant effects on the rise in mortality in recent years.’ ¹²⁸

Shockingly, for the poorest people in the UK, child and infant mortality is deteriorating:

‘In many areas of the country, and for poorer groups, life expectancy was already falling before 2018. It is not just the elderly who are especially harmed. The infant mortality rates for the poorest families in the UK have risen significantly since 2011. In 1990, the UK ranked seventh best in Europe neonatal mortality rate. Only six countries had better outcomes. By 2015, it ranked 19th.’ ¹²⁹

In addressing the causes of the UK’s crisis, it is important to be clear about where the problem lies. The problem is **not** with the clinicians and carers, who are amongst the best trained and dedicated in the world. The problem is **not** with ‘theoretical’ access to the service in a system that is ‘free-at-the-point-of-care’. The problem is **not** with the UK’s bio-medical science: the UK has three of the top ten universities in the world (and they perform especially well in bio-medical science).

The problem is with the system in which scientists, clinicians and carers work, and the way in which it lets them down. It is a system that is stuck in 1948, a system that has been further undermined by the cuts in social care since 2010. The UK’s health and care system is no longer ‘fit for purpose’... It is dangerous.

Thoughtful and staged reform of the UK's health and care system is now required.

SECTION 5

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Change, however well managed, is always disorientating, disruptive and triggers many unintended consequences. It should never be embarked upon lightly. However, the misalignment between the way the UK's health and care system actually works, and the needs of the population that it serves has become so severe that the arguments for change now outweigh the counter-arguments for living with what we have.

The misalignment is creating so many tensions, and producing so much harm – and will inevitably worsen – that productive change must now be pursued.

Productive change should start with a thorough analysis of the factors, the root causes, that are driving poor health and social outcomes. There are eight such factors and they will be described and evaluated in the rest of this book-series.

The health and care system is complex and there is no silver bullet. Action is required on all eight fronts but, as will be described, action needs to be carefully planned, sensibly staged, and designed with 'learning loops' that trigger adjustments based on new information.

1. THREADBARE SOCIAL CARE

Social care (care homes, home care and community activity) is underfunded and does not provide adequate care to many of the most vulnerable in society. Book 2 explains what social care is, in what ways it is in 'crisis' and why it has been overlooked in the UK for so many years.

2. MAJOR CRACKS BETWEEN HEALTH AND SOCIAL CARE SERVICES

Further harm occurs because of the poor integration between health and social care as patients, especially the frail elderly and those living with mental health conditions, rebound around the system with little coordination. Book 3 discusses the practical steps in integrating the two systems and fixing the problem more broadly.

3. AN OVERLY CENTRALISED SYSTEM REQUIRING DEVOLUTION

The overly centralised NHS constrains the local integration of health and social care. Devolution of power and responsibility to regions is required to ensure that the two systems, health and social care, are effectively managed.

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This devolution requires democratic accountability which in turn requires that regionally elected mayors create a more visible link between local services and local outcomes. Book 3 also describes the increasing body of evidence, from researchers such as health inequality specialist Professor Sir Michael Marmot, that shows that the NHS, as an acute service, can only address 10-20 per cent of the drivers of ill health.

The other 80-90 per cent is dependent on life chances, lifestyles and the lived environment. Therefore, in order to really 'move the needle' on improving health outcomes, devolution needs to be more than just decentralising the NHS; it needs to also give local authorities the power to shape the local environment in areas such as employment, education and housing.

Local authorities have, over the past 10 years or so, been depleted in terms of resources and responsibilities. Book 3 extends the analysis of the broader, non-NHS, drivers of ill-health to discuss the policies required to create effective local authorities that can inject new energy into the many communities across the country, mostly outside of the south east of England, that are struggling to look after their citizens.

4. INSUFFICIENT MONEY

Not only is power and responsibility heavily centralised in Whitehall and Westminster, but so too is the funding regime, which is mostly drawn from central taxation and then allocated to services from the centre. The reliance on central taxation means that the service is underfunded compared to other advanced nations.

Book 4 advocates two sets of changes. The first is that the money used to pay for health and social care services should be raised by an hypothecated (dedicated) tax that ringfences the money available to spend on health and social care. This fund can be engineered so that richer people pay more (through making the tax more progressive than general income tax, for instance) and it can be supplemented by co-payments, charges (especially for abuse of the system) and 'sin' taxes on items such as alcohol and cigarettes.

The main objective in advocating an hypothecated tax is that it provides a better connection in citizens' and patients' mind between the taxes they pay and the services they receive. This connection is further strengthened by the second recommendation, that this tax is

fully allocated to newly devolved local authorities. Such devolution needs to be buttressed by statute that ensures each region receives the same per capita funding, adjusted for different levels of need in the population, across the country.

5. INSUFFICIENT AND UNDER-SUPPORTED MANAGEMENT

Management in much of the health and care system is not good and is poorly supported. Management is both too thin on the ground and insufficiently trained to manage complex health and care operations. Best practice exists in some places, but it is neither codified nor shared, nor widespread.

Drawing from the experience that my brother has told me about and my own in managing on the front-lines of health and social care, both private (BMI Healthcare, Four Seasons Health Care and The Huntercombe Group) and public (King's College Hospital NHS Trust, Imperial College NHS Trust, and East Kent Hospitals NHS Trust), Book 5 describes how management can be improved and better supported. It also highlights best practice in each of the five major health and care domains as follows:

An examination of the growing problem of **mental health provision**, and how the system can be reformed to give better care to a segment of the population which has been, and still is, chronically under-served.

Community-based care, involving mainly care homes and home care, which needs to be better regulated financially, but also has many pockets of good practice that can be developed to better care for some of the most vulnerable in our society. These issues are discussed in Book 6.

Primary care, involving mostly GPs, which requires two sets of innovations: the introduction of high-risk-care-management programmes that reconfigure services around patient pathways; and the consolidation of small GP practices into polyclinics that provide a broader and deeper range of services to patients. These innovations are exemplified in the case of Bromley in south east London in Book 7.

Probably the highest profile pressure-point in the health and care system today, or at least pre-Covid, is the **Accident & Emergency (A&E)** department.

Most A&E departments in the country can be better organised, and a key part of doing that is focussing on not just the A&E front-door, but also the efficiency with which patients move through the entire **Emergency pathway**. Book 8 uses lessons learnt at King's College Hospital to offer a solution to creating an efficient emergency pathway from the front- to the back-door of the hospital (and beyond).

In a hospital like King's there are around 25 specialities, such as orthopaedics, ophthalmology, nephrology (kidney medicine), and so on. Years of under-investment and poor management has meant that many of them are not well run. Book 8 describes the turnaround of the **trauma & orthopaedics (T&O)** speciality at King's which was helped by the support of the Getting It Right First Time (GIRFT) programme devised by Professor Tim Briggs.

6. JUMBLED JURISDICTIONS

Responsibility and accountability in health and social care is jumbled, and it's often difficult to find out who is actually in charge. Piecemeal reforms and top-down reorganisations over past years have blurred these responsibilities and accountabilities. Book 9 describes how a scale-efficient health and social care economy should be organised so that services can be well managed.

The recent move to establish Integrated Care Systems (ICS) covering a population of about 1-2 million people is a step in the right direction. However, it is vital that we get the following steps right if we are to ensure that some of the traditional errors of top-down reorganisations from Corporate NHS are avoided and that there is clear responsibility, authority and accountability in all parts of the system.

7. UNDER-MANAGEMENT OF BROADER, SCALE-EFFICIENT HEALTHCARE ECONOMIES

Efforts to manage efficiencies across healthcare economies covering 1-2 million people has been stymied in the past by the lack of clear responsibilities and accountabilities, and by the confusion wrought by top-down reorganisations. The ICSs are an excellent opportunity to finally discover some of these efficiencies. Book 9 outlines where these efficiencies lie: in consolidating clinical units to improve patient safety; in rationalising sites so that support services (such as pathology) are scale efficient and so that there is clear separation of site functions based on criteria such as hot (emergency) versus cold

(elective surgery), Covid (and infectious diseases generally) versus non-Covid, hospital-based surgery versus ambulatory (outpatient) surgery, and so on; and in effective commissioning so that the money supports these innovations and is allocated on a logical and transparent basis. The concept of patient-value, first formulated by the Harvard Business School Professor, Michael Porter, which needs to become the touchstone for decision-making and allocation of funds, is described in this book.

8. MUDDLED AND OVERLAPPING NATIONAL BODIES

The remits of national bodies are often muddled and overlapping. They need to be re-defined and strengthened across the spectrum. Book 9 recognises that the devolution of responsibilities to regions needs to be complemented by effective national platforms that promote consistency and best practice across the country. There are three major activities that need to have re-defined remits on this national scale. The changes that are required are significant enough that they each deserve a dedicated book.

Corporate NHS is currently confused as to whether it is a regulator or a corporate support for hard-pressed managers and clinicians on the ground. It needs to become resolutely the latter, and this transition is described in Book 9, including its role in creating: a medical MBA that teaches advanced management practice; a well-functioning public health capability; and a scientific venture fund that commercialises the many important scientific and medical practices that innovative NHS clinicians discover, but which currently wither on the vine of civil service conservatism.

Book 10 laments the course that the major quality regulator, the **Care Quality Commission (CQC)**, is taking in becoming a tickbox bureaucracy, and in criminalising unintended error. The CQC needs to change its remit so that it focuses on patient-value, and launches a virtuous circle of learning that produces ever improving patient safety. The UK is a world leader in bio-medical science. However, its leadership position is being undermined by the failings of the broader health and care system, and by inattention to the needs of science in the age of **'Personalised' and 'Precision' medicine**.

Book 11 describes the changing nature of bio-medical science (the Third Scientific Revolution) and draws out the implications for policy change that will ensure the UK remains a leader in the life sciences.

Constraints on the system & patients.

> SECTION 6

None of these eight reforms are easy, and the fact that some of them need to occur simultaneously makes the task even more difficult.

Managing change is difficult. The competitive private sector, which generally has better managers than the public sector, still finds management of change difficult. The UK's public sector in general, and the NHS in particular, are particularly poor at change management.

The reforms outlined in these books are large, and need to be carefully planned and implemented over a ten-year period. Of course, adjustments will be required as circumstances change, but the overall purpose and scope needs to be sustained, unsullied by the temptation for senior managers and politicians to grab headlines by announcing bold, 'new' initiatives that too often subvert productive change.

Book 12 outlines the principles of good change management. It draws on the lessons learnt from the challenges at King's College Hospital which reported an annual loss of £180 million in 2017, and its subsequent turnaround in 2018/19.

This turnaround has been codified in a Harvard Business School case study, and is taught at that premier business school as a context both for the challenges facing the UK's health and care system and for demonstrating best practice in change management.

Book 12 concludes the book series with a summary of the need for reform of the UK's health and care system. The eight factors outlined above interact and feed off of each other, and solutions need to recognise the systemic nature of the root causes. The plan outlined in the book-series contrasts with the vague plans and policies that the NHS publishes but rarely delivers. This is a feature of highly politicised environments like the NHS.

This, despite the ravages of Covid, is a good moment to grasp the nettle of reform. The NHS CEO of the past few years has been Simon Stevens. He is a bright and talented man, but at core he is a politician. He has managed the politics of the service well – especially through the pandemic- but he is at heart a politician not a manager or strategist.

The result has been the production of a lot of high level strategy but little incisive strategy and this not well implemented. The NHS has made very little progress in improving patient outcomes and service. The solutions to the constraints to change outlined above are urgent as the current situation is damaging the health and wellbeing of the UK population.

Eight constraints in practice.

SECTION 7

'A new study published in the Lancet Oncology shows that Britain's cancer survival rates are lagging behind those of other wealthy countries.... Australia had the highest survival rates while Britain had the lowest after Canada, Denmark, Ireland, New Zealand and Norway. In Britain the disease is responsible for more than a quarter of all deaths.'

The UK's poor performance on cancer survival rates is a 'call to arms', and illustrates – demands even – that the eight constraints to productive reform are overcome.

1. THREADBARE SOCIAL CARE

Poor out of hospital care has both a degrading and damaging effect on cancer sufferers. Patients living with cancer often have other health issues which, together with their primary cancer diagnosis, mean that they need support in their day-to-day lives. The lack of such support results in diminished lives, especially for poorer people who have less money to pay for social care, and often have less access to a supportive network of family and friends.

*'New research commissioned by Macmillan has now revealed the stark reality that the social care needs of people with cancer are far more widespread than we had expected, and in many cases levels of support are falling woefully short. People at all stages of the disease are lacking the care and support they desperately need, with devastating consequences for their health and dignity – hundreds of thousands of people are being left housebound, unable to wash or dress themselves, and are even at risk of soiling themselves in their own home. This lack of dignity is contributing to the huge emotional toll that cancer can inflict. People are living with constant feelings of fear, anger and isolation, not to mention depression and anxiety. Only one in five of all people with cancer receive any kind of formal support, despite an estimated four in 10 having needs serious enough to be eligible, and one in six have needs but receive no support at all from anyone.'*⁷

The effect of threadbare social care is not only degrading and uncomfortable, it can also be deadly. The lack of support can result in a deterioration of the patient's condition and a faster path to death. At the same time it piles more pressure onto the NHS.

*'One in five people with cancer have had to go to hospital for an unplanned or emergency visit because of a lack of support for their practical or personal needs.'*⁸

2. MAJOR CRACKS BETWEEN HEALTH AND SOCIAL CARE SERVICES

The situation would also be improved if people were better informed about what symptoms to look for. Yet, the system, due to its history, has an 'acute' emphasis rather than a preventive one, and public information campaigns are both too sparse and insufficiently customised.

A public health function embedded into a restructured community-based and primary care system would be able to target individuals with a high risk of developing cancer, diagnosing them earlier and giving them a personalised treatment programme.

One in three cancers are preventable, and the four biggest risk factors are: smoking, poor diet, obesity and alcohol. Customised prevention programmes, shaped around the particular psychology and lifestyle of the individual, would have a highly beneficial impact. For example:

'Smoking is by far the most important preventable cause of cancer in the world. Smoking rates, although declining in Britain, are still at 20 per cent of the adult population, and around 150,000 children take up the habit every year. Our impact in this area could be dramatic – reducing the number of people smoking by just one per cent could save 3,000 lives per year in the UK from cancer alone.'

3. AN OVERLY CENTRALISED SYSTEM REQUIRING DEVOLUTION

The chances of contracting cancer rise steeply for poorer, less advantaged people:

'Several studies have reported that not working versus working was associated with elevated risk of all cancer, lung, mouth and pharyngeal (throat), laryngeal, oesophageal cancers and oral cancer for both sexes. Unemployment and negative health consequences are well established with health effects felt at the first signs of job insecurity leading to psychological stress and anxiety as well as financial impact.'

Devolution to the local community is required so that (a) the current patchwork of jurisdictions can be integrated into a patient-centred mandate and delivered with lucidity, and (b) the full panoply of factors, extending to issues such as housing, employment and education, can be engineered to reduce the foundational causes of ill-health.

4. INSUFFICIENT MONEY

Better screening would support earlier diagnosis. Yet, the problems of funding, especially under-investment in IT systems, and the pounding stress placed on under-resourced, under-supported managerial and admin staff, mean that screening is often haphazard.

'More people will die of preventable cancers and heart conditions because of the government's failure to address appalling flaws in screening programmes....A damning report by MPs on the Public Accounts Committee found not one adult screening programme in England met its minimum target for health checks.'

Under-funding has also led to gaps in the clinical workforce:

'Staff and equipment shortages are further hampering the health service's ability to close the gap on other countries. According to Cancer Research UK, one in ten diagnostic posts is vacant...Meanwhile, health workers are having to put up with old or absent machinery. While Japan has 107.2 CT scanners per million population, Britain has 9.5.'

More resources are needed, and an hypothecated, progressive tax fund, supplemented by inventive new methods to raise money, is the most appropriate way of unblocking the logjam of underfunding due to reliance on general taxation.

5. INADEQUATE AND UNDER-SKILLED MANAGERS

The five major health and care domains – mental health, community-based care, primary care, accident & emergency (A&E) and the emergency pathway – and in-hospital specialities are at best uncoordinated and, at worst, chaotic.

A key factor in surviving cancer is how early the disease is diagnosed. Such is the pressure on the system that getting to see a GP is becoming harder and harder, and consultations are often rushed, meaning that diagnosis is delayed or even overlooked:

'Around 115,000 patients are diagnosed at stage 3 or 4 each year, too late to have the best chance of survival....There are delays, too, between a person resolving to see a doctor and being seen. One in five patients has to wait at least 15 days to see a GP in England, and then for under ten minutes. The delay and brevity of the appointment go some way to explain why 20 per cent of cancer cases are diagnosed in an emergency situation. Such patients are less likely to survive as their cancer will probably have been discovered too late.'

The increasingly ruptured system disfigures the process of cancer care throughout the whole pathway:

'Further delays occur after a patient has been referred for cancer treatment. Hospitals are meant to start care within 62 days of an urgent referral by a GP in 85 per cent of cases. A recent study showed that nearly three quarters of services in England failed to meet that target, compared with 36 per cent five years ago.'

6. JUMBLED JURISDICTIONS

Professor Sir Mike Richards, in his review of cancer screening, condemns one of the key impediments to productive change: the lack of clear executive authority and the befuddlement of overlapping responsibilities and jurisdictions.

'Other issues outlined in this report are rooted in the question of governance and accountability. Many people have asked me 'who is in charge of cancer screening?' The answer is not obvious.'

Clearly an individual and their team need to be unambiguously in charge and accountable.

7. UNDER-MANAGEMENT OF BROADER, SCALE-EFFICIENT HEALTHCARE ECONOMIES

Cancer care and, especially, early, life-saving cancer identification and treatment has suffered from the lack of a system perspective. In some areas of the country, cancer networks were set up to correct this problem, but many of them were dismantled in the reforms of the Conservative/Liberal coalition government (the 'Lansley' reforms) in 2012.⁹

These are being resurrected and improved in areas where the new ICSs are making progress, and they will have a discernible impact on improving the UK's poor performance on cancer survival rates. They must seek to find ways in which the 'gatekeeping role' of the GPs can be circumvented to permit patients to gain early access to cancer diagnosis. This will not be achieved by doing more of the same but requires a conceptual change in the mind of primary care.

'If ICSs prove successful, in five to ten years time we will have improved cancer prevention through more collective endeavour and better early diagnosis. We all see that as key to improving. As well as improving outcomes, we will have also settled any changes in cancer care pathways (route, standardisation, good practice on tests, where expertise is best concentrated). Making collective decisions is vital to all those improvements and I'm now more confident we might be able to do these things and make it all happen'.¹⁰

8. MUDDLED AND OVERLAPPING NATIONAL BODIES

Corporate NHS launches regular policy papers on ways of improving the UK's performance on cancer survival rates but does not follow through with coherent and consistent management of the policy recommendations. There are many examples, but to use just one, Cancer Research UK makes the following plea with regard to the crucial area of data for research.

'With the NHS as a single provider, and with a large, socially and ethnically diverse population, the UK has the potential to become a world-leading centre for innovative digital healthcare. This could increase efficiency, attract investment, create jobs and improve patient experience. It has also been found that digitally facilitated research can lead to substantial efficiency savings. However, even experienced researchers running major national studies experience continual delays and frustrations in accessing data from the NHS.'

'While processes must be robust, they must all be proportionate and efficient. Currently NHS Digital and Public Health England run separate, overlapping application processes.'

A single national body responsible for managing all of the factors that are required to improve survival rates should be created. It would provide the overarching enablers, such as data protocols, that devolved authorities can then shape to meet local needs.

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Professor Stephen K Smith (Dsc, FRCOG, FMedSci) was until recently the Chair of East Kent NHS Hospital Trust. He is involved in a number of early stage healthcare 'tech' enterprises and advises countries such as Saudi Arabia, on healthcare reform. Previously, he was the Dean, Faculty of Medicine, Dentistry, and Health Sciences at the University of Melbourne and Chair, Melbourne Health Academic Centre.

Prior to taking up the position of dean, Professor Smith was Vice President (Research) at the Nanyang Technological University (NTU) in Singapore and was the founding dean of the Lee Kong Chian School of Medicine, a school run jointly by NTU and Imperial College, London, from August 2010 to July 2012.

Professor Smith was the Principal of the Faculty of Medicine at Imperial College London from 2004 and has served as Chief Executive of Imperial College Healthcare NHS Trust since its inception, the largest such trust in the United Kingdom, with an annual turnover of £1 billion.

A gynaecologist by training, Professor Smith is active in research and has published over 230 papers on reproductive medicine and cancer. He was awarded his Doctor of Science in 2001 at Cambridge for work on the complex gene pathways that regulate the growth of blood vessels in reproductive tissue. In addition to his academic and clinical work, he is a Fellow of the Academy of Medical Sciences, the Royal College of Obstetricians and Gynaecologists, the New York Academy of Sciences, and the Royal Society of Arts.

Professor Smith led the creation of Imperial College Healthcare NHS Trust, the United Kingdom's first Academic Health Science Centre (AHSC). The trust was launched in October 2007 by the merger of Hammersmith Hospitals NHS Trust with St Mary's NHS Trust, and by its integration with Imperial College, London.

His pioneering role in establishing the AHSC was recognised in the NHS Leadership Awards, where he was named Innovator of the Year in 2009. The *Health Service Journal* listed Professor Smith in its 2009 rankings of the top 30 most powerful people in NHS management policy and practice in England, where he was the only NHS chief executive to be included. His contribution to this book-series is solely in a personal capacity.

VOLUME ONE

PROFESSOR STEPHEN K SMITH

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