Introduction: the heart of the matter

This book is not about healthcare policy. Glancing at the title, the reader might think differently. Actually we are concerned with public policy – the whole of it and not just healthcare policy. This is because we have undertaken a redefinition of 'health'. Our new definition forces us to widen our scope. Imagine this was a book on the case for overhauling the nation's infrastructure. Would it discuss only drains and trains? Or would it also examine issues in urban and rural planning, in transport, housing, education, health and so on? It is the same for us: we think health policy has been pigeon-holed for too long and we say it has to stop.

Nor is this book about healthcare – the current euphemism for treating the sick. We are concerned about what happens before you get sick, before you show symptoms, before you get medicines and therapy. This book is about what we need to do to prevent disease in the first place. Too often, we see a news story about prevention and it turns out to be a story about some new life-saving treatment. In other words, people muddle the prevention of death with the prevention of disease. This muddle has to stop too.

It is widely recognised that prevention of disease is better than cure. Hippocrates first hit on this idea over 2,300 years ago. But, what does that mean for developed post-industrial societies today where it is not so much infectious diseases as common long-term

conditions that are a risk, first to our health and then to our lives? In days gone by, societies were afflicted with infectious diseases that, in some cases, rapidly wiped out a large fraction of the population. Without vaccination and drugs like antibiotics, humanity could not avoid such devastating plagues. However, today, we have a group of long-term conditions that afflict a similarly large fraction of the population: we have the modern plagues of diabetes, depression, heart disease and cancer.

Yes, medicines or other treatments can help patients once they have been diagnosed with these conditions. This can extend life, even if treatment cannot overcome all the disability that follows on from diagnosis. But there is no drug or vaccination that can unfailingly prevent the development of these conditions. Other methods are needed for the prevention of the plagues of our times.

Surely, you might say, preventing the inevitable is impossible. Yes, of course, it would be impossible to eliminate every case of diabetes, heart disease, depression, cancer and other long-term conditions. However, it is the risk of getting those conditions that we can reduce. In so doing, we can reduce incidence and prevalence – that is the number of people who get these conditions and the numbers who must endure them for years or decades. This idea is at the heart of this book.

We need, first, to recognise the scale of the problem: how many people are affected in what ways? Then we need to understand what creates the risk of getting one of these long-term conditions? There are two types of risk: modifiable and non-modifiable. Modifiable risks are amenable to being reduced, comprising factors such as social isolation, physical inactivity, obesity and pollution. Non-modifiable risk is genetic risk. This is due to small variations in people's genes, which act to promote – or to inhibit – processes that can result in one or more long-term conditions. These many variations are not amenable to modification. Therefore, prevention means focussing on reducing modifiable risks.

But reducing these risks turns out to require challenging, across-the-board changes in our way of life, in the way we organise our societies and cultures. That is a big ask for some politicians: quick fixes that only appear to be tackling the problem are easier. The plan of action that we outline here involves profound individual and societal change. It will shake society to its core. Such a shake-up is justified only if there is clear evidence that it is needed along with a simple and practical plan of action.

We will present the evidence that today's common long-term conditions comprise the modern plagues that kill millions and burden us with years of lingering disability. Lives were lost to past plagues because society did not know what to do. When the bubonic plague struck – most famously in the Black Death that swept round the world in the fourteenth century – people could pray to their gods, run away or do both. To prevent today's common long-term conditions, we know what we must do: we have to reduce our modifiable risk factors.

However, we are not doing that: our societies dither and tinker as the modern plagues spread further and further. This cannot be an option when these plagues pose systemic risks to society. Such risks include social fragmentation, losses of productivity and, ultimately, an undermining of democracy.

Our way of life is the product of public policy as a whole. So, to change our way of life, public policy has to change. Social habits, personal habits, customs, culture, economics and politics can all stand in the way. So, those are the problems on which to focus. There are also some scientific and technical issues to act on, but there can be no purely technological fix. There is not, for example, any magic potion, pill or elixir coming along any time soon to lengthen our healthy lives. Such magic goes back to Bronze Age China and Ancient Greece. Pills may change our biology but they cannot alter the modifiable factors that have promoted the modern plagues in the first place.

The heart of the matter

Introductions often give readers a preview of the main idea at the heart of a book. Here, the main idea will appear to be different depending on whether the reader is a well-informed person, a natural scientist or a social scientist.

For a natural scientist (one that researches the natural world), the main idea we propose is 'Systems Prevention'. This is the term we give to a consequence of the particular capability of our species for advanced communication – for speech and its related property of abstract thought. This capability allows us to act consciously to achieve things that other species leave to natural selection. Just as the origin of species is down to natural selection, so is the preservation of characteristics that allow members of a species to avoid a predator or disease. That is why Charles Darwin refers to 'preservation' in the title of his famous book.[1] Humanity, however, can preserve itself in a unique way. It can prevent conditions and diseases by working out how to do so and then following through with action. 'Systems Prevention', then, refers to the way that common long-term conditions require humans consciously to work for their prevention, based on our recognition of a web of connections (a system) that exists between the different levels of organisation of our species. This web links the smallest molecule to the biggest influences of our societies and the natural world around us. We have borrowed this idea of connectivity from a contemporary biologist, Denis Noble, who proposed a principle of biological relativity. Noble's idea focusses on how biological systems work normally. We have extended the idea to when systems become abnormal. We discuss Systems Prevention in Part III and we shall use the idea – expressed less technically as the 'Health Society' – in Part IV.

For people with a background in the social sciences or humanities, our main idea is that society needs a new framework for the whole of public policy. This framework is rooted in what a

Roman lawmaker – Cicero – wrote 2,000 years ago: 'the health of the people is the supreme law'. There is debate as to whether Cicero took 'salus' in Latin to mean health or something else (like well-being, welfare, security or simply goodness). We are happy to use 'salus' to mean health and we are happy to use the phrase 'supreme law' to mean a fundamental guiding idea. We then borrow from political philosophy[2] the notion that 'health' comprises the optimal satisfaction of human needs where these needs fall into three categories: vital, social and agency needs. We assert that this provides a positive definition of health in place of the conventional negative definition (as an absence – an absence of disease). This positive definition directly guides action to improve population health. So, we conclude that public policy as a whole should have as its guiding idea the optimal satisfaction of human needs. Those needs change over time and priorities change too. That is all a matter for new evidence and free debate.

For the well-informed reader with a range of interests, the main idea we propose is for the Health Society. We in the UK are proud of our National Health Service (NHS) but we also complain that it is, in effect, only a national disease service. It seems to act only when we are already unwell. While it does a great job preventing us getting infectious disease, prevention of non-infectious long-term conditions has not worked. We do not blame the NHS for this – it is a problem for all our institutions and organisations. So, we propose a number of policy innovations that can begin to change things. For example, we endorse the proposal of a recent Chief Medical Officer that obesity be treated as a national risk. What that means is placing obesity onto the National Risk Register and all the local Community Risk Registers. The other key modifiable risk factors (high blood pressure and social isolation) also may need to go on the risk registers. The practical effect of adding these risk factors is that all departments of national and local government would be required by law to put in place cross-departmental plans to reduce risks. Infectious diseases like flu are

already on the registers. So, why not the modifiable risk factors for common long-term conditions as well? We also propose that policy on the prevention of conditions and diseases should be the central organising principle of government. One way of ensuring this is by giving that responsibility directly, explicitly and wholly to the Deputy Prime Minister. This then gives a flavour of our plan for a National Health Society.

So, that is the heart of the matter. First, science points to the web of connections between the organism, the environment and health. Second, public policy can deliver the public good expressed as 'health' if it optimally satisfies (or, more precisely, if it establishes and maintains the conditions required for optimal satisfaction of) our individual and social needs. Third, science and public policy together give rise to a plan for the construction and maintenance of the Health Society.

To build these arguments, the book is divided into four parts. Part I describes what is driving the need for change – the high prevalence of a set of common long-term conditions. We examine these conditions, their scale and their social, economic and political impacts. Public policy has failed to prevent or end these plagues. Part II looks at key problems in prevention of common long-term conditions – problems in epidemiology and biology, the nature of risk and barriers in society. Part III notes the failure of public policy and starts the process of re-thinking the basic issues. It develops a new definition of 'health' based on modern biology and philosophy: health is the condition where human needs are optimally satisfied: satisfaction of needs prevents the modern plagues. Part IV then uses this definition to propose actions that can minimise the prevalence of the common long-term conditions and thereby end the modern plagues. These actions comprise the construction of the Health Society where our institutions are reformed, modern technology is deployed, and businesses and communities are engaged, involved and empowered. Actions are proposed that are bottom-up as well as top-down because a

profound change in our way of life is needed – not just some minor modifications to individual behaviour with which 'nudge' theorists choose to concern themselves.

While you read this book, please hold very tight. We shall be saying things that are unsettling to numerous interest groups. We shall range very widely over the humanities and the natural sciences. Sometimes you may feel that you don't understand on first reading what we're saying. But don't give up. Because the change we want is worth it.