



**RAPID
RESPONSE**

COVID-19 AND RISK

Policy Making in a
Global Pandemic

AUTHOR
ANDY ALASZEWSKI



RAPID RESPONSE

COVID-19 and Risk

*Policy Making in a Global
Pandemic*

Andy Alaszewski



First published in Great Britain in 2021 by

Policy Press, an imprint of
Bristol University Press
University of Bristol
1-9 Old Park Hill
Bristol
BS2 8BB
UK
t: +44 (0)117 954 5940
e: bup-info@bristol.ac.uk

Details of international sales and distribution partners are available at
policy.bristoluniversitypress.co.uk

© Bristol University Press 2021

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library

ISBN 978-1-4473-6201-2 ePub
ISBN 978-1-4473-6202-9 ePdf

The right of Andy Alaszewski to be identified as author of this work has been asserted by him in accordance with the Copyright, Designs and Patents Act 1988.

All rights reserved: no part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise without the prior permission of Bristol University Press.

Every reasonable effort has been made to obtain permission to reproduce copyrighted material. If, however, anyone knows of an oversight, please contact the publisher.

The statements and opinions contained within this publication are solely those of the author and not of the University of Bristol or Bristol University Press. The University of Bristol and Bristol University Press disclaim responsibility for any injury to persons or property resulting from any material published in this publication.

Bristol University Press and Policy Press work to counter discrimination on grounds of gender, race, disability, age and sexuality.

To my wife, Helen, for being so patient and understanding when I disappear into my head to think or into my room to write.

Contents

List of tables	vii
Notes on the author	ix
Acknowledgements	xi
Preface	xiii
1 Introduction: understanding risk	1
2 The challenge of foresight: framing COVID-19	7
3 The risk of COVID-19: probability, categorisation and outcomes	21
4 Communicating risk: public health messaging	41
5 Pandemic narratives: representing risk through numbers or personal stories	57
6 Contesting risk: conspiracy theories	73
7 Hindsight: inquiries and the blame game	89
8 Conclusion: what we can learn from the COVID-19 pandemic	103
References	111

List of tables

3.1	Official categorisation of risk groups in the UK, US and Canada	26
4.1	New Zealand Alert System	52

Notes on the author

Andy Alaszewski is Emeritus Professor of Health Studies at the University of Kent. He completed his undergraduate (BA, Social Anthropology) and postgraduate studies (PhD, Social and Political Sciences) at the University of Cambridge. He is an applied social scientist who has researched the ways in which policy decisions are made and implemented and the role and nature of risk in health and social care. He is the founding Editor of *Health, Risk & Society*, an international peer-reviewed journal published by Taylor & Francis. He is author of numerous scholarly articles on risk and co-author of *Risk, Safety and Clinical Practice: Healthcare through the Lens of Risk* (Heyman et al, 2010) and *Making Health Policy: A Critical Introduction* (Alaszewski and Brown, 2012).

Acknowledgements

I would like to thank my daughter, Anna, for stimulating my interest in how policy makers were responding to COVID-19; my wife, Helen, for reading and critically commenting on the first draft; and my son, Mark, for his comments on the penultimate draft. My thanks to MA Healthcare Limited for permission to use material from my article ‘Should pregnant women be in a high-risk COVID category’ published in the *British Journal of Midwifery* (Alaszewski, 2020).

Preface

This book developed out of my interest in risk. Since the mid-1990s, I have researched, published and edited an international journal on risk (*Health, Risk and Society*).

In 2008, I was invited to join the UK Scientific Advisory Group on Pandemic Influenza (SPI) convened by the Department of Health, a precursor of the current scientific advisory groups on pandemics. In the committee, we reviewed the risk of a global flu pandemic impacting on the UK (high) and considered the effectiveness of alternative responses (probably limited). The three groups of experts on the committee each advocated a different approach to mitigating the risk of a pandemic:

- *Scientists with expertise in microbiology or pharmacy* supported the development of vaccines to prevent infection or mitigate symptoms. This was problematic as flu and other viruses tend to mutate rapidly so flu vaccines have limited efficacy.
- *Behavioural scientists* advocated behavioural changes to improve personal hygiene such as hand washing and sneezing into disposable tissues. It was not clear how easy it would be to improve personal hygiene nor how effective it would be in limiting the spread of a highly infectious virus.
- *Epidemiologists and risk experts* including me focused more on evidence from past pandemics, especially the 1918–19 Spanish flu pandemic. In the US, those cities which shut down quickly and stayed shut down the longest had the lowest death rates whereas those cities that delayed shutting down and reopened quite quickly had the highest death rate. During a pandemic, a global

spread of a deadly disease, it was probable that the virus causing the disease would be carried into the UK by international travellers and then distributed by public transport systems and large-scale gatherings. The only way to control its spread was by limiting access through ports and airports and reducing social interactions on public transport and at large public events, an approach that is now referred to as social distancing. In such a pandemic, it would be imperative that the public were warned, especially the most vulnerable such as the elderly, so they could take action to protect themselves.

The civil servants who serviced the committee were unreceptive to the social distancing approach. They felt it would infringe on civil liberties and disrupt economic activity. They were more receptive to approaches that focused on individuals: vaccination and personal hygiene, such as hand washing and nose blowing.

Like most people in Europe, I first became aware of COVID-19 in early 2020. My wife Helen's brother was admitted to a major teaching hospital in Paris in February 2020 with advanced kidney cancer. Through February into early March, we visited him regularly and were able to observe the French adopt a policy of social distancing. When we returned to England in early March, I was shocked at the lack of action. Despite media reports that there were virus hotspots in Northern Italy and central Spain and that the virus was rapidly spreading in Europe, no efforts were made in the UK to restrict or monitor travellers from virus hotspots nor to restrict large public gatherings. I found it difficult to see why governments in Europe were so slow to react, given that the warning signs were there from mid-January. This stimulated my interest in the pandemic and is one reason why I wrote this book.

Another stimulus came a couple of weeks later. On 16 March, I was listening to the 6 o'clock news on BBC Radio 4 and I heard an extract from the Downing Street press briefing. The Prime Minister announced the British response to COVID-19 was shifting to a lockdown of social and economic activity. At this briefing, the Chief Medical Officer,

Chris Whitty, identified a number of groups who were at high risk and should protect themselves, including pregnant women. I was puzzled as pregnant women were the only group of people in the high-risk category for whom there was *no evidence* that they were particularly vulnerable to COVID-19. My daughter, Anna, who lived in New York, had heard the same interview and phoned me to talk about it. To be sure that I understood what Chris Whitty had said, I watched the briefing on YouTube. I was able to reassure Anna that there was no evidence that she or her unborn baby were especially vulnerable to COVID-19 and it was a precautionary measure. However, I was curious why the precautionary principle of ‘better safe than sorry’ was being used to include pregnant women in the high-risk category.

In this book, I explore these issues and consider the role which risk has played in the ways policy makers round the world have responded to the risks of COVID-19.

*Andy Alaszewski, Canterbury, Kent
January 2021*

Introduction

Understanding risk

Risk as a way of managing uncertainty

All societies need ways of managing the uncertainties of the future and accounting for the misfortunes of the past. In pre-modern societies, such as small-scale intimate societies or historic societies in Europe, religion and supernatural beliefs, such as those in witchcraft (Alaszewski, 2015), provided the basis for prediction of the future and allocation of blame for misfortune. In the modern high-income countries with developed health care, these systems have been (partially) replaced by rational ones, especially risk, in which human actions are based on reason and evidence. Indeed, for sociologists such as Anthony Giddens (1991), this drive towards rationality is the hallmark of modernity.

The use of risk to manage uncertainty

The emergence of risk as a framework for rational decision making can be traced back to the emergence of mercantile capitalism in the 17th century. Merchants managed the risk of shipping accidents and loss by sharing the risks through insurance. Lloyd's of London was founded by Edward Lloyd in a coffee shop in London in 1686 and still functions as market place in which insurers pool and spread risk. The mathematical underpinning of risk, statistics and probability developed in the 17th century out of studies of games of chance and gambling (Bernstein, 1996). In the 18th century, the study and use of risk was stimulated by the Enlightenment, a social movement committed to the development of secular knowledge aiming to replace ignorance, superstition and religion with rationality based on science. In the case of risk, by

observing past events it is possible to estimate the probability of such events occurring in the future and therefore make better, more rational decisions in the present (Bernstein, 1996, p. 48).

Predicting the future

One role of risk in contemporary society is as a way of reducing uncertainty by predicting and managing the future. There is a focus on the technical problems of measuring probability. In the COVID-19 pandemic a lot of attention has been given to measuring or modelling the probability of infection by the virus. Less attention tends to be paid to the other key element of risk: the different possible outcomes. This is partly because when focusing on one specific outcome, such as contracting COVID-19, the values are clear: contracting COVID-19 is a bad outcome and it is self-evident that reducing infection and ‘saving lives’ is a positive outcome. However, things become complex when choices have to be made that involve a good outcome for some individuals but a bad outcome for others.

As I will argue in Chapters 3 and 5, policy makers are more comfortable dealing with the technical aspects of risk, the numbers, but are less comfortable when value judgements have to be made.

Allocating blame

Risk can also play a role in making sense of past misfortunes. As Bernstein observed, risk and probability have ‘a double meaning, one looking into the future and the other interpreting the past’ (Bernstein, 1996, p. 48). The past and future seem different—in the past things have happened and cannot be changed while in the future nothing has happened and therefore anything can happen. However, like the concept of sin in religious societies, in modern societies risk can be used both to predict the future and to account for the failure to predict and take action to prevent danger in the past. The difference between the concept of sin and that of risk is that sin has an explicitly moral aspect while risk appears to be a more neutral; however, such neutrality disappears when blame is allocated for past failures.

Mary Douglas, a social anthropologist, reflected on the ways in which risk is used to allocate blame. She argued that before a bad event, the risk taker about to take the risk is warned but if this warning is ignored and the predicted bad event happens then the risk taker is open to blame (Douglas, 1990, p. 5). This process of blame allocation with its implications of moral failing can be seen various modern disasters. In the case of BSE/vCJD (mad cow disease and its human version) Professor Richard Lacey, a microbiologist, was a dissenting scientist whose warnings were ridiculed (BMJ, 2019). In the Bristol Royal Infirmary, where the incompetence of paediatric surgeons led to preventable child deaths, Dr Stephen Bolsin was the ostracised whistleblower (BMJ, 2016). The whistleblowers' warnings were disregarded but they were vindicated in subsequent inquiries that used hindsight to identify and allocate blame for those who disregarded the warnings and the risk. I will examine in Chapter 7 the role which hindsight and inquiries are already playing in societal responses to COVID-19.

Other approaches to managing uncertainty

Trust and hope

Risk and rational decision making are aspirations. Individuals in modern societies, especially those in positions of power who make decisions on behalf of others, seek to legitimise their authority by claiming that their decisions are rational, based on the best possible evidence and risk assessments and will result in the best possible outcomes (see Alaszewski and Brown, 2012 for a discussion of these aspirations). However, there are a number of factors that undermine rationality and risk. Perhaps the most obvious factor is a lack of knowledge. As I will show in Chapter 2, at the start of the pandemic policy makers had to deal with the uncertainty of a new disease. Doing nothing and hoping for the best was not a justifiable option so policy makers looked for alternative sources of knowledge.

In modern societies, knowledge about complex events such as pandemics tends to be controlled by technical experts, doctors and epidemiologists. Most policy makers and most citizens are not experts and therefore depend on and have to trust experts (Alaszewski, 2003). Trust involves an element of rationality. Individuals can use different sources of information to judge trustworthiness such as their past experience, the recommendation of friends and family, evidence of qualifications or personal judgement. But trust also has an irrational element: it is essentially an act of faith. As Brown and Calnan (2012) have observed, amongst the vulnerable there is often a ‘will to trust’.

As I will show in Chapter 4, trust has played an important role in the pandemic both between politicians and experts and between policy makers and the public. In most policy systems, politicians who take on responsibility for policy making in health do not have specific expertise in health (in the UK it is unusual to have a health minister with experience of health and social care). Therefore, these politicians have to rely on scientists and medical specialists who do have this expertise. As I will show in Chapter 3, such relationships may be difficult, and indeed have an element of distrust, especially where there is a conflict of ideologies.

Trust is also an important element in the relationship between policy makers and the public, especially during a pandemic when policy makers have access to risk assessments and want to communicate them to the public so that members of the public can change their behaviours in ways that reduces individual and collective risk. I will consider in Chapter 3 how risk communication can foster or undermine trust and in Chapter 6 examine the conspiracy theories that reflect the growth of distrust in science and governments.

Trust and hope are essentially default strategies, used when there is a knowledge deficit. There are other strategies that exist alongside and can undermine or come into conflict with risk-based strategies, including faith, ideology and emotion. Faith, particularly in a system of religious belief, can conflict with risk and result in resistance to risk-based systems. Gross and Shuval (2008) have documented the ways in which ultra-Orthodox communities in Israel used medical knowledge.

Given belief in divine power, members of the community were only willing to use medical knowledge if it provided certainty. ‘Knowledge had to be actual and factual, based on the existing situation, and not on the future, however predictable it may be.’ Thus, for members of this religious sect, ‘risk science which aims to imagine future situations and their probabilities is nothing but futile’ (Gross and Shuval, 2008, p. 555). During the COVID-19 lockdown in New York, the Hasidic Ultra Jewish community in Williamsburg were reported to have repeatedly broken lockdown regulations culminating in police action on 28 April 2020 to break up a large crowd that had gathered at the funeral of Rabbi Chaim Mertz. This attracted widespread media coverage (Layne and Caspani, 2020).

Limits of rationality: religion, ideology and emotion

Ideology, like religious faith, provides a way of viewing and making sense of the world and can form the basis of social movements, especially if espoused by a charismatic leader. Ideologies can be compatible and draw on risk. For example, vegans highlight the risks of eating animal products both to the individual and to the planet. Ideologies can, however, draw on the rhetoric of risk to challenge the consensus of expert opinion on risk. As I will show in Chapter 6, conspiracy theorists claimed that there was evidence that COVID-19 was either not real or a product of specific technologies but that this evidence was suppressed.

Risk is based on calculations, the systematic use of reason based on evidence. This can be both time consuming and demanding. In everyday life, such systematic approaches are often bypassed by the use of shortcuts such as emotions, intuition and heuristics or rule of thumb. Unlike arguments based on reason and rationality, emotional appeals do not require a lot of thought or effort to understand; they can easily be converted into and communicated as slogans. Public health campaigners have used emotional appeals to foreground particular health risks to alter individuals’ behaviour by making them more aware of and anxious about these specific threats to their health. In the UK such campaigns using emotions,

for example anxiety, fear and guilt, have highlighted specific dangers from new diseases such as HIV/AIDS with the 1980s' 'don't die of ignorance' campaign (Burgess, 2017) as well as the annual 'don't drink and drive' campaigns that started in 1964 (The Telegraph, 2020).

The directness and simplicity of emotional appeals means that they are often used by social movements to recruit and communicate with participants. Such emotional appeals can be used in political campaigns. In the US, President Donald Trump used campaign rallies and Twitter to create and communicate with his followers. His messaging was ideological and emotional and symbols such as borders featured prominently. It created a sense of authenticity; a sense that the reader has a direct relationship with the real Donald Trump and his emotional state. Shane (2018) observed: 'the typographical texture [of Trump's Tweets] tells us about Trump's personality and emotional state. It implies a speed of composition, impulsivity, and the lack of PR intervention'.

Such messaging gave Trump supporters a sense of belonging and purpose, important feelings that helped counteract the isolation and loneliness that many experience in modern societies. It also identified the dangers as phenomena outside the boundary of the social movement whether these are black rioters in US cities, Mexican drug barons or Chinese manufacturers of goods or viruses. The way to control these risks was to shut the borders to maintain the purity of those inside (Douglas, 2002). Such ideologies provided the basis for 'alternative' truth which, as I show in Chapter 6, played an important role in the response to the pandemic.

Comment

In this book, I will explore the ways in which countries responded to the threats of COVID-19 in 2020 and examine the ways in which different aspects of risk have shaped these responses.

The challenge of foresight

Framing COVID-19

The challenge of responding to a new infectious disease

On 31 December 2019, the World Health Organization (WHO) was notified by the Chinese authorities that there were cases of pneumonia of unknown origins in the city of Wuhan in Hubei Province (WHO, 2020a). By 3 January 2020, the Chinese authorities reported 44 cases of whom 11 were seriously ill and that the suspected source of the outbreak, a live-animal food market, had been shut down (WHO, 2020a). In an update on 20 January, the WHO (2020b) reported that the Chinese authorities had identified the cause of the outbreak, a novel coronavirus initially called 2019-nCoV (WHO, 2020b) and subsequently renamed SARS-CoV-2. Chinese scientists had established the genetic sequence of this virus and made it available to other countries. The virus was spreading in China and had spread to three other countries: Thailand, Japan and the Republic of Korea (WHO, 2020b). In early March, the WHO Director-General, Tedros Adhanom Ghebreyesus, announced that the disease caused by the virus, COVID-19 (Coronavirus disease 2019) had spread so far and so fast that it had become a global pandemic (Ghebreyesus, 2020a).

Risk and framing

In early 2020, COVID-19 was a new disease. Policy makers needed to assess its risk, especially whether it could spread between humans and, if so, how rapidly and the dangerousness of the illnesses caused by such infection. At the start of the pandemic, it was difficult to assess such risks as there was no evidence. The next best alternative was to use evidence from

a similar disease. So the question at the start of pandemic was which disease was COVID-19 most like, a process that can be referred to as framing. Erving Goffman (1975), a sociologist, developed the concept of framing and suggested that in any given situation it is the answer to the question: 'What is going on here?'

When framing a new phenomenon, individuals and groups draw on their knowledge of similar events or situations. They often use personal experience and/or sources such as media representations. When a significant event happens which attracts substantial public and media attention, then it can become a reference point and a frame for similar events in the future. The Glasgow Media Group's study of mental illness showed how public framing of the risk associated with mentally ill people was shaped by media representations of the dangerousness and violence of such individuals. They observed that individuals in their study tended to accept such representations even when they contradicted their own experiences (Philo, 1996).

The development and maintenance of frames

Framing is influenced by the interests of individuals and groups. For example, when the aircraft manufacturer Boeing launched a new aircraft, the 737 Max, it was in its interest to frame it as a minor modification of an existing aircraft, the 737, rather than a new design. This framing was accepted both by the regulatory authority (the Federal Aviation Authority) minimising scrutiny and by the airlines minimising pilot retraining. As a Congressional inquiry made clear, this framing concealed a basic design defect 'that resulted in the tragic and preventable deaths of 346 people' (The House Committee on Transportation and Infrastructure, 2020, p. 5).

Once a frame has become established, it can be difficult to change, especially when it is accepted by a community. Individuals and groups will accept evidence that supports the frame and disregard and downplay evidence that indicates an alternative reality and frame. In the UK, this explains why in the 1970s the police in Leeds only arrested Peter Sutcliffe, the Yorkshire Ripper, by accident. The police disregarded

both eye-witness descriptions and alerts from junior officers who interviewed Sutcliffe. Following tapes and phone calls taunting the police, they had framed the killer as a man who spoke with a Wearside accent and Sutcliffe had a Yorkshire accent (Bindel, 2020, p. 31).

In early 2020, as news of a new form of pneumonia of unknown origins started to come out of China, policy makers across the world had to decide how to frame the new disease and answer the question, ‘what sort of disease is COVID-19?’ They answered this question in different ways.

Framing COVID-19

The ways in which policy makers framed COVID-19 was shaped by their experience of a similar infectious disease: on the western Pacific Rim, the 2002 outbreak of SARS had had an major impact on policy makers and in West Africa, the Ebola outbreak which started in 2013 was still fresh in the memory. In Europe and North America, the regular winter outbreaks of flu shaped the framing of COVID-19.

SARS (Severe Acute Respiratory Syndrome) had similarities to COVID-19: it was a coronavirus which originated in China in 2002 and spread rapidly from mainland China to adjacent territories such as Hong Kong and Taiwan. It was highly infectious and very lethal: nearly 10 per cent of those infected died. Although there was very limited spread of the virus beyond the western Pacific Rim, there was widespread media coverage (Lewison, 2008). By 2003, the SARS outbreak was contained by international cooperation and public health measures: sharing information, isolating the infected and tracing and quarantining their contacts (Horton, 2020).

Ebola is a highly infectious virus. Before 2013, there had been small outbreaks in isolated areas in central Africa with death rates of between 50 and 90 per cent (Honigsbaum, 2020, p. 200). A major outbreak started in Guinea in late 2013 and by early 2014 the virus had spread rapidly to urban areas in neighbouring Sierra Leone and Liberia. While local and international agencies sought to control the outbreak using public health measures, there was resistance from local

communities who distrusted these agencies and interpreted measures such as disinfectant spraying as hostile acts designed to spread the virus. The outbreak was brought under control by behavioural changes such as the reduction of intimate contacts in some of the affected communities and by massive international aid. The outbreak was contained mainly in West Africa and was estimated to have infected 29,000 people, killing 11,300 (Honigsbaum, 2020, p. 222).

The SARS and Ebola outbreaks were reported by the media in Europe and North America but they were events that happened in other places and were relatively quickly forgotten. In Europe and North America, influenza was more of an issue. During the winter, flu was an ever-present threat. It was highly contagious and spread rapidly through the population and could be lethal, especially for older people and those with underlying health problems. Most years, levels of infection and deaths were limited and manageable; but in some years, a new more virulent strain would increase infections and deaths and place hospitals under pressure as admissions increased and staffing levels were reduced by staff illness. The most virulent pandemic was the 1918–19 Spanish flu. This pandemic infected around 500 million people and killed 50 million (Jordan, 2019). In Europe and North America, public awareness of flu is maintained by the annual public health campaigns to ensure that vulnerable people receive protective flu vaccinations.

COVID-19 framed as SARS in the western Pacific Rim

The majority of countries in the western Pacific Rim framed COVID-19 in terms of SARS. Most of these countries had had direct experience of the 2003 SARS outbreak, and the new disease from China fitted into this pattern.

Countries which framed COVID-19 as a new form of SARS concentrated on identifying and controlling the virus. This framing can be seen in Taiwan's rapid response to emerging news from China of a pneumonia of unknown origins. Following the SARS outbreak, Taiwan created a National Health Command Centre to coordinate responses to the outbreak of new infectious disease and Taiwan's Vice

President Chen Chien-jen was a doctor with a Doctor of Science degree in epidemiology and human genetics (John Hopkins University, 2020a). When the WHO received notification on 31 December 2019 of cases of pneumonia of unknown origins in Wuhan, China, Taiwanese officials took immediate action. They focused on the virus, identifying and isolating individuals who might be infected. They immediately started boarding all flights from Wuhan to check for symptoms of respiratory infection and isolated passengers with such symptoms. By 5 January, they had expanded surveillance to include all passengers who had travelled from Wuhan in the previous 14 days. Anyone with symptoms was tested for 26 viruses including SARS and was quarantined at home or in hospital. Using the national database of citizens plus the database of foreigners' entry cards, the Taiwanese authorities rapidly developed a sophisticated system which could provide rapid immigration clearance for those travellers who presented minimal risk and formed a way of keeping track of and preventing the spread of the virus (Wang et al, 2020).

COVID-19 and Ebola in West Africa

In West Africa, health care resources and technology are limited. However, countries such as Senegal saw COVID-19 as an Ebola-type threat and responded rapidly. As soon as the WHO declared COVID-19 an international emergency on 30 January, the Senegalese developed contingency plans (Shesgreen, 2020). When two individuals tested positive in March 2020, the President immediately increased social distancing by imposing a curfew and by restricting travel inside the country. At the same time, testing capacity was increased with test results within 24 hours. The government promised that every person who tested positive would get a treatment bed, reducing the risk that they would transmit the virus. Dr Boussa, director of the Emergency Operations Centre, said: 'We saw at the beginning that if you did that [isolate those testing positive], we could very rapidly stop the transmission of the virus' (Shesgreen, 2020).

Framing COVID-19 as seasonal flu

Not all countries in the western Pacific Rim immediately framed COVID-19 as SARS. Indeed, in China, patients in December 2019 presenting at the three main Wuhan hospitals with symptoms of COVID-19 were told they had flu or bronchitis (Honigsbaum, 2020, p. 262). When a whistleblower, Dr Li Wenliang, posted online on 30 December 2019 that there were ‘7 SARS cases confirmed’ at the seafood market, he was reprimanded by the local Security Office for ‘illegal rumour mongering’ and forced to sign a retraction (Honigsbaum, 2020, p. 262). Lockdown in Wuhan was delayed until 23 January 2020.

Similarly, in Japan the danger of COVID-19 was initially downplayed. This reflected its particular political circumstances: the Prime Minister, Shinzo Abe, was coming to the end of his time in office, and Japan was due to host the 2020 Olympics and wanted to avoid postponing them.

The ministry of health reported the first COVID-19 case on 15 January 2020, a Chinese national who had returned from Wuhan on 6 January and been hospitalised on 10 January (Japanese Times, 2020). At this stage, the public health message from the ministry was one of reassurance. The media coverage references SARS but the health ministry ‘issued a message to the public emphasising hand washing and other preventative measures similar to those taken for against a common cold or influenza’ (Japanese Times, 2020).

In both China and Japan, the framing of COVID shifted as the political elites accepted that COVID-19 was different to and more of a threat than seasonal flu. In Europe and most of the Americas, COVID was initially framed as seasonal flu and this framing was retained for longer and was more damaging.

Medical experts in Europe and North America were anticipating a pandemic and expected it to be some form of flu. This framing was reinforced by the early epidemiological evidence from China. Like flu, COVID-19 was highly contagious and older people and vulnerable people were more likely to have serious infections and die. Sally Davies, a former UK Chief Medical Officer, in her evidence to a joint inquiry by two UK Parliamentary Committees (Health and

Science), reflected on the reasons why policy makers in the UK framed COVID-19 as flu not SARS. She noted that: ‘We were in groupthink... We did not – our infectious disease experts – really believe that another Sars would get to us, and I think it’s a form of British exceptionalism’ (Davies in Sample, 2020)

Davies observed that the UK had had two emergency pandemic planning exercises, Winter Willow in 2007 and Cygnus in 2018, and these identified shortcomings that were rectified, but both were based on the assumption that the pandemic would be some sort of flu. This meant that key elements of the response to a SARS-like disease were neglected. For example, Davies said that ‘When you’re planning for flu, the classic is you don’t bother to test, so we didn’t have a test-and-trace system to stand up’ (Davies in Sample, 2020). Since it is extremely difficult to prevent flu viruses spreading, the emphasis was on identifying the individuals who were vulnerable and advising these high-risk individuals to protect themselves. The virus could then spread through the rest of the healthy population and eventually die out as the population built up collective or ‘herd’ immunity.

There was another factor in the willingness to accept COVID-19 as a flu-like disease. It appealed to and served the interests of right-wing populist politicians such as the US President, Donald Trump, the UK Prime Minister, Boris Johnson and the Brazilian President, Jair Bolsonaro. These populist leaders had an interest in representing COVID-19 as flu-like so they could avoid unpopular actions such restricting social and economic activity.

Tensions over the framing of COVID in the US

In the US, the flu/herd immunity frame played a central part in the policy debate. At the start of 2020 there was consensus amongst US policy makers that the virus was flu-like and not a high risk. This consensus shifted in March 2020 as the reality of the high level of infection and lethal nature of the disease became evident. In the summer of 2020 as the US Presidential election approached, experts continued to emphasise the dangerousness of COVID-19 but President

Trump and his inner advisers returned to their initial framing and minimising of the risks.

From the start of the pandemic, the President had access to sophisticated and up-to-date information. On 23 January when the Chinese authorities announced a lockdown in the city of Wuhan, Trump was informed by his chief security briefer that the new disease was ‘Just like flu. We don’t think it’s as deadly as SARS’ (Woodward, 2020a, p. 230). On 31 January, Trump and his Health Secretary, Alex Azar, were briefed by two leading experts on infectious disease: Anthony Fauci (Director of the National Institute of Allergy and Infectious Diseases) and Robert Redfield (Director of the Centers for Disease Control and Prevention [CDC]). Fauci was keen to stress the uncertainties associated with the new disease. He is reported as saying: ‘it’s all uncharted waters. That’s why we’re reacting. Because of what we’re seeing is happening in China. It’s devastating the place. So whatever the hell is going on in China right now is a hell of lot different than a regular flu season’ (Woodward, 2020a, p. 235).

Fauci also stressed that this new disease was also different to SARS as it was easily transmitted from person to person and could be transmitted by individuals who did not show any symptoms (Woodward, 2020a, p. 235). At this meeting, the President accepted advice that he should announce travel restrictions on individuals travelling from China.

By February, COVID-19 had reached the US and was spreading in California and New York. However, the administration chose to downplay the dangers, framing it as flu. On 27 February, the Health Secretary, Alex Azar, in evidence to the House of Representatives observed that: ‘The immediate risk to the public [in the US] remains low... it will look and feel to the American people more like a severe flu season’ (Woodward, 2020a, p. 254). At this time the experts, Fauci and Redfield, publicly supported this downplaying of the risk of COVID-19. On the *Today Show* on 29 February, Anthony Fauci stated that: ‘Right now the risk is still low, but this could change’ (Woodward, 2020a, p. 254).

In March there was further evidence of community transmission and that the virus was spreading rapidly in Europe. On 9 March, stock markets round the world

recorded their sharpest drop in a decade. Donald Trump tried to reassure people by tweeting that deaths from ‘common Flu’ were 27,000 to 70,000 a year but that there were only 546 COVID-19 cases in the US and 22 deaths (Woodward, 2020a, p. 275). Despite these reassurances, the US took measures to control the spread of the virus. On 11 March, the President signed a decree restricting travel with Europe and he announced measures that amounted to a national lockdown (Woodward, 2020a, pp. 280–2).

Across the summer and autumn of 2020 there was conflict between experts, especially Fauci and the Trump administration. For example, Fauci warned that the ‘death toll would be enormous’ (Higgins-Dunn, 2020) and that the US could ‘not possibly be placed more poorly’ to meet the threat of COVID-19. John Deere, a White House spokesman, called Fauci’s remarks unacceptable and suggested that Fauci was criticising the President (Yahoo News, 2020). In September 2020, Trump again suggested that the virus would go away without a vaccine because ‘You’ll [the US population] develop like a herd mentality [immunity]. It’s going to be herd-developed and that’s gonna happen’ (Mazza, 2020).

Effectiveness of the different frames

The framing of COVID-19 as a form of flu explains why countries in Europe and the Americas were so slow to react. The Chinese authorities had initially been slow to provide information but by early January this had changed and key information was being posted online. This information was picked up by researchers in Europe and North America. For example, in the UK researchers at Imperial College, London published their first COVID-19 report on 17 January based on 41 cases and 2 deaths in Wuhan and 3 cases outside China (Imai et al, 2020). Despite the early warnings of the virus, most countries in Europe and the Americas did not take public health measures until March 2020.

One way of evaluating the relative benefits of the two approaches to framing risk is to compare infection and death rates from COVID-19. John Hopkins University in the US produced regular updates during the pandemic based on

information from national authorities. It is clear from their data that those territories nearest Wuhan which had the least time to react and used the SARS frame had the lowest death rates. In contrast, those in Europe and the Americas, who had longer to prepare but adopted the flu frame, did far worse. (The following data were accessed from the John Hopkins website at the time of writing, 23 September 2020 [John Hopkins University of Medicine, 2020].) Taiwan had a low number of deaths (7) and lowest mortality rate per 100,000 population (0.03) and other countries in the western Pacific Rim were similarly low. South Korea had 388 deaths and 0.75 deaths/100,000 population, Vietnam 35 deaths and 0.04 deaths/100,000 population, Japan 1,518 deaths and 1.2 deaths/100,000 population and New Zealand, 25 deaths and 0.51 deaths/100,000 population. Countries in Europe and the Americas had the highest total and population adjusted rates death rates. Brazil had 137,272 deaths and 65.53 deaths/100,000 population, the UK 41,877 deaths and 62.98 deaths/100,000 population and the US 199,865 deaths and 61.09 deaths/100,000 population.

Case study: the shift from herd immunity to lockdown in the UK in March 2020

In the UK, policy debates took place behind closed doors. The policy community centred on the Prime Minister, Boris Johnson, his chief adviser Dominic Cummings and the Secretary of State for Health and Social Care, Matt Hancock. They were supported by civil servants, especially those with medical expertise, the Chief Scientific Officer, Patrick Vallance and the Chief Medical Officer, Chris Whitty. Patrick Vallance and Chris Whitty acted as a link between the ministers and scientific advisers who sat on various specialist committees, SAGE (Scientific Advisory Group for Emergencies), SPI-M-O (Scientific Pandemic Influenza Group on Modelling) and SPI-B (Scientific Pandemic Influenza Group on Behaviours).

Some parts of this policy community were visible to the public; for example, the ministers and their medical advisers presented government policy in press briefings: in the first

wave these were daily. However, the discussion and debates that underpinned the development of this policy were often hidden. In the case of COVID-19, journalists working for national newspapers and broadcasters have used sources in the government and freedom of information requests to find out what happened.

Early March: herd immunity

As COVID-19 spread across Europe in late February from an epicentre in Northern Italy, policy makers and their scientific advisers discussed the risks of the new virus. The dominant view was that it was a flu-like virus (Syed, 2020) and that they should monitor it through tracking and tracing but not restrict travel or social interaction. On 11 March, David Halpern, a member of SAGE, outlined the government strategy: ‘to cocoon, to protect those at-risk groups so they don’t catch the disease. By the time they come out of their cocooning, herd immunity has been achieved in the rest of the population’ (Sengupta, 2020).

On 13 March on BBC Radio 4’s *Today* programme, Patrick Vallance outlined government policy, stating: ‘Our aim is to try and reduce the peak – not suppress it completely, also because most people get a mild illness, to build up some degree of herd immunity whilst protecting the most vulnerable’ (Kermani, 2020).

A policy shift in mid-March

On Monday 16 March 2020, at a press conference, the Prime Minister, Boris Johnson, announced a major change in government policy, moving from business as usual to what he referred to ‘this very draconian measure’ (Rev, 2020), a lockdown of all non-essential social and economic activities on 23 March. He stated that as the epidemic was approaching its fast-growth phase, the whole population was at risk and ‘now is the time for everyone to stop non-essential contact with others and to stop all unnecessary travel’ (Rev, 2020). This speech marked a clear shift from seeking to mitigate the effects of the virus by protecting those most at risk to

controlling its spread. At the same time, the government abandoned its efforts to monitor the spread of the virus, abandoning community tracking and tracing contacts.

There were two main reasons for this shift: hostile scientific opinion and predictions of high death rates. Patrick Vallance's public endorsement of herd immunity elicited a strong response from the scientific community. 500 UK academics and 40 international academics wrote an open letter to the government calling for the introduction of social distancing measures (UK Scientists, 2020).

On 16 March 2020, researchers at Imperial College published a report predicting the outcome of different decisions. They predicted that if the government took no action there would probably be 510,000 additional deaths between April and August 2020 (Ferguson et al, 2020, p. 6). If the government took measures to mitigate the effects of the spread of the virus by protecting the most vulnerable, there would be 250,000 deaths (Ferguson et al, 2020, p. 16). But if the government locked down it could substantially reduce overall mortality. Policy makers did not want to be responsible for the death of 250,000 people so accepted the necessity of a lockdown. As a participant in the decision-making process noted: 'There was a collision between the science and reality' (Shipman and Wheeler, 2020).

Late March: lockdown

The shift in policy in mid-March was a recognition that COVID-19 could no longer be framed as a type of flu. While at a distance, COVID-19 had similarities to flu, close up it was clear that COVID-19 was very different. Like COVID-19, seasonal flu is spread by coughs and sneezes and personal contact and tends to affect the upper respiratory tract. Flu usually has a rapid onset and then lasts about three days and is followed by a rapid recovery. If an individual is unlucky, their recovery may be delayed by a secondary respiratory infection. In a minority of cases, this infection is so serious that it requires hospital admission or may result in death. In contrast, SARS-CoV-2, can attack any part of the respiratory system. Most infected people have a relatively mild infection

with a dry cough and fever lasting up to ten days. About 14 per cent of those infected have serious infections. In about 5 per cent of cases, the damage is so severe that the infected person needs help with breathing and may need to be placed on a respirator for extended periods (WebMD.com, 2020). In some cases, the body's immune system may overreact to the infection, creating a lethal cytokine storm. The outcome in serious cases is poor, often death or slow, limited recovery, commonly referred to as long-COVID (KCL, 2020).

Policy makers in the UK did consider using public health measures to control the virus. While there is no evidence that they discussed shutting or monitoring airports and ports, they did discuss tracing and isolating the contacts of infected individuals. The 18 February meeting of SAGE discussed the capacity of Public Health England (PHE). At the time PHE could trace the contacts of five cases a week, which involved identifying and isolating some 800 contacts. This capacity could be increased to 50 cases a week and 8,000 contacts (Cole, 2020). If and when there was evidence of sustained community transmission, the committee felt that this approach would no longer be sustainable. By 12 March, there was clear evidence of community transmission in a rapidly increasing number of cases (Cole, 2020). At this stage, efforts to identify and isolate contacts were abandoned.

By mid-March, it had become clear in the UK that the political cost of pursuing a herd immunity policy was unacceptably high. However, as COVID-19 was spreading rapidly there was too little capacity and it was too late to adopt a public health approach. The only remaining option was the lockdown of all but essential economic, social and health-related activities.

Comment

In early 2020, COVID-19 was a new disease so policy makers could not use evidence from the past outbreaks of the disease to identify and manage its risks. They had to use the next best thing: framing COVID-19 in terms of an existing disease. Policy makers in the western Pacific Rim tended to

frame COVID-19 in terms of SARS and adopt the public health responses that had worked effectively with SARS. This approach worked well and generally these countries managed to restrict the spread of and deaths from COVID-19. In the preface to this book, I noted that one of my reasons for writing it was to try and understand why policy makers in the UK delayed taking effective action. The answer is clear. The UK was well prepared for a flu or flu-like disease pandemic. COVID-19 was very different from flu and by the time policy makers in the UK realised this, it was too late to implement public health measures to stop the spread of the disease. The only option to prevent an unacceptably high death rate was a lockdown. A similar process took place in the US. The former President, Barack Obama, described the pandemic as ‘the classic example of reality biting back’ (Obama, 2020).

The risk of COVID-19

Probability, categorisation and outcomes

Risk: probability and outcome

Risk can be defined as the probability of one or more outcomes. Probability uses knowledge derived from the observation of past events to predict similar events in the future. There is a strong technical and objective reality to probability. In contrast, outcomes are more subjective and relate to personal and collective values.

The difference between probability and outcomes can be seen when individuals choose to bet on a horse race. They are taking a risk. If their horse loses, they lose their stake but if it wins then they win. The size of their winnings depends on the horse's 'odds', that is, the probability of the horse winning based on evidence from previous races. The choices individuals make depend on their personal preferences and values. If they value certainty, they will not bet. This means that they can be sure they will not lose money but they will also forego the chance of winning and the excitement of betting. If they value risk taking and the chance to make a big win, then they will back a 'long shot'.

Where choices are made on behalf of others and the outcomes affect different social groups, it is no longer just a matter of personal preference but becomes one of collective values. This can be seen in the process of triaging, a way of prioritising and allocating scarce resources. Triage can be defined as:

- a. the sorting of and allocation of treatment to patients and especially battle and disaster victims according to a

- system of priorities designed to maximize the number of survivors;
- b. the sorting of patients (as in an emergency room) according to the urgency of their need for care.

(Merriam-Webster, n.d.)

Triaging is a risk management system developed by the French military surgeon Dominique Jean Larrey to minimise deaths during the Napoleonic wars (Skandalakis et al, 2006). It involves a process of categorising and allocating resources between:

- Category 1: *No active treatment* for the seriously wounded who have a low probability of survival.
- Category 2: *Immediate treatment* for the seriously injured who have a good chance of survival.
- Category 3: *Delayed treatment* those who have minor injuries.

In triaging, resources are allocated based on the greatest benefit in terms of lives saved. Larrey described its value system as: ‘those dangerously wounded must be attended first entirely *without regard to rank or distinction* and those less severely wounded must wait until the gravely hurt have been operated and addressed’ (emphasis added, Larrey in Skandalakis et al, 2006, p. 1396). Triaging represented a shift from allocating resources on the basis of social status to one based on collective benefit.

In the COVID-19 pandemic, at times health resources were limited and collective choices had to be made. In this chapter, I will examine how these choices were made and the underlying values.

Probability, categorisation and outcomes in the COVID-19 pandemic

Identifying 'at-risk' groups

In early 2020, as the SARS-CoV-2 spread from China to other countries, policy makers became aware of the dangers it presented and the need to prepare their populations for the new disease. By February 2020, clear epidemiological evidence was emerging from China. A paper published online (The Novel Coronavirus Pneumonia Emergency Response Epidemiology Team, 2020) analysed the first 72,314 cases of COVID-19. They reported on the:

- *Severity of the illness:* The team found that most reported cases were mild; indeed, 889 cases (1.2 per cent) were asymptomatic. However, 2,087 (4.7 per cent) of the cases that tested positive were critical—had respiratory failure, septic shock, and/or multiple organ dysfunction/failure—and of these 1,023 (49 per cent) had died.
- *Severity of the illness increased with age:* While children and young people could be infected (there were 965 cases aged 0–19), they were unlikely to have a critical infection or to die. There was only one recorded death in this age group. In marked contrast, older people had more serious illness. Of the 1,408 cases aged over 80, there were 208 (14.8 per cent) deaths.
- *Impact of pre-existing illnesses:* Individuals with pre-existing illness were at risk of having severe/critical illnesses. Individuals who had no underlying illness had a 0.9 per cent case fatality rate; this increased to 5.6 per cent for patients with cancer, 6 per cent with hypertension, 6.3 per cent with chronic respiratory disease, 7.3 per cent with diabetes and 10.5 per cent with cardiovascular disease.
- *Impact of gender:* Men were more vulnerable (2.8 per cent case fatality) than women (1.7 per cent).

The Chinese data focused on the outcome of infections. It had less information on how the virus spread, that is, who was likely to be infected and where. The only indicator came from statistics on the number of health care workers infected, which suggested that hospitals played a role in the spread of the virus. Overall, 3,016 health workers had been infected but there were only five deaths as most of the health workers were younger healthier individuals (Coronavirus Team, 2020).

Similar patterns were evident in epidemiological data collected later in the pandemic. In the US, the CDC monitored deaths and their analysis of deaths up to 3 October 2020 indicated an excess death rate of 299,028 of which 198,081 could be attributed to COVID-19 (Rossen et al, 2020). The overall excess death rate was five times higher than the average annual death rate from seasonal flu. The increase in deaths was most marked amongst older people and amongst minority ethnic groups, especially Hispanics.

Risk categorisation

As the virus spread through Europe and North America in March 2020, so their respective governments issued guidance on how different sections of the population should protect themselves. This guidance reflected some but not all of the epidemiological evidence. It highlighted the vulnerability of older people, people with underlying health problems and in some countries ethnic minority groups but generally did not include men or front-line workers in the high-risk categories. Table 3.1 summarises the categorisation in the UK, the US and Canada. In each country the population was divided into three categories:

- *Individuals with a low risk* of a poor outcome if infected: the majority of the population, especially the younger and healthier individuals. These individuals were advised to protect themselves by increased social distancing.
- *Individuals with an increased risk* of a poor outcome such as older people and those with specific underlying

health problems. They were advised to take extra precautions.

- *Individuals with the highest risk* of a poor outcome: a small minority who had illnesses that suppressed their immune systems or took immune suppressant drugs. They were advised to self-isolate and shield themselves by avoiding all social contact except for essential medical care.

This risk categorisation enabled policy makers to communicate to the public the different levels of risk and the types of actions individuals should take to mitigate such risk. The categorisation differed in detail. In the US, the CDC's categorisation was more fine-grained than that in the UK and Canada. For example, the CDC drew attention to the increased risk of people with disabilities, people experiencing homelessness, and racial and ethnic minority groups and stressed the vulnerability of living in a nursing home or long-term care facility. However, policy makers in different countries were selective in the ways in which they used the evidence, excluding some at-risk groups and including others for which there was no evidence of increased risk:

- *The exclusion of people from black and minority ethnic groups (BAME)* from the high-risk category in the UK. While the BAME community was proportionally smaller in the UK than the US, it was still substantial. They also had higher incidence of underlying health problems such as diabetes and of being front-line workers in health, social care and transport;
- *The exclusion of front-line workers* from the high-risk category. Governments excluded such workers as they needed them to continue operating in hazardous settings.
- *The inclusion of pregnant women* in the high-risk category. Pregnant women were included in the high-risk category *despite the fact that there was no evidence* that they were more vulnerable than other women of their age.

Table 3.1: Official categorisation of risk groups in the UK, US and Canada

1. UK (Cabinet Office, 2020)

a. Individuals with a low risk of a poor outcome, such as being admitted to hospital or dying, if they contract the virus. This category included the younger, fitter, healthier individuals in the population. During the first lockdown they were advised to stay at or work from home and to social distance when out.

b. Individuals who were clinically vulnerable with an increased risk of a poor outcome. This category included those over 70, those with an underlying health problem who were eligible for annual vaccination against flu and pregnant women. They were advised to socially isolate and not go out if possible.

c. Individuals who were clinically extremely vulnerable with a high risk of a poor outcome. This category included individuals with specific serious health problems who received a ‘warning’ letter from the NHS. They were advised to shield themselves by avoiding all social contact except for essential medical care.

2. US (CDC, 2020c)

a. Individuals with a low level of risk of a poor outcome if they contracted the virus. This category included the younger, fitter, healthier individuals living in the community. They were advised to protect themselves by washing their hands often, avoiding close contact, wearing a face mask in public, covering coughs and sneezes and disinfecting surfaces.

b. Individuals at higher risk. This category included pregnant women, people with disabilities, people experiencing homelessness and racial and ethnic minority groups. They should be mindful of reducing the risk of getting the virus by practising social distancing, washing their hands more often, covering their coughs and sneezes, cleaning, disinfecting and laundering safely.

c. People who were at highest risk of severe illness if they contracted the virus. This category included those 65 and over, those living in a nursing home or long-term care facility, and those with underlying medical conditions, particularly if they were not well.

3. Canada (Government of Canada, 2020)

a. All Canadians were advised to reduce social contact by maintaining social distance, minimising travel, avoiding crowds, and keeping 2 metres from individuals outside their household.

b. Vulnerable or high-risk groups with increased risk of a poor outcome if infected. The elderly aged 65 and over; people with compromised immune systems and/or underlying health conditions. These individuals were advised to self-isolate and quarantine themselves by cutting off all contacts outside their households.

c. Pregnant women formed a special intermediate risk category. Pregnant women were advised to take additional precautions by staying at home as much as possible, shifting their interactions with health care professions where possible to phone or videoconferencing and avoiding unnecessary visitors to their home.

*Pregnant women as higher risk: value without probability**Pregnant women and the precautionary principle*

When lockdown was announced in the UK on 16 March, Chris Whitty, the Chief Medical Officer, indicated that there was no evidence that COVID-19 was a particular danger to pregnant women but that ‘Infections and pregnancy are not a good combination in general and that is why we have taken the very precautionary measure, whilst we find out more’ (Rev, 2020).

Epidemiological evidence in the UK confirmed that pregnant women did not have an increased probability of serious illness nor were their unborn babies at risk. The national prospective observational cohort study using the UK Obstetric Surveillance System from all 194 UK hospitals with consultant-led maternity units between 1 March and 14 April 2020 was published on 8 June 2020 (Knight et al, 2020). The study indicated that 427 pregnant women were admitted to hospital with COVID-19. The women in the study had similar rates of admission to critical care units and mortality to those of other women of reproductive age. There was some evidence that a small group of babies (2 per cent) might be infected; generally, the outcomes were reassuring.

The inclusion of all pregnant women in the high-risk category was essentially a choice based on values rather than the probability of poor outcomes. Chris Whitty stated that ‘We may in retrospect find that was an overkill but we’d rather be more cautionary [sic] now than the other way’ (Rev, 2020). It was an affirmation that the preventable death of a single pregnant woman was unacceptable. It involved a value judgement that pregnant women were both intrinsically more vulnerable and intrinsically more valued than, for example, non-pregnant women of the same age (Alaszewski and Burgess, 2007).

The impact of the high-risk categorisation

The inclusion of pregnant women in a high-risk category was a signal to these women that they should take extra measures to avoid infection. While such categorisation allowed policy makers to demonstrate their concerns, it is not clear that it

actually benefitted pregnant women. Indeed, in its immediate response to the announcement, the Royal College of Midwives urged pregnant women to keep their antenatal appointments as these were ‘essential to ensure the wellbeing of pregnant women and their babies’ (BBC, 2020a).

To date, there have been no detailed analyses of the effect of COVID-19 on pregnant women in Europe. There is some emerging evidence in the UK, mainly collected by groups campaigning for improved maternity services (Ashworth, 2020; Birthright, 2020) and Aptaclub (2020) (a club organised by Danone, a commercial baby food company). There is also some evidence from Belgium from a review by Audet (2020), a medical researcher.

In the UK and Belgium, pregnant women have experienced increased anxiety and isolation during the pandemic, as well as reduced access to a variety of services. Aptaclub’s (2020) survey of 100 pregnant women and women with young babies (aged 0–4 months) found that nearly half of those surveyed had missed or delayed a medical appointment because they were anxious about contracting the virus in hospital, and over half reported being anxious or lonely. Audet (2020) found that the pandemic had increased women’s anxieties, especially about hospitals and medical services. Pregnant women perceived hospitals as places to be avoided, as they were hotspots of COVID-19. If they did have to go into hospital, then they felt there was an ‘atmosphere of war’ as the protective equipment worn by staff prevented any intimacy. Many services were receiving phone calls from pregnant women requesting home births, which were denied ‘on the basis that home birth cannot be motivated by fear’ (Audet, 2020).

At the same time that pregnant women were experiencing increased anxiety and isolation, access to services was restricted. Birthright (2020) monitored the provision of services in the UK and noted that, while some NHS Trusts were maintaining safe and supportive services, others had suspended some services, including home births and maternity-led birth centres, restricted birth partners and visitors, reduced access to some forms of pain relief, restricted access to maternal-requested caesareans and not provided continuity of care

and support for women from BAME communities and other marginalised groups.

Ashworth (2020) commented that ‘a worrying and persistent theme has been the removal of a variety of service options, which is often referred to as being for the safety of women’, but in reality it was to protect staff. Audet (2020) noted that hospitals in Belgium adopted protocols to minimise infections, but since each hospital adopted its own measures, it created ‘a climate of distrust and confusion’. In some cases, women were offered caesarean sections that were not medically indicated, which could result in ‘obstetric violence’. Rosamund Urwin, who reflected on her own and other mothers’ experiences of being pregnant and giving birth during the pandemic, commented: ‘Pregnant women have been one of the forgotten groups in the pandemic’ (2021, p. 24).

The negative impact of the application of the precautionary principle and the high-risk categorisation of pregnant women can be seen in the guidance for COVID-19 vaccinations. The Joint Committee on Vaccination and Immunisation (JCVI) (2020b, p. 5) stated that given the lack of evidence, it did not advise vaccination during pregnancy. The government website went even further, excluding women planning to get pregnant and breastfeeding women from the vaccination programme:

You should wait to have the COVID-19 vaccine:

- if you’re pregnant – you should wait until you’ve had your baby
- if you’re breastfeeding – you should wait until you’ve stopped breastfeeding

If you have the vaccine, you should not get pregnant for at least 2 months after having the 2nd dose.

If you later find out you were pregnant when you had the COVID-19 vaccine, do not worry. The vaccine cannot give you or your baby COVID-19.

There's no evidence it's unsafe if you're pregnant or breastfeeding. But more evidence is needed before you can be offered the vaccine.

(NHS, 2020)

In the US, the CDC issued different guidance. It did not see either breast feeding or pregnancy as a contraindication for the COVID-19 vaccines though it did advise pregnant women to take care and take medical advice so they could make an informed decision based on 'current knowledge of COVID-19 vaccines/platforms with pregnancy and risk of disease' (CDC, 2020c).

There was major push-back against the NHS guidelines, especially the exclusion of breastfeeding mothers from the vaccination programme. For example, Vicky Thomas of the Hospital Infant Feeding Network argued that there was:

no evidence this vaccine would be harmful to breastfeeding mothers or their children and the risk seems to many to be minimal ... Denying women the opportunity to be protected, or alternatively forcing them to lose the health impacts of breastfeeding for themselves and their children is yet another example of the way women have been disproportionately affected by Covid-19.

(Sherwood, 2020)

In its revised advice on 30 December 2020, the JCVI altered its recommendations. It restated that there was no evidence that either of the two vaccines approved for use in the UK were harmful to pregnant women or their babies. It recommended vaccination when the risk of exposure to the virus was high or a woman had underlying health problems. To ensure pregnant women could make an informed decision, the JCVI (2020c) stated that the clinician providing the vaccination should discuss the risks and lack of safety evidence with each pregnant woman before her injection.

The varying experiences of older people during the pandemic

Like pregnant women, older people were also categorised as high or higher risk in most high-income countries. In the UK, the way in which this categorisation was used changed, reflecting different and changing policy objectives.

Older people pre-lockdown

In the early stages of the pandemic, policy makers in the UK explored the possibility of allowing the virus to spread through the community so that the population would develop herd immunity. This involved a trade-off. Fitter and younger people could continue with their economic, educational and social activities. However, older people would be at higher risk of serious illness and death if they contracted the virus. The government sought to mitigate this risk by advising older people to take measures to protect themselves.

Sunday Times journalists in their investigation into the UK government's 'herd immunity policy' were able to elicit explicit statements of the values underpinning policy, mainly from sources that wanted to remain anonymous. For example, one source told the journalists that: 'It's the intergenerational question. It is unsustainable to have people in their youth put their whole life on hold for months while the economy tanks to save a 91-year-old who would have died six months later anyway' (Shipman and Wheeler, 2020).

Policy makers were unwilling to own such values in public. For example, *The Sunday Times* reported that Dominic Cummings had justified herd immunity policy, saying 'if that means some pensioners die, too bad' (Shipman and Wheeler, 2020). This was immediately denied by the Prime Minister's office (Smyth, 2020).

In late March, the risk mitigation strategy was abandoned when researchers modelling the spread of COVID-19 indicated that such mitigation measures would save around 250,000 lives in the UK but another 250,000 mainly older people would die (Ferguson et al, 2020). Policy makers in the UK acknowledged that this was unacceptable.

Older people during the first lockdown

Lockdown started on 23 March 2020. The UK government took additional measures to protect older people, especially those living in the community. Individuals who were categorised as clinically extremely vulnerable were sent a letter from the NHS advising them to self-isolate and avoid all social contact. Arrangements were put in place to provide them with food and support.

However, older people in hospital and care homes did not have the same protection. The rising number of COVID-19 admissions to hospitals and intensive care units (ICUs) meant that there was a danger that hospitals would be overwhelmed. To ensure there were sufficient facilities, many hospitals cancelled all routine services and discharged as many patients as possible. Elderly patients were discharged to care homes without having COVID-19 tests, enabling the virus to spread through care homes. A BBC documentary on the experience of care homes in the first wave estimated that in the UK over 25,000 elderly patients were discharged from hospital to care homes and as many three-quarters had not been tested for COVID-19 (BBC, 2020b). *The Sunday Times* Insight Team calculated that during the first six months of the pandemic there were 59,000 excess deaths and 25,000 were in care homes (Insight, 2020, p. 7).

It became clear in early April that admissions to hospital and ICUs were rising rapidly. The British Medical Association, the UK's doctors' professional association, provided guidance on the ways in which doctors should ration services. The BMA recommended triaging so that 'younger, healthier people [were] given priority over older people and ... those with an underlying illness ...' (Campbell et al, 2020).

Chris Whitty, the Chief Medical Officer, commissioned an 'ethical' tool to help doctors decide who should receive intensive treatment (Insight, 2020). The tool categorised and scored patients on three criteria: age, clinical frailty and comorbidity. Patients with a score of over 8 were not considered suitable for ICU treatment. As patients over 80 were given a score of 9, they were effectively excluded from ICU care. The judgement was made that resources would be better used for other patients. This decision-making tool

was never formally adopted though it appears to have been distributed in the NHS and used to inform decision making (Insight, 2020). When information about the categorisation and its use became public, policy makers denied its existence and distanced themselves from it.

Older people and allocating vaccines: November 2020

The development and approval of COVID-19 vaccines in November 2020 provided the government with an opportunity to show that it valued older people—they were given top priority in the queue for the new vaccines.

Comment

While older people have been categorised as being at risk of having serious illness or dying if they contract COVID-19, the precise significance of such categorisation changed with changing policy response to the pandemic. In the UK in the pre-lockdown phase, this high-risk categorisation was a way of minimising the overall mortality rate and pressure on the NHS. This changed with the lockdown at the end of March 2020. The government indicated that it valued older people by providing them with support and protection in the community. However, in hospitals, the discharge of older people to care homes without COVID-19 tests plus the informal adoption of triaging systems indicated a lower valuation of older people. The approval and distribution of COVID-19 vaccines has given the government an opportunity to show that it does indeed value older people.

Case study: deciding on priorities for the COVID-19 vaccine

As various vaccine trials neared completion in November 2020, policy makers started making choices about who should be prioritised for vaccines. These decisions were informed by risk but different countries have adopted different processes and have chosen different priorities.

Approaches and choices: Russia, France and the UK

Russia

Russia developed, approved and distributed its own vaccine, Sputnik V. While Russia has adopted some of the features of western democratic capitalism, it still retains many of the institutions and values of the Soviet era. The decisions about allocation of the vaccine were made centrally without public debate and announced by the President, Vladimir Putin (Litvinova, 2020). Workers, especially those most exposed to the virus through their work in health, social care and education, were given top priority. Older people were excluded from the programme: no-one over 60 was to receive the vaccine (Soldatkin, 2020).

France

In France, planning for vaccination started in July 2020 with the publication of an advisory scientific advisory committee (CARE, 2020) report. The committee reviewed the science of the vaccine and identified a top tier of priorities:

- *Groups at risk because of their work* (c 6.8 million) of whom 1.8 million were the highest priority. The highest priority group included front-line health care staff and those in contact with vulnerable populations. The remainder included those in direct contact with public: workers in banks, restaurants, and those working in confined spaces, abattoir workers and taxi drivers.
- *Groups at risk because of their age or state of health* (c. 23 million). Of these nearly 13.5 million were 65 or over with 6.25 million 75 or over, 4 million were under 65 but had underlying health problems, and 10 million were obese.
- *Individuals living in situations of high vulnerability* (c 250,000), for example, living in hostels or squats.

The committee also identified a second tier of priorities (c 5 million):

- *Individuals living in overseas departments* in the French Caribbean and Pacific islands who had limited access to health care facilities (2.8 million).
- *Individuals living in institutions* where the risk of transmission was high (910,000).
- *Individuals in strategic jobs* such as the police, firefighter and the military (600,000).

These recommendations were made to the national government. The government decided to consult the public to assess public preferences and to avoid previous low take-up of vaccines. This was time consuming but enabled the government to ‘understand what people value’ (Roope et al, 2020). The final guidelines included those working in high-risk jobs, including health workers, shop workers, school staff, transport staff such as taxi drivers, hospitality workers and abattoir staff, in the top-priority group (Roope et al, 2020).

The UK

In the UK, there was a centralised system of decision making and no public consultation. The initial proposal for vaccination priorities was made by the Joint Committee on Vaccine and Immunisation (JCVI). This is a committee of scientists with specialist knowledge about the development of vaccines and their distribution (JCVI, 2020b). Most of the members (14/16) were experts in respiratory diseases, virology or vaccine development. The committee commissioned a paper on prioritisation from a group of public health experts (JCVI, 2020a, p. 15).

The JCVI made recommendations about which groups should receive COVID-19 vaccines when they became available. In September 2020, it published its first version of the priority list. This had 11 groups with top priority being older adults in care homes plus care home workers, followed by those 80 and over plus health care workers with the remaining elderly population in five-year age bands down to those between 50 and 54 years old. After it had received the paper from public health experts in November, the committee revised its priorities (JCVI, 2020a). Older adults who were residents in care homes and care home staff remained top

priority. ‘Clinically extremely vulnerable individuals’ were included in priority group 4, alongside individuals aged 70 to 74 (JCVI, 2020a, p. 8). There does not appear to have been a formal government response to the JCVI recommendations but the roll-out of the vaccine programme started in early December 2020 and in England, the first vaccines went to patients over 80 who were already in hospital and high-risk NHS staff (Rogers, 2020).

What were the options and what was the rationale for vaccination priorities in the UK?

In its report, the JCVI identified three possible approaches to prioritising COVID-19 vaccines, each linked to a different outcome. The vaccination programme could be used to:

- *distribute the vaccine as quickly as possible* using procedures established for seasonal flu vaccination;
- *achieve social justice* by prioritising communities experiencing social deprivation and relatively high levels of infection and deaths;
- *reduce the transmission* of the virus: this can be seen as the public health strategy.

The JCVI chose the first option (JCVI, 2020a).

Distributing the vaccine as rapidly as possible

The JCVI justified its priority list in pragmatic terms, noting that: ‘Simple age-based programmes are usually easier to deliver and therefore achieve higher uptake including in the highest risk groups’ (JCVI, 2020a, p. 16).

Underpinning the JCVI prioritisation was the utilitarian principle that a programme prioritising older people, vulnerable people and those that cared for them would save the most lives and create the maximum benefit for society. This was one of the ethical principles used by the public health experts advising the committee:

Prioritisation should: Maximise benefit and reduce harm.
Scientific evidence ... allows us to focus on populations that

are at highest risk of infection, hospitalisation, and death from COVID-19. It is important that these population groups are the first to receive the vaccine, as they are the most likely to benefit from them.

(JCVI, 2020a, p. 17)

Contributing to social justice

COVID-19 has had a disproportionate impact on deprived and vulnerable communities in the UK and elsewhere. In the UK and US, COVID-19 has disproportionately impacted on black and other ethnic minority groups (Scott and Animashuan, 2020; Elwell-Sutton et al, 2020). The JCVI acknowledged this evidence:

There is clear evidence that certain Black, Asian and minority ethnic (BAME) groups have higher rates of infection, and higher rates of serious disease, morbidity and mortality... It is also clear that societal factors, such as occupation, household size, deprivation, and access to health care can increase susceptibility to COVID-19 and worsen outcomes following infection. These facts are playing a large role in the inequalities being seen with COVID-19.

(JCVI, 2020a, p. 6)

However, the JCVI did not identify either BAME groups or those living in deprived areas as priority groups. It suggested that the vulnerability of BAME groups was mostly a product of underlying health conditions and therefore including individuals with underlying health problems in priority group 4 would benefit many BAME individuals. Furthermore, the public health paper suggested that overt 'positive discrimination' could result in increased stigmatising of BAME and other communities: 'It is paramount therefore that prioritisation and roll-out of the vaccine does not reinforce these negative stereotypes and further increase experiences of stigma and discrimination' (JCVI, 2020a, p. 18).

On the basis of such logic, no positive discrimination programme would ever take place. The JCVI added a rider to its recommendation to the effect that the bodies

responsible for the delivery of the vaccine programme should ‘work together to ensure that inequalities are identified and addressed in implementation’ (JCVI, 2020a, p. 6).

Reducing the rate of transmission

The JCVI identified targeting transmission as one of the possible vaccination strategies. It argued that there was currently no ‘good evidence on the effects of vaccination on transmission’ (JCVI, 2020a, p. 2). The committee indicated that it had received evidence that: ‘In order to interrupt transmission, mathematical modelling indicates that we would need to vaccinate a large proportion of the population with a vaccine which is highly effective at preventing infection (transmission)’ (JCVI, 2020a, p. 2).

It was clear that using the vaccine to completely stop the transmission of the virus would be challenging and take time. The precise level of population immunity needed for immunity depended on how contagious the virus was and estimates varied from 50 to 90 per cent (D’Souza and Dowdy, 2020). Given the optimistic estimate that 25 million people could be vaccinated in a year, it would take well over a year to achieve the lowest level of collective protection in the UK.

However, there was an alternative approach: the vaccine could be used to reduce infection, especially by targeting areas or groups with high transmission rates. NHS Track and Trace piloted this approach using mass testing in a locality of high transmission, Liverpool, with mixed results (Manthorpe, 2020). Targeting younger people would be more effective. In the winter of 2020, there was increasing evidence that younger people, especially those of secondary school age, were playing a major role in transmitting the virus. Office for National Statistics (ONS) data in the UK in the second wave (ONS, 2020) showed that infection rates amongst older people had risen a bit but remained about 0.5 per cent whereas those for secondary school children had risen from 1 per cent to over 2 per cent.

Targeting older people is unlikely to break the chain of transmission. In the UK, older people inadvertently played a role in spreading the virus during the first wave when many older people were infected in hospitals and then discharged

into the community and care homes. However, in the later stages of the pandemic most older people either self-isolated or reduced social interactions so were highly unlikely to spread the virus. Targeting younger people, especially those at secondary schools, would help break the chain of transmission. Indeed, NHS Track and Trace, which was tasked with helping to control the rate of reproduction to reduce the spread of the infection and save lives (Gov.UK, 2020), was due to start a programme of testing in secondary schools at the start of 2021; this was cancelled when school reopening was cancelled. Testing and tracing was a blunt instrument in controlling COVID-19. Vaccination offered a more effective tool for disrupting transmission so a link between Test and Trace and vaccinations in secondary schools could have provided an opportunity to make a major difference in the course of the pandemic.

At the Downing Street press conference on 5 January 2021, Andy Woodcock, a journalist from the *Independent* newspaper, asked: ‘Why is it that teachers and pupils are not on the priority list for vaccination?’ (Rev, 2021). Chris Whitty, the Chief Medical Officer, replied that children was less likely to be affected and die, that the consensus of expert opinion was that those most at risk should get the vaccine first and the current vaccines were not approved for use on those under 18 (Rev, 2021). The lack of approval was a product of the design of the clinical trials which, like most trials, focused on those aged 18 to 64. 90.3 per cent of those taking part in the AstraZeneca drug trial were aged 18 to 64. While the vaccine has been approved for older people on this limited data, the UK regulatory body noted that: ‘Efficacy and safety data are currently limited in individuals ≥ 65 years of age’ (Gov.UK, 2021). Such limitations did not stop the roll-out of vaccines to those over 80.

Risk implications

The JCVI prioritisation reflects the way in which risk can be used to disguise value judgements. The committee’s prioritisation involved an implicit value judgement that the lives and wellbeing of older people should be given priority over those of younger people and those from deprived

communities. The group advising the committee identified three ethical principles that should inform the priorities:

- maximisation of benefit and reduction of harm
- promotion of transparency and fairness
- mitigation of health inequalities

It was not clear that the system recommended by the JCVI met the second two criteria. In particular, it was difficult to see in the absence of public consultation, how its recommendations promoted transparency. In the collective relief that vaccines offered hope for an end of the pandemic, there was very little public debate about these priorities. One of the few critical commentaries came from Alexis Paton, an academic with an interest in medical ethics, who argued that priority should be given to the most vulnerable in society and vulnerability should not be judged just in terms of age and underlying illness but should include social factors such as deprivation. She noted that such choices reflected social values and ‘how we value or do not value, certain members of [society]’ (Paton, 2020, p. 9).

Comment

Risk involves assessing the probability of different outcomes and judging the relative values of these outcomes. During the pandemic, policy makers were comfortable with the technicalities of risk, acknowledging the probability of infection and death. They were far less comfortable acknowledging the difficult choices that had to be made and how these involved valuing and distributing benefits and illness between different social groups. Chris Whitty observed that deaths during pandemics were inevitable but deciding what level was tolerable should not be an decision for experts but ‘that’s a political decision. That’s a societal decision’ (Rev, 2021). However, as politicians are unwilling to make such decisions and there are no societal mechanisms for making them, by default such decisions are made by experts.

Communicating risk

Public health messaging

Risk issue: the challenge of communication

Public health campaigns are designed to make the public aware of specific risks and change collective behaviour to minimise such risks. These campaigns often use emotions, such as anxiety, fear and guilt, to foreground and attract public attention to the specific risk and the associated collective behavioural change needed to mitigate it. This approach has underpinned campaigns such as the UK's regular 'don't drink and drive' campaigns (The Telegraph, 2020) and was evident in the 1980s with the 'don't die of ignorance' HIV/AIDS campaign (Burgess, 2017).

Achieving the right balance

Public messaging needs to achieve a balance between creating enough anxiety to engender the desired change in behaviour, but not too much as this may result in undesirable changes such as panic. Quigley (2005) examined the ways in which governments in the US and UK sought to manage one major risk, the so-called Millennium Bug: the danger that at midnight on 1 January 2000, computer systems would crash as many used a two-digit system that would not be able to differentiate 2000 from 1900. Both governments engaged in public awareness campaigns but these were so successful that by the end of 1998 the US government was seeking to reduce public anxiety and avoid panic reactions such as hoarding (Quigley, 2005, p. 288).

Effective targeting

The specific concerns of policy makers and health promoters need to be converted into messages that can be understood and can be acted on by their target groups (Alaszewski and Horlick-Jones, 2003). The response of individuals and groups to such risk information is influenced by a variety of factors, including:

- the extent to which the source of the information is trusted
- the relevance of the information for everyday life and decision making
- the relation to other perceived risks
- the fit with previous knowledge and experience
- the difficulty and importance of the choices and decisions.

(Alaszewski and Horlick-Jones, 2003)

Jolanda Jetten, Stephen Reicher and their colleagues (2020) have argued that the purpose of risk communication should not be to punish or force individuals to comply with government diktats but ‘The role of governments should be to support and enlist this public resilience’ (Jetten et al, 2020, p. 14). In the context of COVID-19, the aim of communication should be to build a collective response to COVID-19 based on shared understanding of its risks and how they can be mitigated.

Communicating the public health message during the pandemic*Developing and communicating a consistent risk message*

The challenge of communicating the risks of COVID-19 was affected by the ways in which it was initially framed. In those countries in which it was initially framed as a SARS or Ebola-like disease, there was no need to change and adjust the public health message. From the start, the new virus was presented as a major danger and one which required significant changes in behaviour.

Taiwan had a rapid response to COVID-19 that included consistent risk messaging. Following the initial identification of COVID-19, the government set up the Central Epidemic Command Centre within the National Health Command Centre to provide a centre for the collection and dissemination of information about COVID-19. The aim was to keep everyone in Taiwan well informed, enabling a community-wide response to the virus. The messaging from the government explained the travel restrictions and outlined social distancing rules and personal hygiene recommendations such as the universal use of face masks (Chen, 2020). The Taiwanese authorities backed up these broad messages with specific information designed to help residents follow the guidelines. For example, to help residents access supplies of face masks, the Taiwanese government released real-time information of mask stocks so suppliers could use mobile phone map apps to provide up-to-date information about the make and availability of masks and safe pick-up locations (Hung, 2020).

Japan, like Taiwan, is also on the western Pacific Rim but its response to COVID-19 was relatively muted and the danger was initially downplayed. In March 2020, there was no evidence of community transmission but there were COVID-19 clusters. At this stage, the government warned the population of the danger and advised them to change behaviours to reduce the risk of spread. On 26 March, the Government Expert Group on COVID-19 indicated that ‘there was a “high probability of the expansion of infections,” in light of the increase in infection cases entering from overseas’ (Expert Meeting, 2020, p. 1). This expert group commended the unique ‘Japan model’ that focused on ‘modifying the behaviour of citizens and early detecting and responding to clusters’ (Expert Meeting, 2020, p. 5). The Japan Model was based on engaging citizens and encouraging them to change their behaviour to avoid infection. The government encouraged people to modify their behaviours:

to avoid ‘places where the three conditions are met simultaneously’ (‘3C’ such as closed spaces, crowded places, and close-contact settings) ... we urge our citizens

to avoid places that meet the 3Cs, even though it is not mandated by law, and to play their roles as members of society to protect themselves and the society as a whole.

(Expert Meeting, 2020, pp. 3 and 5)

This low-key approach to COVID-19 and the plea for cooperation from the Japanese people was evident in a speech made by Shinzo Abe on 2 March. He said: ‘We are aware we are causing trouble for the Japanese people [by asking for their cooperation in social distancing] but we also humbly ask cooperation from each and every person’ (McGrath, 2020).

While the relatively low-key response of Shinzo Abe and the Japanese government to COVID-19 has been criticised in Japan (McGrath, 2020), the country was relatively successful in controlling infection and death rates. At the time of writing (6 October 2020), Japan was in the intermediate group of countries in terms of infections (86,027 confirmed cases) and deaths (1,602 or 1.27 per 100,000 compared to the UK’s 42,459 or 63.86 per 100,000). The initial success of Japan in containing the virus seemed to relate to the receptiveness of the Japanese to the social distancing messages. Elements of traditional Japanese culture were well suited to social distancing. For example, the Japanese were aware of and sought to protect the symbolic boundaries of both the household and the body. It is conventional in Japan to protect the household by removing outside shoes when crossing the threshold. Indeed, inviting visitors into the house is unusual. Similarly, attention is paid to protecting the entry to the body, the mouth, and wearing masks is normal and socially acceptable (Alaszewska and Alaszewski, 2015).

Mixed messages: public health messaging in the UK and US

While risk messaging in countries that initially framed COVID-19 as SARS-like was relatively consistent, in countries that initially framed COVID-19 as flu-like, such as the UK and US, there was a major shift in messaging as evidence of community transmission and high death rates became evident. In some countries such as the US, the messaging was

further undermined by tensions between populist politicians and public health experts.

Messaging in the UK

In early March, there was a debate in UK government about COVID-19 risk and how best to manage it. One option was to allow the virus to spread through the population while protecting the vulnerable groups. On 10 March, Boris Johnson talked about the options in public:

one of the theories is, that perhaps you could take it on the chin, take it all in one go and allow the disease, as it were, to move through the population, without taking as many draconian measures. I think we need to strike a balance ... I think it would be better if we take all the measures that we can now to stop the peak of the disease being as difficult for the NHS as it might be, I think there are things that we may be able to do.

(Johnson in Full Fact, 2020)

The message was that everyone, except for those who were vulnerable to the virus, should make up their own minds about the risks but should carry on as normally as possible irrespective of expert advice to the contrary. For example, on 3 March, the government's advisory committee on behaviour (SPI-B) agreed 'that government should advise against greetings such as shaking hands and hugging, given existing evidence about the importance of hand hygiene' (Woodward, 2020b). Boris Johnson continued shaking hands in public until 9 March (Woodward, 2020b).

When UK government policy shifted from herd immunity to lockdown in mid-March, there had to be a major shift in messaging. Personal behaviour was no longer to be based on personal risk assessment. In his statement on 16 March announcing lockdown, Boris Johnson asked the public to trust his judgement that it was the right moment to change policy:

And if you ask, 'Well, why are we doing this now? Why now? Why not earlier or later? Why bring in this very draconian

measure,’ the answer is that we are asking people to do something that is difficult and disruptive of their lives. And the right moment, as we’ve always said, is to do it when it is most effective, when we think it can make the biggest difference to slowing the spread of the disease, reducing the number of victims, reducing the number of fatalities.

(Rev, 2020)

The effectiveness of this ‘trust-me’ message depended on the public perception of the trustworthiness of the messenger. The trustworthiness of Boris Johnson was undermined by perceptions that during the various Brexit campaigns he had made false promises and misleading statements. It was also undermined by his previous reassurances that COVID-19 was not a threat to most people.

The message was not linked to a clear decision framework that provided simple and easy-to-grasp signals. Instead, policy makers referred to various indicators such as R_0 (rate of transmission), infection rates, hospital and ICU admissions and death rates. These indicators were used to justify the initial lockdown at the end of March and its easing in June but when a second set of restrictions became necessary in late summer in specific parts of the UK, there were communication problems. In late July, the Prime Minister announced increased social distancing measures in the north based on ONS data indicating increased levels of infection. This evidence was disputed; for example, Prof Carl Heneghan suggested the rise was a product of skewed data and that ‘the northern lockdown was a rash decision’ (Knapton, 2020). To simplify the messaging in England, policy makers used a three-tier alert system with limited restrictions for those living in Tier 1 and severe restrictions for those living in Tier 3. This system failed to reduce infection levels, resulting in a second England-wide lockdown in November 2020 followed by a new four-tier system of restrictions. This in turn failed to control the virus, leading to a third national lockdown in January 2021 (Rev, 2021).

The difficulties of communicating risk and ensuring compliance with safety measures was increased by the perception that policy makers were asking citizens to obey

rules that they themselves ignored with impunity. The most commented-on example of such breaches occurred in May 2020 when the Prime Minister's special advisor, Dominic Cummings, flouted lockdown measures by making a 300-mile trip to Durham plus a day trip to Barnard Castle (Rutter, 2020, pp. 7–8).

Mixed messaging in the US

In the US, the relationship between the President and his scientific advisers was tense and fractious. During the early stages of the pandemic, the President did accept some expert advice. For example, Woodward documented (2020a, pp. 280–6) the ways in which the key policy shift from herd immunity to lockdown was shaped by discussions between experts, the President and his inner circle. In public, the President claimed credit for the decision. At a meeting of the coronavirus task force on 17 March 2020, Donald Trump claimed that 'I've always known this is a—this is real—this is a pandemic. I've felt this is a pandemic long before it was called a pandemic' (Woodward, 2020a, pp. 285–286).

As the pandemic developed in early summer 2020, tensions between the President and his expert advisers became more visible. There were differences over: treatment regimes, with the President advocating unproven treatments such as hydrochloroquine; public health messaging about wearing face masks; and the ending of the first lockdown. On 17 April 2020, without consulting a key public health expert, Anthony Fauci, in the middle of a supposed 30-day extension of the US lockdown, Trump tweeted 'Liberate Minnesota', 'Liberate Michigan' and 'Liberate Virginia' (Woodward, 2020a, p. 353). The President marginalised Fauci, appointing a press secretary who limited Fauci's television appearances. While he did occasionally contradict Trump in public, Fauci commented that if the President made incorrect statements in public, 'I can't jump in front of the microphone and push him down' (Woodward, 2020a, p. 353).

The relationship between Donald Trump and scientists and public health experts deteriorated to such an extent that it became open conflict. *Scientific American*, which promotes

non-partisan science, in October 2020 published an Editorial endorsing Joe Biden:

The evidence and the science show that Donald Trump has badly damaged the U.S. and its people—because he rejects evidence and science. The most devastating example is his dishonest and inept response to the COVID-19 pandemic, which cost more than 190,000 Americans their lives by the middle of September.

(Scientific American, 2020)

Case study: Engendering and maintaining trust through effective risk communication in New Zealand

Initial communication of the risk of COVID-19

In New Zealand, the initial public health message was cautious. On 28 January 2020, the government issued the first public assessment of risk noting that: ‘while the risk of spread to New Zealand is low, the current outbreak in China of novel coronavirus is capable of being transmitted between human beings and poses a potentially serious risk to public health’ (New Zealand Cabinet Office, 2020).

However, to minimise the risk of COVID-19 spreading to New Zealand, the government decided to ‘address the public health risk of transmission of the novel coronavirus in New Zealand’. It categorised ‘the novel coronavirus capable of causing severe respiratory illness’ as a notifiable disease which could be managed using existing powers to control infectious diseases (New Zealand Cabinet Office, 2020).

Using a risk framework to communicate risk

When it became clear in March that the virus had reached New Zealand, the government used a system of Alert Levels to communicate the overall risk to the public and the actions the government wanted individuals and organisations to take

to mitigate the risks of COVID-19 (Wilson, 2020) (see Table 4.1. It provided:

- *A rationale for decisions made in the present.* The framework was introduced on Saturday 21 March 2020, at the time that New Zealand was moving into lockdown. On Monday 23 March, Jacinda Ardern, the Prime Minister, announced national lockdown and she used the risk framework as the rationale for her decision:

On Saturday I announced a COVID-19 alert level system and placed New Zealand at Alert Level 2... We are fortunate to still be some way behind the majority of overseas countries in terms of cases, but the trajectory is clear. Act now, or risk the virus taking hold as it has elsewhere. We currently have 102 cases. But so did Italy once. Now the virus has overwhelmed their health system and hundreds of people are dying every day... we have 2 cases where public health officials have been unable to find how they came in contact with COVID-19. On that basis, we now consider that there is transmission within our communities ... That's why Cabinet met today and agreed that, effective immediately, we will move to Alert Level 3 nationwide. After 48 hours, the time required to ensure essential services are in place, we will move to Level 4.

(Ardern, 2020a)

- *A way of mapping and providing hope for the future.* As New Zealand moved into lockdown, there was a clear way out. In her speech announcing the lockdown, Ardern provided a timeframe for moving down from Level 4:

If we flush out the cases we already have and see transmission slow, we will potentially be able to move areas out of Level 4 over time... If we after those 4 weeks we have been successful [in stopping community transmission], we hope

we will be able to ease up on restrictions. If we haven't, we'll find ourselves living with them for longer.

(Ardern, 2020a)

- *A way of reflecting on the past.* Policy makers could use the Alert System to reflect on the success of actions and warnings. On 8 June, Ardern reflected on the success of the lockdown:

A lot has happened since we were first at Alert Level 2 in late March, prior to entering Alert Level 4. We took strong early action against the spread of COVID-19, closing the borders to passengers, moving up Alert Levels, and imposing a lock down when we had reported only a small number of cases. We saw high compliance with the rules by New Zealanders and high levels of public support for our actions despite their social, economic and fiscal costs. And our collective efforts have paid off. For now, we can have high confidence that we have eliminated COVID-19 within New Zealand, ie that there are no more infected people in our population.

(Ardern, 2020b)

- *A clear rationale for differential responses to the virus in different parts of the country.* The New Zealand Government (2020b) responded to a cluster of cases in the capital, Auckland, in August 2020 by retaining a higher Alert Level in the area. Following a period of 102 days with no cases, four members of a family tested positive and the infection spread to another 159 individuals and two men died (Ward, 2020).

The Alert Framework provided an effective base for public health messaging and formed the basis of simple slogans: 'Stay home, stay safe, and be kind' and 'United against COVID-19'. Such messaging linked risk mitigation (stay safe) to reinforcing behaviours designed to protect (stay home) and support

the community (be kind) (Goodman, 2020). In her speech announcing the lockdown, Jacinda Ardern stressed the collective benefits of individuals behavioural change. By using the pronoun ‘we’ rather than ‘you’, she represented lockdown as a joint and collective enterprise (Ardern, 2020a).

In appealing to the altruism of the New Zealand population and asking them to make collective sacrifices for the common good, Ardern and her government were asking for the population’s trust. There were to be no exceptions: those connected with the government had to follow the same rules as the rest of the population. In New Zealand, this aspect of trust was undermined by the behaviour of the health minister who twice breached the lockdown rules. Initially, he apologised, was demoted and publicly criticised by Arden (Roy, 2020). Following continued public criticism, he resigned in July 2020 (BBC, 2020c).

Risk implications

New Zealand managed to control the virus. While there were occasional clusters and some deaths, at the time of writing (7 October 2020) New Zealand was virus free. The risk messaging clearly played a role in this. In the early stages of the pandemic, the government clearly warned the population of the dangers. It then developed and used a risk framework to justify the introduction of social distancing measures and then to relax them. The government was able to present its strategy as fair, just and inclusive through its ‘be kind’ message and by punishing ministers who breached the guidelines. In retrospect, Jacinda Ardern may regret that she did not sack her health minister earlier. This would have sent a clearer message that ‘we are all in this together’.

Comment

There were challenges in communicating the risk of COVID-19 to the population. In the early stages of the pandemic, there were major uncertainties about the new virus, how virulent it was, how it spread and how dangerous

Table 4.1: New Zealand Alert System

	Alert Level 1: Prepare	Alert Level 2: Reduce	Alert Level 3: Restrict	Alert Level 4: Lockdown
Risk Assessment	COVID-19 is uncontrolled overseas	The disease is contained, but the risk of community transmission remains	High risk: the disease is not contained	Likely: the disease is not contained
	Sporadic imported cases	Limited community transmission could be occurring	Multiple cases of community transmission occurring	Sustained and intensive community transmission is occurring
	Isolated local transmission could be occurring in New Zealand	Active clusters in more than 1 region	Multiple active clusters in multiple regions	Widespread outbreaks
Individuals and collective actions	Border entry measures to minimise risk of importing COVID-19 cases	People can connect with friends and family, and socialise in groups of up to 100	People instructed to stay home in their bubble other than for essential personal movement, work school or recreation	People instructed to stay at home in their bubble other than for essential personal movement
	Intensive testing for COVID-19	Keep physical distancing of 2 metres from people. Keep 1 metre physical distancing in workplaces	Physical distancing of 2 metres outside home, or 1 metre in controlled environments	Safe recreational activity is allowed in local area

Alert Level 1: Prepare	Alert Level 2: Reduce	Alert Level 3: Restrict	Alert Level 4: Lockdown
Rapid contact tracing of any positive case	No more than 100 people at gatherings	People legally must stay within their immediate household bubble, but can expand this to connect with close family/whānau, caregivers, or to support isolated people	Travel is severely limited
Self-isolation and quarantine required	Businesses can open to the public if following public health guidance	Schools, years 1 to 10, and Early Childhood Education centres can safely open, but will have limited capacity	All gatherings cancelled and all public venues closed
Schools and workplaces open, and legally must operate safely	Hospitality businesses must keep groups of customers separated, seated, and served by a single person	People legally must work from home unless that is not possible	Businesses closed except for essential services. For example, supermarkets, pharmacies, clinics, petrol stations and lifeline utilities
No restrictions on personal movement but people are encouraged to maintain a record of where they have been	Sport and recreation activities are allowed, subject to conditions on gatherings	Businesses cannot offer services that involve close personal contact, unless it is a supermarket, pharmacy, petrol station ... or it is an emergency or critical situation	Educational facilities closed

Alert Level 1: Prepare	Alert Level 2: Reduce	Alert Level 3: Restrict	Alert Level 4: Lockdown
No restrictions on gatherings but organisers encouraged to maintain records to enable contact tracing	Public venues can open if they comply with public health measures	Other businesses can open premises, but cannot physically interact with customers. Low-risk local recreation activities are allowed	Rationing of supplies and requisitioning of facilities possible
Stay home if you're sick; report flu-like symptoms	Event facilities, including cinemas, stadiums, concert venues and casinos can have more than 100 people at a time	Low-risk local recreation activities are allowed	Reprioritisation of healthcare services

(Source: New Zealand Government, 2020a; some of the prescribed actions have been shortened)

it was. Those countries that initially framed COVID-19 as a dangerous SARS- or Ebola-like disease that was both highly contagious and potentially lethal not only provided early warnings to their populations but could also be more consistent in their messaging. In contrast, those countries that initially framed COVID-19 as a milder flu-like disease had a greater challenge. Initially, they reassured their populations that there was no great danger. But as the disease spread and it became clear that it was not only highly contagious but also dangerous, especially for vulnerable individuals, they had to change the message.

During the pandemic, governments had to meet the challenge of communicating complex scientific and epidemiological concepts in such a way that they could be understood and accepted by the population and result in behavioural changes that limited or stopped the spread of the

virus. In different ways and for rather different reasons, Taiwan, Japan and New Zealand managed to do this successfully. In the UK and US, the messaging was undermined by the lack of a clear risk framework, a failure to punish leaders or their followers for breaches of the rules, and tensions between leaders and the scientific community. In New Zealand, surveys indicated that trust in the government was high, especially during the first wave (91 per cent trusted the government to manage the pandemic) though it did decline to 82 per cent in the summer, probably reflecting the impact of renewed clusters of the virus (NZ Herald, 2020). In the UK, a survey suggests that 57 per cent of those surveyed did not trust the government to control the spread of COVID-19 as the government's response was confused and inconsistent (Sky News, 2020).

Stephen Reicher, one of the authors of *Together Apart: The Psychology of Covid-19* (Jetten et al, 2020), in a blog publicising the book, identified five criteria for a successful communication strategy:

- be open and honest
- respect the public
- ensure equity, so everyone is treated the same
- be consistent
- make clear 'we are all in it together'.

(Social Science Space, 2020)

Reicher made it clear that the UK's strategy failed all five tests. In contrast, the New Zealand strategy was more successful in all aspects.

Pandemic narratives

Representing risk through numbers or personal stories

Pandemics and risk narratives

The media and representations of risk

In modern global societies, events happening in distant places can affect our lives in unexpected ways and we gain knowledge about such events from various media. Towards the end of 2019, a new virus spread in the Chinese city of Wuhan and the first reports were on social media; for example, Dr Li Wenliang's message on a Chinese chatroom on 30 December 2019 about the quarantining of SARS cases alerted infectious disease specialists worldwide that there was a new virus (Honigsbaum, 2020, pp. 261–3).

As Greg Philo and his colleagues at the Glasgow Media Group (1996) have observed, the mass media play a key role in shaping representations and understanding of risk. In a study of the media representation of mental illness, they found that individuals gained most of their understanding of the dangers and risk of mental illness from media representations. When such media representations clashed with their own personal experiences, individuals tended to accept the media representations *even if they knew they were fictional*, for example in television soap operas.

Representing risk through a narrative matrix

In democratic societies, the mass media is a key source of information. The earliest newspapers were published in the 17th century, The *Oxford Gazette*, first published in 1665, was one of the first regularly published newspaper (Mairal,

2011, p. 68). Mairal argues that the modern reporting of risk started in the 18th century with accounts of natural disasters and pandemics. These marked the shift ‘from the attribution of disaster to divine wrath to its treatment as a public catastrophe’ (Mairal, 2011, p. 69).

One of the pioneers of modern journalism was Daniel Defoe. In 1722, he published a fictional ‘eye-witness’ account of the 1665 Plague of London. He wanted to warn Londoners of dangers of another such pandemic. In his account, Defoe combined ‘factual’ evidence with the subjective accounts of his eye-witness. The ‘factual’ reporting mainly took the form of regular recording of the weekly number of deaths (burials) in each London parish:

The usual number of burials within the bills of mortality for a week was from about 240 or thereabouts to 300. The last was esteemed a pretty high bill; but after this we found the bills successively increasing as follows:—

	Buried	Increased
December the 20th to the 27th	291 ...	
" " 27th " 3rd January	349	58
January the 3rd " 10th "	394	45
" " 10th " 17th "	415	21
" " 17th " 24th "	474	59

This last bill was really frightful, being a higher number than had been known to have been buried in one week since the preceding visitation [of the Plague] of 1656.
(Defoe, 2001)

Alongside this ‘factual’ reporting was an ‘eye-witness’ account of events. In the second week of June, the fictional eye-witness made the following observations:

at the other end of the town their consternation was very great: and the richer sort of people, especially the nobility and gentry from the west part of the city, thronged out of town with their families and servants in an unusual manner;

and this was more particularly seen in Whitechappel; that is to say, the Broad Street where I lived; indeed, nothing was to be seen but waggons and carts, with goods, women, servants, children, &c.; coaches filled with people of the better sort and horsemen attending them, and all hurrying away.

(Defoe, 2001)

Defoe's fictional eye-witness wrote the following commentary on these observations:

This was a very terrible and melancholy thing to see, and as it was a sight which I could not but look on from morning to night (for indeed there was nothing else of moment to be seen), it filled me with very serious thoughts of the misery that was coming upon the city, and the unhappy condition of those that would be left in it.

(Defoe, 2001)

Defoe's combination of the technical factual information with subjective observations created a narrative matrix in which the eye-witness's personal and emotional response and (moral) judgements enabled readers to make sense of the numbers and the scientific and factual evidence (Mairal, 2011, p. 69).

Albert Camus (1960), in his fictional account of an outbreak of bubonic plague in the 1940s in Oran, Algeria, used Defoe's narrative matrix. His fictional account first published in 1947 drew on 'eye-witnesses' and documents, and combined factual observation with personal reflection. One of his main protagonists, Dr Bernaud Rieux, started his account with a description of the sinister warning of the outbreak: dying rats. Rieux started with one dead rat on the landing outside his flat leading on to dozens, then hundreds and finally thousands of rats dying each day. Rieux documented his exhausting workload alongside a sense of frustration at the slow response of civil authorities and his own powerlessness. He described the ways in which some of his actions, such as removing infected individuals from their houses and families, increased suffering. Camus reflected on the personal experience of lockdown, such as the strange

combination of boredom and fear: ‘In the memories of those who lived through them, the grim days of plague do not stand out like livid flames, ravenous and inextinguishable, beaconing a troubled sky, but rather like the slow, deliberate progress of some monstrous thing crushing out all upon its path’ (Camus, 1960, p. 173).

Telling the story of the COVID-19 pandemic: numbers and people

In most democratic countries, there was regular government reporting on the pandemic. This reporting had a distinctive characteristic and narrative. It focused on the technical aspect of the development and response to the pandemic with numbers featuring prominently. The media, especially the traditional mass media, also reported these numbers but they also had access to other sources of information, such as dissenting scientists, survivors of the virus or friends and relatives of victims. Combining these sources enabled them to create a narrative matrix.

Official accounts: numbers and facts

The ‘official’ narrative of risk was clearly articulated by the Director-General of the World Health Organization when on 11 March 2020, he declared that COVID-19 was a global pandemic and highlighted the risks, stating that ‘We [the WHO] have rung the alarm bell loud and clear’. In his speech, Tedros Ghebreyesus used various numerical indicators to highlight the increasing threat of COVID-19:

In the past two weeks, the number of cases of COVID-19 outside China has increased 13-fold, and the number of affected countries has tripled. There are now more than 118,000 cases in 114 countries, and 4,291 people have lost their lives. Thousands more are fighting for their lives in hospitals.

In the days and weeks ahead, we expect to see the number of cases, the number of deaths, and the number of affected

countries climb even higher. WHO has been assessing this outbreak around the clock and we are deeply concerned both by the alarming levels of spread and severity, and by the alarming levels of inaction.

(Ghebreyesus, 2020a)

In the UK, the government attempted to control the COVID-19 pandemic narrative through regular televised briefings. During the first wave of the pandemic in spring 2020 there were daily televised briefings. They took place in a room in Downing Street and usually had the Prime Minister or another minister centre stage flanked by specialist advisers.

One such briefing was held on 15 April 2020 at the height of the first wave of the pandemic. The theme of the briefing was the impact of the pandemic on care homes and the measures the government was proposing to take to protect them. Matt Hancock, the Secretary of State for Health and Social Care, was the ministerial lead. He was supported by the Chief Medical Officer, Chris Whitty, and the Deputy Chief Scientific Adviser, Angela McLean. Matt Hancock opened the briefing by citing the most recent UK numbers for the pandemic and then appealing for national support for the government lockdown policy:

On the most recent figures, 313,769 people have now been tested for coronavirus. Of these, 98,476 people have tested positive. The number of patients in hospital with symptoms is now 19,529. 12,868 people have sadly died, an increase of 761.

This all just goes to show why we cannot let up in our efforts. We cannot let go of the hard work that's been done so far. This shared sacrifice, and I know it's a sacrifice, is starting to work. But, we will not lift these measures until it is safe to do so. Everyone who stays at home is doing their bit, protecting the NHS and saving lives. But, while

everyone else stays at home to save lives, our health and care workers go out to work to save lives.

(Hancock, 2020)

He then handed over to Angela McLean, who presented and talked about four data slides:

- the declining use of transport during lockdown;
- new UK COVID-19 cases from 21 March to 15 April;
- patients in hospital beds with COVID-19 from 24 March to 15 April;
- international global death comparisons starting from a baseline of 50 deaths.

This final graph showed that Taiwan had the lowest number of deaths, the US the highest with the UK in an intermediate group with France, Spain and Italy.

Unusually, Matt Hancock did talk about two named individuals, one as a ‘hero’ of the pandemic, Captain Tom Moore, and the other as an ‘innocent’ victim, Ismail Mohamed Abdulwahab (BBC, 2020c). Tom Moore raised over £32 million for the NHS and received a knighthood in July 2020 for his efforts (Penna, 2020). Matt Hancock commended his fundraising in the following way: ‘I want to pay a special tribute today to Captain Tom Moore who, at the age of 99, has raised over £7 million so far for NHS charities by completing 100 laps of his garden. Captain Tom, you’re an inspiration to us all and we thank you’ (Hancock, 2020).

In contrast, Ismail Mohamed Abdulwahab was one of the ‘innocent’ victims. He was a 13-year-old boy who had tested positive on 25 March 2020 and died in hospital on 30 March. His family was unable to attend his funeral as two of his siblings showed signs of COVID-19. In the briefing, Matt Hancock, stressed his empathy with Ishmail’s parents and his emotional response to Ismail’s death: ‘As a father of a 13-year-old myself, the reports of Ismail, dying aged 13 without a parent at his bedside, made me weep. And the sight of his coffin being lowered into a grave without a member of his family present was too awful’ (Hancock, 2020).

This press briefing reflected the ways in which the UK government sought to shape the risk narrative during the COVID-19 pandemic. The emphasis was on the technical aspect of the pandemic, the numbers of cases, hospital admissions and deaths and the ways in which the government was responding to these changing numbers. The government minimised its role in decision making by claiming to be ‘led by the science’ or following the maths. For example, in a reply to a question by the BBC political editor, Laura Kuenssberg, about new lockdown measures announced on 12 October 2020, the Prime Minister noted that if the UK adopted the ‘just learn to live with it approach’ then ‘All the maths is too brutal. It will lead to too many fatalities’ (Johnson, 2020a). By highlighting the technical dimensions of the pandemic, the government downplayed the moral and emotional dimensions of decision making and emphasised that it had ‘no choice’ when making unpopular decisions.

Media narratives: adding moral judgements and emotion to numbers and facts

Media narratives were shaped by official accounts of the pandemic. For instance, on Monday 12 October 2020, the UK Prime Minister made a statement in Parliament followed by a national television broadcast in which he announced a new three-tier alert system and increased localised restrictions. The following day, all the national newspapers in the UK judged this to be the most newsworthy item and it dominated all the front pages.

However, some stories started in the media and were subsequently picked up by the government. The Captain Tom story was an example. Tom Moore was born on 20 April 1920. To show his appreciation for the care he received from the NHS after he fractured his hip in 2017, he decided to walk 100 laps of his garden before his 100th birthday to raise £1,000 for the NHS. He described them as ‘our NHS heroes’ and said: ‘You [NHS staff] are all entering into something where you are putting yourself in danger and you’re doing that for the good of the people here. You are doing a marvellous, marvellous job’ (Captain Tom Foundation, 2020).

Media coverage of Tom Moore's charity walking grew rapidly in early April. On the 15 April 2020, *The Sun* newspaper (Pietras and Sims, 2020), a tabloid, published an update on his walk reporting, stating that he had raised £7 million. The online version of the article included videos and photos with one of Tom from 1940 in his officer's uniform.

Unlike many media stories, Captain Tom's story did not have a short or limited shelf life. Indeed, it developed over the pandemic and he became a media celebrity. For example, in October 2020, Grant Shapps, the Secretary of State for Transport, was photographed by the Press Association launching the veterans' railcard scheme by presenting the first railcard to Captain Tom (Starkey, 2020).

Captain Tom's story had both an emotional and moral dimension. Emotionally, it was a heart-warming, feel-good story of an elderly man overcoming his limited mobility to raise a substantial amount of money for a good cause. Morally, it fell in the heroic category of personal triumph over COVID-19 against the odds. The adjective 'heroic' was used to describe both Captain Moore and those he was collecting money for, NHS staff.

The use of individual stories to highlight emotional and moral issues was a feature of the reporting of risks in the pandemic. In October 2020, *The Guardian* published an article to show the pandemic had not disappeared during the summer months. Using official statistics, Mohdin (2020) noted that 3,173 people had died between 15 June (the end of lockdown) and 8 September when most schools had reopened. Mohdin described the deaths of six individuals, highlighting the ways in which their deaths represented a loss to the community. For example, she wrote about the death of Wilbald Tesha, a mental health nurse who had migrated from Tanzania to work in the NHS. In her account, Mohdin uses a long quote from an interview with one of Tesha's former patients, Samantha Chung, to paint a picture of Tesha:

He was compassionate, understanding, and non-judgmental. He always said hello with a big smile. He was full of positivity and hope for all of us patients ... He was the only one that could get through to me in my darkest

moments and I really do owe him my life. He saved my life many times and I know that he saved many of my friends' lives as well.

(Mohdin, 2020)

Telling stories about the failure to manage risk in care homes

The mass media used official sources and statistics to identify social groups that have experienced disproportionate levels of infections and deaths. These articles often used personal stories to illustrate the emotions, such as sadness and loss, and moral implications, especially the injustice of such illnesses and deaths.

The failure to protect residents (and staff) in care homes was evident in a number of high-income countries. A *Washington Post* article cited evidence that in 26 such countries, 'elder-care home residents have accounted for an average of 47 percent of recorded coronavirus deaths', including 80 per cent of all COVID-19 deaths in Canada and 36 per cent in the UK (Taylor, 2020).

In the UK, a BBC *Panorama* documentary on deaths in care homes was broadcast on 30 July 2020 (BBC 2020e). The documentary noted that at the time of transmission, 22,000 care home residents in the UK had died following a COVID-19 diagnosis (BBC, 2020e). The documentary focused on the experiences of staff and residents in two care homes, one in the north and the other in the south of England.

The documentary examined the advice and support which the government provided for care homes. Alison Holt, the reporter, stated that in late February and early March as evidence emerged of community transmission in Italy, Spain and Austria, the official advice in the UK was that transmission in care homes was unlikely and to carry on as normal. Mark Adams, the head of a charity, Community Integrated Care, which managed the Lancashire care home that featured in the documentary, commented: 'In early March, we were seeing what was happening in Italy and Spain and parts of America, which was terrifying, including care homes where

many people died in outbreaks [of COVID-19]. The writing was on the wall' (BBC, 2020d).

Mark Adams recalled how in the absence of any guidance from the government, his charity set up its own 'war room' that identified the main risks which their residents faced and took measures to mitigate these risks. When on 13 March the government advised care homes to only allow those who were COVID-free into homes, the charity decided to lockdown all its homes by stopping all visiting by relatives and friends. However, within days the virus had been introduced into their Lancashire care home. Dorothy Kierney, one of the residents, had been admitted to hospital with breathing difficulties and was discharged back to the home despite having tested positive for COVID-19 in hospital. She was cared for in isolation by staff wearing protective equipment. She died three days after her return to the home. Despite the best efforts of the staff, the virus spread quickly through the home. Commenting on the rapid deterioration of two of the residents, one of nurses commented that 'it was so frustrating that we were unable to see or predict this'. The home did not have access to COVID-19 tests. The documentary recorded the death of one of the residents, Joan Day. When she was admitted a few months earlier, Joan was lively and active. However, when she contracted COVID-19 she rapidly deteriorated. The documentary recorded the duty nurse administering morphine to relieve Joan's pain. Joan died later in the day and the nurse who had taken over Joan's care, and who was also caring for five other residents with COVID-19, phoned Joan's daughter, Michelle, to give her the bad news. Michelle commented, 'It's the worst feeling in the world'.

The *Panorama* documentary highlighted the suffering and emotional responses of staff, residents and their families. It also allocated responsibility for the failure to protect vulnerable residents in care homes. The programme argued that during the early stages of the pandemic, the government had prioritised protecting the NHS to ensure that there were sufficient hospital beds. Social care was 'an afterthought'.

Case study: BAME groups and narratives of innocent victims and the guilty parties

The media has highlighted the impact of COVID-19 on a number of vulnerable groups such as older people, people living in care homes and front-line workers but one group has attracted particular attention, individuals from black, Asian and minority ethnic (BAME) backgrounds. As epidemiologists collected data in the US and the UK, it became clear that the pandemic has affected some ethnic groups more than others. In the US, individuals with Asian (40 deaths per 100,000 people) or White (47 per 100,000) backgrounds had the lowest death rates while individuals from other ethnic backgrounds had higher rates: Latinos (65 per 100,000), Pacific Islanders (72 per 100,000), Indigenous Americans (82 per 100,000) and Black Americans (96 per 100,000) (Scott and Animashuan, 2020). The headline highlighted this ethnic variation: ‘One in 1,000 Black Americans has died from Covid-19. For Whites, it’s more like 1 in 2,100’ (Scott and Animashuan, 2020).

In the UK, the difference in relative risk was even more marked. The Health Foundation, an independent UK charity, used data published by the UK’s statistics agency, the ONS, from the early stages of the pandemic (2 March to 10 April 2020) to explore the relative risks of ethnic groups in England and Wales compared to people of white ethnicity. Elwell-Sutton et al (2020) found that all non-white ethnic groups had an increased relative risk compared to people of white ethnicity; for individuals of mixed ethnicity and Chinese ethnicity it nearly doubled; for those with an Indian ethnicity it was nearly two-and-a-half times as high; and for those from a black ethnic background it was over four times as high.

Media coverage of the impact of COVID-19 on individuals with a BAME background***Coverage in the US***

The media coverage of COVID-19 in the US took place in a highly political environment. 2020 was an election year and on 25 May, a white police officer in Minneapolis was filmed

kneeling on the neck of and killing George Floyd, a 46-year-old black man (Woodward, 2020a, p. 236). There was a major wave of protests in the US and beyond around the slogan ‘Black Lives Matter’. Most of these protests were peaceful and short-lived, though in some cities, such as Portland in Oregon, the protests were both longer-lasting and violent involving clashes between Black Lives Matter supporters and white supremacist groups such as the Proud Boys (Shen, 2020). While President Trump stated that ‘All Americans were rightly sickened and revolted by the brutal death of George Floyd’ (Woodward, 2020a, p. 237), he highlighted the violent aspects of the protests, demanded that governors use force to suppress the protests and refused to condemn the Proud Boys (Vazquez and LeBlanc, 2020). In the first Presidential debate, Joe Biden, the Democratic candidate, attacked Donald Trump in the following way:

This is a president who has used everything as a dog whistle to try to generate racist hatred, racist division. This is a man who in fact, he talks about helping African Americans, one in 1000 African Americans has been killed because of the coronavirus. And if he doesn’t do something quickly by the end of the year, one in 500 will have been killed. One in 500 African Americans. This man? This man is a savior of African Americans? This man cares at all? This man has done virtually nothing.

(*USA Today*, 2020)

In the US, there was media coverage of the impact of COVID-19 on black Americans. *The Washington Post* carried an article co-written by two black female psychiatrists reflecting on their experience of providing support for black women during the pandemic. They started with the observation of the former first lady, Michelle Obama, that she was ‘experiencing “low-grade depression” caused by the double pandemic of COVID-19 and racial strife’ (Jackson and Pederson, 2020). They noted that black women’s experience of COVID-19 was shaped by the multiple oppression they experienced: ‘Black women sit squarely at the confluence of multiple systems of oppression, and are experiencing a disproportionate loss

of life and livelihood in the era of Covid-19' (Jackson and Pederson, 2020).

They argued that black women had to deal with the risk of COVID-19 and this was amplified by the multiple other risks they had to deal with: the risks of losing their jobs or having to work as essential workers, being care givers and having direct experience of someone dying of COVID-19. A Washington Post-Ipsos survey found that 31 per cent of black adults knew someone who had died of COVID compared to 9 per cent of white Americans (Jackson and Pederson, 2020).

Coverage in the UK

In the UK, reporting of the impact of COVID-19 on the BAME community often included personal accounts of specific individuals who had suffered or died from COVID-19. The narrative matrix combining statistical analysis of excess deaths with personal stories underpins the reporting of BAME deaths. In *The Guardian* newspaper, an article published in the print edition of the paper on 23 April 2020 has a front-page headline, 'Revealed: scale of coronavirus's deadly toll of ethnic minorities' (Barr et al, 2020a, p. 1). The inside-page story, which amplified the story, had photographs of nine BAME victims alongside accounts of their lives and deaths (Barr et al, 2020a, p. 8). Online, there are two linked articles. The first version highlighted the data and included a response from a ministerial spokesman: 'Any death from this disease is a tragedy and we are working incredibly hard, day and night, to protect the nation's public health' (Barr et al, 2020b). The second online article focused on the death of 67-year-old Choudhary Aslam Wassan, a Birmingham businessman who died of COVID-19 on 29 March. It was based mainly on an interview with his son, Zia Wassna. Zia clearly felt that his father and other members of the Asian community had not been protected: 'What is happening is not normal. We 100% need answers. This is not adding up – why are so many Asian men dying. It is not normal. There is something behind this and it's my strong view that it needs to be investigated' (Parveen, 2020).

Weaver (2020) reported the personal story of Abdul Mahud Chowdhury, a 53-year-old consultant urologist who worked

at Homerton Hospital in east London and had no underlying health problems but died of COVID-19 on 8 April 2020. Before his death he had written to the Prime Minister raising concerns that front-line staff working in direct contact with coronavirus infected patients did not have access to either testing or protective equipment (PPE).

On 15 and 16 April, the death of Mary Agyeiwaa Agyapong, a Ghanaian nurse, was widely reported in the UK and international media. This was the first recorded COVID-19 death in the UK of a pregnant woman. The article published online in *The Sun*, under the headline ‘Virus Tragedy’, had all the key elements of the narrative matrix (Crowson and Bennett, 2020). It had data on the spread of the virus through Europe and reported that on 15 April 2020 there were 98,476 cases and 12,868 deaths in the UK. Alongside these data were stories of the deaths of front-line health workers including Mary Agyapong, Dr Peter Tun, Leilani Medel, Cheryk Williams and Linnette Cruz. The main part of the article was devoted to Mary Agyapong. There are four photos of Mary, including two of her dressed for her degree ceremony. There are testimonials from her colleagues, saying that she ‘devoted her life to the NHS’ and ‘was a highly valued member of our team’. The article included claims that staff in hospital had been exposed to unnecessary risks by lack of PPE, especially ‘the shortage of gowns and the rationing of masks’. Topping’s article in *The Guardian* stressed the vulnerability of Mary Agyapong and other pregnant health workers, attributing her premature and unjust death to the failure of the government to provide her and other pregnant front-line health workers with adequate protection: ‘Organisations supporting pregnant women have told the Guardian that hundreds of healthcare workers are being told they must work – sometimes without personal protective equipment – even though they fear for their unborn children’ (Topping, 2020).

Risk implications

The risk narrative which Daniel Defoe pioneered in his fictional eye-witness account of the 1665 London Plague and was used by Albert Camus in his 1940s account of the plague

in Oran was still evident in the media coverage of the impact of COVID-19 on the BAME community. The numbers remained important: they demonstrated the heightened risk and vulnerability of members of the BAME community. But alongside the numbers were personal stories and images that helped readers identify specific victims and empathise with their suffering. The reader could make sense of the objective reality of the numbers through the emotions of friends and relatives of the victims, both their sadness at losing a loved one and their anger at the failure of those responsible to protect them.

Comment

Risk is often represented in an objective impersonal way through numbers which represent probabilities. Such numbers provide a way for policy makers to remove the emotion and to hide the deaths and suffering that lie behind the numbers. Narrative matrices combining numbers with personal stories provide a context for the numbers. It is rare for policy makers to use such narratives, though the case of Captain Tom is an exception. His story can be seen in some ways as a counter-narrative, a story of heroism in face of the risks of COVID-19. It played to English nationalism and exceptionalism, referencing national unity and the 'Dunkirk' spirit. In contrast, the narratives around BAME referenced multiculturalism and social change and the ways in which BAME communities were exposed to more risks and suffered more from them.

Contesting risk

Conspiracy theories

Risk issue: the challenges to scientific knowledge

Enlightenment, science and its critics

Intellectuals in the 18th century were optimistic about the future, arguing that the accumulation of human knowledge through science would enable humanity to control and exploit nature and create just and rational societies. In France, there was a project to bring together all human knowledge in a single document or encyclopaedia. This encyclopaedia subtitle, ‘a reasoned dictionary of science, arts and crafts’, was perhaps the most visible part of the Enlightenment or Age of Reason, an intellectual movement which aimed to liberate humanity from the fear engendered by ignorance, superstition and religion through rational and critical thinking based on scientific knowledge (Duignan, 2020). An important element of the Enlightenment was the growth of public discourse in learned societies, academic journals and newspapers, which provided a space where knowledge and ideas could be exchanged and tested (Habermas, 1989, pp. 36–7).

Science and scientific knowledge still command substantial prestige and support in contemporary society as symbols of modernity and progress, but the optimism is now tempered. Science and technology can stimulate fear and anxiety. As Perrow (1984) observed in his study of high-risk technologies, scientific knowledge enables modern societies to build sophisticated and complex systems that are also highly risky and prone to accidents, resulting in human harm. The most obvious example of such systems are nuclear power stations. Hospitals are also prone to such ‘normal accidents’.

Distrust of experts and expert knowledge

In modern societies, individuals depend on complex technological systems but most individuals do not have the specialist knowledge that would enable them to understand how and why such systems work (Alaszewski and Brown, 2007). The growth and fragmentation of knowledge alongside the development of error-prone complex systems has undermined the basic Enlightenment premise that knowledge will empower and liberate humanity. Instead, as Beck observed in his study of late modern or risk societies, 'the sources of danger are no longer ignorance but *knowledge*' (emphasis in the original; Beck, 1992, p. 183).

The development of specialist knowledge controlled and applied by qualified experts such as doctors also undermines the social cohesion created by shared knowledge and beliefs that existed in pre-modern societies. While experts try to compensate for this lack of knowledge by seeking to engender trust in systems such as hospitals and health care, these efforts may fail and instead there may be distrust, fear and anxiety, and resistance to sophisticated technology. Burgess (2002) noted that new technologies such as mobile phones have attracted anxiety and fear. Examining national responses to one aspect of this technology, mobile or cell phone masts, he found that in some countries there was high anxiety about and resistance to the building of such masts close to human habitations whereas in others there were no such concerns. Burgess observed that health fears about mobile or cell phone emissions were triggered in the US by a 1990 lawsuit in which David Reynard claimed that his wife's cancer was caused by mobile phone radiation. Though this action and others like it failed because of lack of evidence, they attracted extensive media coverage and public interest, stimulating the growth of local opposition groups. Initially, the campaigns focused on the danger to children and in 1993 San Francisco became the first major city to ban phone masts near schools (Burgess, 2002, p. 179). Such decisions were based on the precautionary principle: there was no evidence to show mobile phone masts were dangerous but it was better to be safe than sorry.

Distrust of scientific knowledge and conspiracy theories

This distrust of technology and accepted scientific knowledge is evident in health and health care; for example, in the anti-vaccination movement in low-income countries such as Pakistan, as well as high-income countries such as the UK and US. In Pakistan, the anti-vaccination movement centred on the polio vaccination programme and was based on distrust of medical experts, concerns about American influence and opposition from some religious leaders and groups. In tribal areas there have been armed attacks on polio vaccination teams (Saifi and Shah, 2019). In Europe and the US, ‘bad’ science played a role and social media provided a space for private discourse where such science could be communicated without being challenged and tested. In the UK, Andrew Wakefield and his scientific colleagues (Alaszewski, 2011) announced a new disease (autistic enterocolitis) that they claimed was caused by the measles, mumps, and rubella (MMR) vaccine. Wakefield and colleagues had an article accepted and published in *The Lancet* in February 1998. At the time, Wakefield was working with an antivaccine campaign group, *Jabs*, and was involved in a joint action by 1,500 claimants who were seeking compensation for vaccine damage to their children. Neither Wakefield nor other researchers have been able to repeat his study and following critical academic scrutiny, the Editor of *The Lancet* withdrew the article. When Wakefield was struck off the medical register, antivaxxer websites rallied to his support. The *Jabs* website alleged that there was an ‘unrelenting barrage of anti-Wakefield propaganda in the British media’ (*Jabs*, 2011).

This distrust of mainstream science is grounded in a belief that it conceals the truth. This can be seen in the assertions that the manufacturers of vaccines and other ‘harmful’ drugs profit from the state-funded vaccination programmes. One anti-vaccination website, *Learn the Risk*, aimed to make the world population aware of the risks of vaccinations by ‘educating people WORLDWIDE on the dangers of pharmaceutical products, including vaccines and unnecessary medical treatments — that are literally **killing** us’ (emphases in the original; *Learn The Risk*, n.d.).

Conspiracy theories are not new or even modern. In Europe in the medieval period, there were a variety of conspiracy theories promoted by Christians about Jews that justified their persecution. Such historical conspiracy theories found their more recent expression in a document forged in Tsarist Russia and first published in 1903, the *Protocols of the Elders of Zion* (Landes and Katz, 2012).

Populism and conspiracy theories

Only fringe conspiracy theorists give the *Protocols of the Elders of Zion* any credence. However, other conspiracy theories have taken their place in mainstream politics, especially in populist politics. As Kriesi (2014) observed, the ideologies of populism draw on a basic conspiracy theory in which society is divided ‘into two homogenous and antagonistic groups – “the pure people” versus the “corrupt elite”’ (p. 362), with the ‘corrupt elite’ seeking to controlling and exploit the pure people.

In the right-wing populist movements in the UK (Brexit) and US (Trumpism), the corrupt elite includes technical experts. The Brexiteers attacked the unelected technocrats in the European Commission for imposing arbitrary regulations on the UK (O’Toole, 2018). When Michael Gove, a leading Brexiteer, was challenged during the Brexit Referendum campaign to name any economist who backed Britain’s exit from the European Union, he replied that ‘people in this country have had enough of experts’ (Mance, 2016).

In the US, Donald Trump attacked experts and expertise at both national and international level. Nationally, he used his executive powers to limit funding to the CDC and within the White House cut the post of Director for Global Health Security and Biothreats, so undermining the early warning system for pandemics (Horton, 2020, p. 36). He continually criticised Anthony Fauci, ‘the country’s leading infectious disease expert’ (uPolitics, 2020). In a phone call which was made public, Trump made the following comments:

‘People are tired of COVID. People are saying, “Whatever, just leave us alone”. People are tired of hearing Fauci and

all these idiots,’ said Trump. ‘He’s been here for, like, 500 years. He’s like this wonderful sage telling us how. Fauci, if we listened to him, we’d have 700,000 [or] 800,000 deaths.’

(uPolitics, 2020)

Trump was also hostile to international institutions and experts such as the WHO.

In the US, Donald Trump as a charismatic leader effectively developed his own version of reality and emphasised his own ability to predict the future. This was evident in his response to COVID-19 when, despite all evidence to the contrary, he maintained an optimistic approach willing COVID-19 to go away. As Horton noted, when the first wave of the pandemic reached the US, Trump’s public statements were unrelentingly optimistic:

By 30 January, he was describing the epidemic as ‘pretty much under control’. By 2 February, his administration had ‘pretty much shut it down.’ By 27 February, ‘it will disappear.’ On the 4 March he claimed there were ‘very small numbers in the US’. 10 March: ‘It’s really working out.’ 12 March: ‘It’s going to go away.’

(Horton, 2020, p. 12)

The combined pressure of his son-in-law Jared Kushner and experts such as Fauci did in mid-March persuade Trump to acknowledge the reality of the COVID-19 pandemic and take action to mitigate the risk (Woodward, 2020a, pp. 279–89) but it was a temporary suspension of his optimism.

The COVID-19 coincided with the US Presidential campaign and formed part of the political debate. In a speech on 28 February, Donald Trump referred to the Democrats’ criticism of his administration’s response to COVID-19 as ‘their new hoax’ and downplayed the outbreak, comparing it to seasonal flu (Palma, 2020). Trump did not directly refer to COVID-19 as a hoax; rather, he implied it was a media conspiracy. On 27 October, he tweeted: ‘Until November 4th, Fake News Media is going full on Covid, Covid, Covid. We are rounding the turn. 99.9%’ (Trump, 2020). On 24

October at a rally in North Carolina, he stated: ‘That’s all I hear about now. Turn on television, “Covid, Covid, Covid, Covid, Covid, Covid ...” By the way, on November 4, you won’t hear about it anymore’ (Trump in Berenson, 2020b).

The COVID-19 paradox: hostile reactions to scientific knowledge

The rapid development of scientific knowledge about COVID-19

One of the key features of the COVID-19 pandemic was the speed with which scientists developed and communicated knowledge. This can be seen by comparing the 1918–19 Spanish flu pandemic with the COVID-19 pandemic (Honigsbaum, 2020). In March 1918, there was an outbreak of ‘camp-acquired’ pneumonia in a large US Army camp in Kansas. Although this petered out as soldiers were transported to France, there were further outbreaks on the transport ships and in France. Initially, the symptoms were fairly mild but by the autumn the symptoms were more serious and deadly.

At the start of the flu pandemic, the scientific consensus was that flu was caused by a bacteria, *Bacillus influenzae*. This bacteria was isolated in some but not all flu patients. By the end of 1918, scientists had demonstrated that flu was caused by an organism smaller than bacteria, a virus, but they did not have the technology to image this organism (Honigsbaum, 2020, pp. 18–20). Such imaging could only take place in 1940 following the development of the electron microscope, which showed that the flu virus was like the ‘surface of a dandelion with tiny spikes and mushroom-like spines’ (Honigsbaum, 2020, p. 29). The virus could use these spikes to latch onto receptor cells in the human respiratory tract. In the later part of the 20th century, the expansion of genomics technology enabled researchers to identify the flu virus as a sequence of RNA. In the early 21st century, scientists at the CDC sequenced the genome of Spanish flu and in 2005 they reconstructed it in a lab (Jordan, 2019).

Research that for the Spanish flu virus took nearly 80 years was completed in under eight weeks for COVID-19. Patient

zero, the first identified person to contract COVID, probably fell ill on 1 December 2019 and within a week there were seven more cases (Honigsbaum, 2000, p. 263). On 2 January 2020, medical researchers at the Wuhan Institute of Technology isolated the virus from one of the infected patients and examined it using a RT-PCR (Reverse Transcript Polymerase Chain Reaction) (Honigsbaum, 2000, p. 264). They found that the patient had been infected by a new coronavirus. On 5 January 2020, Prof Zang in Shanghai sequenced the virus and this sequencing was made public on 11 January, enabling scientists round the world to rapidly develop a test for the new virus and to start work on vaccines (Campbell, 2020). On 24 January, a Chinese team published a detailed report on 41 cases with a detailed description of signs and symptoms of COVID-19 (Horton, 2020, pp. 41–2).

Rejection of scientific knowledge

The success of scientists in building an understanding of the nature and risks of COVID-19 did not result in universal acceptance of this knowledge. There was the growth of a social movement that challenged this knowledge and the assessments of risk based on it. There are two distinctive alternative realities that:

- COVID-19 was a deadly disease caused by modern technology;
- COVID-19 was a hoax, a mild disease which was being used as a way of expanding elite control of the population.

COVID-19 as a product of modern technology

This challenge to scientific knowledge started in early 2020. As soon as it became clear that there was a major pandemic, a theory started to circulate that the virus had been manufactured in a Chinese research laboratory in Wuhan and accidentally or deliberately released in the Wuhan seafood market. This theory drew on two facts: that scientists at the CDC had reconstructed the Spanish flu virus in a lab (Jordan, 2019) and that there was a research laboratory in Wuhan

(Wuhan Institute of Virology) doing research on viruses and that when US scientists had visited it they were concerned about lax safety standards. This theory started on social media and was picked up by right-wing media outlets such as Fox News and then given credence by the President's refusal to deny it when asked about it during a press briefing (Millis and Prakash, 2020).

An alternative theory circulating in the early stages of the virus was that the new mobile phone technology, 5G, was causing the illnesses that were being ascribed to SARS-CoV-2. The 5G technology theory was a case of the real fears of the virus being transferred to imaginary fear of the new technology through mutual connection with China. The theory was promoted by celebrities and religious leaders. In the US, celebrities such as the Hollywood actor Woody Harrelson and musicians Anne-Marie and M.I.A. promoted the 5G theory (Lynas, 2020). In the UK, a tape was uploaded on YouTube that purported to be from the ex-head of the Vodafone business unit. It was actually recorded by an evangelical pastor from Luton who had worked for Vodafone for a year. It included the claim that 'They are using coronavirus to try to hide the fact that people are dying from the 5G frequency' and that it was a divine revelation: 'God has blessed me with the ability to bring disparate pieces of information together that puts the puzzle together and makes sense of it' (Waterson, 2020).

In the UK, David Icke, a former TV sports presenter, was a major promoter of conspiracy theories and used his website to promote the 5G theory. In a blog posted on the site, Makia Freeman asserted that in China, Wuhan was one of the first cities chosen for 5G and the roll-out on 31 October 2019 was linked to the coronavirus outbreak which began with 'flu-like symptoms' (Freeman, 2020). Freeman claimed that 5G was a military technology of the type that had caused previous disasters: 'Remember, directed energy weapons (DEW) are behind the fall of the Twin Towers on 9/11 and the fake "Californian Wildfire"' (Freeman, 2020).

The 5G theories linked to more traditional anti-technologies theories, especially those around vaccination. In his blog on the David Icke website, Freeman made the

connection in the following way: ‘If you dig deep enough, some disturbing connections arise between 5G and the men who have developed or are developing vaccines for novel viruses like ebola, zika and the new coronavirus COVID-19’ (Freeman, 2020).

COVID-19 as a hoax

Technological conspiracy theories are grounded in fear and anxiety about COVID-19 and provide a focus for this fear: Chinese scientists, 5G technology or mass vaccination. As the pandemic developed, so alternative hoax theories found support, especially those that denied the reality of the virus. Hoax theorists minimised the danger of the virus and argued that it was a conspiracy by the elite—scientists, politicians and the media—to deprive people of their civil liberties. The initial response of governments in most of Europe and the Americas that COVID-19 was like seasonal flu provided the basis of this type of conspiracy theory. As these governments began to recognise the dangers of the virus in March 2020 and moved to protect their health systems through social distancing measures, so the hoax theories gained traction. They justified the pushback against lockdown.

On 28 April 2020, *The Washington Times* published an analysis/opinion article headlined ‘COVID-19 turning out to be huge hoax perpetrated by media’ (Curl, 2020). Curl used data from a variety of sources to claim that scientists had overestimated the death toll and that policy makers and the media accepted these pessimistic estimates:

When the postmortem [on the pandemic] is done on the media’s coverage of COVID-19 (and it will be), it will be clear that the virus was no Black Plague — it’s not even the flu on a bad year. SARS-CoV-2, which causes COVID-19, has killed 56,749 Americans as of Tuesday. That’s not good. But it’s not as bad as the 2017–2018 flu season, when 80,000-plus perished ... The media has been hyping COVID-19 since Day One, alarming Americans to the point where they voluntarily went along with shutting

down the entire economy — a mistake that will likely reverberate for a decade or more.

(Curl, 2020)

This downplaying of risk and the equation of the risk of COVID-19 with that of seasonal flu was a key element in the ‘hoax’ theory. One of the conspiracy theorists argued: ‘It [the COVID-19 pandemic] appears more comparable in terms of overall mortality to the influenza epidemics of 1957 and 1968, or the British flu epidemics of the late 1990s’ (Berenson, 2020a).

Despite the apparent logical incompatibility between conspiracy theories highlighting technological origins of COVID-19 and hoax theories, there is crossover between theorists. Makia Freeman, while warning of the dangers of radiation associated with 5G and the desire of governments to downplay this, also highlighted the motivation of governments to hype the dangers to control people: ‘in the case of the Chinese Government, it has the motivation to hype (to get people afraid so they easily follow its draconian quarantine rules)’ (Freeman, 2020).

Factors which facilitated the spread of conspiracy theories during the pandemic

There are similarities between the conspiracy theories and resistance to science-based measures in the COVID-19 pandemic and those in earlier outbreaks of deadly infectious disease. In the 2014–15 Ebola outbreak in West Africa, poor communication by governments created distrust and a space filled by local rumours that ‘the virus had been manufactured in a US military facility or that it was a plot by governments to attract foreign aid to the region’ (Honigsbaum, 2020, p. 208). There was a hostile response to the foreign medical teams that were attempting to introduce public health measures, some of which undermined traditional practices and beliefs. In the early stages, these medical teams were attacked and in one incident eight members of delegation of government officials and medical personnel were killed (Honigsbaum, 2020, p. 207). In the COVID-19 pandemic, poor government communication, especially the open conflict

between the President and health experts in the US, created the space in which conspiracy theories could flourish. The internet provided the medium in which conspiracy theories could develop relatively uncontested. Lockdown provided a further stimulus. Individuals were cut off from their normal social networks and source of reality, many experienced increased anxiety and uncertainty, and pursuing conspiracies provided a meaningful pastime. Elements of engagement with conspiracy theory were based on Enlightenment principles of using research to search for the truth although this ‘truth’ was not subject to rigorous scrutiny (Hern, 2020).

Case study: resistance to wearing masks in the US

The science of transmission and prevention

Early in the pandemic, the precise mechanism by which SARS-CoV-2 was transmitted between humans was not clear. However, it was a coronavirus like SARS and therefore it was a reasonable assumption that it was transmitted in the same way as SARS. Following the SARS outbreak in 2002–3, scientists undertook forensic examinations of several of the SARS clusters, including the Metropole Hotel and the Amoy Gardens estate in Hong Kong (Honigsbaum, 2000, pp. 176–91). In the Metropole Hotel, a Chinese professor of nephrology from Guangdong, Liu Jianlun, booked into a room on the ninth floor on 21 February 2003. He died from SARS on 4 March. Liu was a ‘superspreader’. He infected 16 other guests who within 72 hours had spread SARS to seven other countries, sparking clusters in hospitals in Hanoi and Toronto. On 26 March, 15 residents who lived in Block E of the Amoy Gardens were admitted to hospital with symptoms of SARS, on 28 March a further 34 and on 31 March a further 68.

Following the outbreak, investigators examined the ninth floor of the Metropole Hotel and Block E of Amoy Gardens (Honigsbaum, 2000, pp. 190–1). On the ninth floor, they did not find any traces of SARS in Liu’s room but did find traces in the carpet and door sills outside his room, in the

neighbouring rooms and in the air inlet fan in the elevator. This indicated that as Liu left his room, he had either coughed or vomited, expelling the virus, and in the lift the air conditioning system aerosolised his body fluid or cough droplets. It was clear the people who had been infected had shared a space with Liu. The investigators found no evidence that the virus was spread via contact with surfaces as none of the other guests in the hotel nor any of the staff were infected (Honigsbaum, 2000, p. 190). Investigators also examined Block E of Amoy Building. They did not find any residual traces of SARS but the pattern of transmission, vertically between flats at the corner of the block, suggested the virus had spread through the airborne droplets either via the sewage system or through windows. The evidence all pointed in the same direction: ‘that SARS was primarily a droplet infection and the risk was greatest when an infected patient coughed or sneezed, propelling infectious particles over distances of about three feet’ (Honigsbaum 2000, p. 191).

The public health implications of these findings were clear. To reduce the risk of infections, individuals should avoid confined spaces, large crowds and maintain physical distance from others and wear a face covering to reduce droplet spread. These measures were encapsulated in the Japanese 3Cs: the avoidance of ‘closed spaces, crowded places, and close-contact settings’ (Expert Meeting, 2020).

Wearing face masks as a public health measure

In the early stages of the pandemic, the World Health Organization recommended the wearing of face masks only by individuals who were ill or those providing them with health and/or social care. WHO argued that there was not enough evidence to indicate that if healthy people wore masks it would reduce transmission of the virus (BBC, 2020f). However, on 5 June, the WHO Director-General updated WHO guidance, recommending that:

In areas with widespread transmission, WHO advises medical masks for all people working in clinical areas of a health facility, not only workers dealing with patients with

COVID-19... in areas with community transmission, we advise that people aged 60 years or over, or those with underlying conditions, should wear a medical mask in situations where physical distancing is not possible... In light of evolving evidence, WHO advises that governments should encourage the general public to wear masks where there is widespread transmission and physical distancing is difficult, such as on public transport, in shops or in other confined or crowded environments.

(Ghebreyesus, 2020b)

In most high-income countries, national public health agencies endorsed and followed WHO guidelines. For example, in the US the CDC posted guidance on its website under the slogan **‘WEAR A MASK, PROTECT OTHERS’** plus photos of six individuals from diverse backgrounds wearing masks (emphasis in the original; CDC, 2020b). The CDC recommended that ‘people wear masks in public settings, like on public and mass transportation, at events and gatherings, and anywhere they will be around other people’ (CDC, 2020b).

Resistance to mask wearing

In the US and Europe, unlike Japan, there was no tradition of mask wearing in public spaces and recommendations to wear masks in such spaces met with resistance. Part of this resistance was linked to conspiracy theories, especially those propagated by the Anti-vax movement. Some media celebrities used their substantial online fanbase to promote resistance to mask wearing. For example, the frontman of the pop group, The Stone Roses, posted a series of (now deleted tweets) in which he likened coronavirus to the common cold, suggested the crisis was ‘planned and designed to make us digital slaves’ and linked the virus to a fraud. One of his tweets in September 2020 read: ‘NO LOCKDOWN NO TESTS NO TRACKS NO MASKS NO VAX #researchanddestroy’ (Daly, 2020).

In the US, mask wearing became entangled in the Presidential election campaign with Donald Trump refusing to wear a mask and ridiculing mask wearers including Jo

Biden, the Democratic candidate. Donald Trump displayed his rejection of masks with typical theatricality. When he returned from hospital on 6 October 2020 after his treatment for COVID-19, he arrived wearing a mask, which he then removed with a great flourish for the TV cameras (YouTube, 2020a).

Early in the pandemic, Fauci did not recommend masks for the general public but as the supply increased and the pandemic spread so his advice changed. In a virtual panel conference with public health experts in Australia, Fauci commended Australia and New Zealand for tackling the pandemic well and commented: ‘I would like to say the same for the United States, but the numbers speak for themselves’ (Thorne, 2020). Fauci identified the lack of mask wearing as a major cause of the spread of infection in the US. He observed that if you watched TV images of life in the US, ‘you’d see people crowded at bars with no masks, just essentially causing super-spreading’ (Thorne, 2020). Fauci noted the mask wearing in the US has shifted from being a public health issue to being a political issue and he found the vitriol aimed at mask wearers extraordinary. He found it a painful experience, ‘as a physician, a scientist and a public health person — to see such divisiveness centred around a public health issue’ (Thorne, 2020).

Risk implications

With the growth of scientific knowledge, experts have developed sophisticated technologies that have enabled them to rapidly understand and provide ways of managing existing and new dangers such as infectious disease. Following the Spanish flu pandemic, it took scientists over 80 years to identify the genetic structure of the virus; in 2020, it took scientists weeks to acquire and publish the same knowledge. Paradoxically, such progress has not increased public trust in scientific knowledge. Alongside the growth of scientific knowledge has been the growth of alternative conspiracy theories that identify science as the main risk and which advocate resistance to preventative measures such as mask wearing.

Comment

The growth of conspiracy theories has been a marked phenomenon in the 21st century, facilitated by the development of online communities of conspiracy theorists. Social media platforms such as Facebook have recognised the dangers this presents to public discourses and taken actions to limit its growth (Hern, 2020). However, the pandemic has provided a stimulus to the development of such theories with increased spare time, reduced normal social interaction and support from public figures, including the then US President. In this context, it is interesting that there have been national elections in two countries where politicians have taken very different approaches: New Zealand, where the Prime Minister Jacinda Ardern has strongly supported the conventional expert approach to risk; and the US, where President Trump has endorsed some alternative risk perspectives. The outcome was clear: voters in New Zealand strongly endorsed the conventional public health approach to risk, as did the voters in the US but by a narrower margin.

Hindsight

Inquiries and the blame game

Risk issue: allocating blame for misfortune

Risk plays a role in explaining and accounting for the past, especially individual and collective misfortune, focusing on why the misfortune happened, who was responsible and how it might be prevented in the future (Bernstein, 1996, p. 48; Douglas 1990, p.5). Policy makers would like COVID-19 to be seen as an ‘accidental’ natural disaster. However, as Green (1999) has argued, with the development of improved science and technologies by the late 20th century, governments could reassure their citizens that ‘[m]ost accidents are preventable’ (Department of Health, 1993, p. 9). If this is the case, then accidents such as COVID-19 ‘are the outcome of poorly managed risks, rather than the inevitable misfortunes that we must all suffer from time to time’ (Green, 1999, p. 25). Given that COVID-19 has affected different countries in different ways and the ways it spread and affected human populations was shaped by human decisions, it can be seen as a man-made disaster, especially in those countries with high infection and death rates.

Risk can be used as a way of identifying failings and allocating blame. It underpins the development of a ‘blame culture’ in which every misfortune is someone’s fault. As Douglas (1992) observed, ‘under the banner of risk reduction, a new blaming system has replaced the former system based on religion and sin’ (p. 16). In the case of collective disaster, there is pressure to identify why the risks were not foreseen and mitigated. As I have already shown in Chapter 4, in democratic societies the mass media scrutinises policies and allocates blame but there are also more formal mechanisms such as public inquiries.

Governments appoint public inquiries to maintain public confidence when there is evidence of poorly managed risk leading to avoidable loss of life. Such inquiries involve:

- *Admission of failure of normal decision making.* Some events are considered so shocking and such an existential threat that there is immediate and unanimous agreement that they need to be investigated: for example, the terrorist attacks on the US on 11 September 2001. The attack was followed almost immediately by a bipartisan inquiry of the Intelligence Committees of the Senate and House of Representatives, which published its report on 10 December 2002 (Joint Inquiry, 2002). However, governments are often reluctant to admit they have failed to protect citizens so it may require considerable pressure to persuade them to appoint an inquiry. In the UK, when a dredger, the *Bowbelle*, hit and sunk a pleasure boat, the *Marchioness*, on 20 August 1989 killing 51 of the 130 on board the *Marchioness*, the survivors and relatives of the deceased were unhappy with initial limited investigations. After ten years of campaigning by the survivors and relatives, the Secretary of State agreed to establish a formal inquiry (Clarke et al, 2001).
- *Use of hindsight to identify how and why there was a failure to identify risk.* Inquiries use the knowledge gained from hindsight to identify missed opportunities. The Joint Inquiry into 9/11 identified the ways in which warning signals were repeatedly ignored (Joint Inquiry, 2002, Finding 5). Similarly, the Canadian Commission established to investigate the SARS outbreak in Ontario noted that the Commission could and did use hindsight but ‘those who fought SARS did not have [the benefit of hindsight] as they faced a new and unknown disease’ (Campbell, 2006a, p. 19).
- *Closure for survivors.* Increasingly, inquiry reports recognise and seek to address the suffering and distress of the victims and their families by providing detailed evidence of the circumstances to facilitate psychological

closure. In the Marchioness disaster inquiry, the inquiry team stated that:

No-one who has attended this inquiry could fail to have been affected by the emotion and strong feelings which the events of 20th August 1989 and its aftermath have engendered. We certainly have... we can only hope that this inquiry will have played some small part in helping [the survivors] to put this appalling tragedy behind them.
(Clarke et al, 2001, para. 40.73)

- *Learning exercise to avoid a repetition.* In Canada, the SARS Commission focused on the lessons that could be learnt from the failure to contain the outbreak and how similar failures could be prevented in the future (Campbell, 2006b, p. 1155).
- *Allocation of responsibility and blame.* While inquiries focus on finding out what happened and preventing it happening again, they often find failures to identify and mitigate risk and either explicitly or implicitly allocate blame for such failures. For example, in the UK, the inquiry into paediatric surgery at Bristol Royal Infirmary observed that staff at the hospital had collectively failed to protect the vulnerable children in their care as ‘Many [staff] failed to communicate with each other, and to work together in the interests of their patients. There was a lack of leadership and teamwork [with] a “club culture”; an imbalance of power, with too much control in the hands of a few individuals’ (BRI Inquiry, 2001, Synopsis).

Inquiries, blame and the COVID-19 pandemic

Anticipating the inquiries, deflecting blame

It was clear from an early stage of the COVID-19 pandemic that ‘when the time was right’, in most democratic countries,

especially those with high infection and death rates, there would be some sort of public or independent inquiry. This inquiry would examine how and in what ways the actions of the government and other agencies contributed to the excess death rate, what mistakes were made, who was responsible for them and how such mistakes could be avoided in the future. In the UK, the former head of the civil service, Lord Sedwill, acknowledged that an inquiry into the UK response to the COVID-19 pandemic was inevitable and ‘whenever it comes will need to address two big questions, one is whether our decisions were taken at the right time, and the second big question is ... what capabilities the state had ...’ (BBC 2020g).

The issue was raised in the UK during the first national lockdown. In a press briefing on 30 April 2020, Chris Whitty, the Chief Medical Officer, noted that while it was important to learn lessons, this should be done at some time in the future when the pandemic was over, stating ‘you must learn lessons at the right point but what you don’t do frankly is do that in the middle of something’ (YouTube, 2020b).

Some policy makers have sought to protect themselves from future blame. Donald Trump sought to deflect the blame for the pandemic onto experts and outsiders. In his White House press briefing on 14 April 2020, he attacked and blamed international experts (WHO) and the Chinese for allowing COVID-19 to become a pandemic:

Today I’m instructing my administration to halt funding of the World Health Organization while a review is conducted to assess the World Health Organization’s role in severely mismanaging and covering up the spread of the coronavirus. Everybody knows what’s going on there ... Had the WHO done its job to get medical experts into China to objectively assess the situation on the ground and

to call out China's lack of transparency, the outbreak could have been contained at its source, with very little death ...
(Hains, 2020)

Emerging inquires

Policy makers' reluctance to engage in inquiries during the pandemic has not prevented such inquiries. From early in the pandemic there have been investigations by newspapers, political parties, regional and national assemblies and governments, even an international assembly, the WHO.

The World Health Organization inquiry

In May 2020, at the virtual 73rd meeting of the World Health Assembly, member states including China and the US passed a resolution calling on the WHO to set up 'an independent and comprehensive evaluation of the lessons learned from the international health response to COVID-19' (WHO, 2020c). The panel was to operate independently of the WHO. It was jointly chaired by two politicians, Helen Clark (the former Prime Minister of New Zealand) and Ellen Johnson Sirleaf (former President of Liberia). The co-chairs selected their own panel of experts and secretariat and were to report back in September and November and submit a report in May 2021. It will be interesting to see whether this inquiry examines why SARS was effectively contained whereas COVID-19 was allowed to spread. In particular, why most countries, starting with China (Honigsbaum, 2020), downplayed the virus as flu-like, concealed information and delayed action, allowing the virus to spread and take hold, a catastrophic failure of risk management. The Chinese authorities have given permission for a party of WHO experts to visit Wuhan. However, the scope of this investigation will be limited to identifying the source of the outbreak, how and where the virus jumped from animals to humans, not the failure of local officials to recognise and manage the danger. One of the investigating experts described the purpose of the visit in the following way: 'It's really not about finding a guilty country ... It's about trying to understand what happened and then see

if, based on those data, we can try to reduce the risk in the future' (BBC, 2020h).

Inquiries in the UK

In the UK, influential individuals such as Richard Horton (2020), newspapers and parliamentary committees have investigated government COVID-19 policies.

On 25 October 2020, *The Sunday Times* published an investigation into the initial government response to the pandemic (Insight, 2020). The Insight team focused on the ways in the government had used risk categorisation to ration health care and the ways in which this contributed to the high number of excess deaths in the first wave (Insight, 2020). The article started with an analysis of the excess death rate in the UK, noting that most of these had taken place outside hospitals and arguing that these were a product of the policy to 'Protect the NHS':

There were 59,000 extra deaths in England and Wales compared with previous years during the first six months of the pandemic. This included 26,000 excess fatalities in care homes and another 25,000 in people's own homes.

Surprisingly only 8,000 of these excess deaths were in hospital, even though 30,000 people died from the virus on the wards. This shows that many of the deaths that would normally have taken place in hospital had been displaced to people's homes and the care homes.

(Insight, 2020, p. 7)

The article then used eye-witness accounts to illustrate the personal consequences of this policy. Vivien Morrison, whose father died on 5 April 2020, described his death in the following way:

Vivien says she was told by the doctor that her father would not be given intensive care treatment or mechanical ventilation because he 'ticked too many boxes' under the guidelines the hospital was using ... His family fear the hospital was rationing healthcare while infection levels approached the peak. 'He was written off,' she said.

Unusually, Vivien and her sister were allowed to visit their father one last time ... What they saw horrified them. Vivien described it as a 'death ward' for the elderly in a complaint she later made in the hospital. Inside, were eight elderly men infected with the virus who she describes as 'the living dead'. As they lay 'half-naked in nappies' in the stifling heat, 'it was like a war scene'.

(Insight, 2020, p.7)

The investigation argued that the root cause of the problem was the slow UK response to warnings about the threat of COVID-19. It blamed the Prime Minister for delaying the lockdown.

In the summer of 2020, the Public Accounts Committee of the House of Commons conducted reviews of the government response to COVID-19. One review focused on the impact of government policies on the care sector. The committee of MPs acted as an inquisitorial panel, summoning and interviewing key officials and inviting written evidence from interested parties such as representatives of the care sector. The committee concluded that, while the NHS had coped with the first wave of the virus, it had partly done so at the cost of the care sector. The committee noted that 'by postponing a large amount of planned work, the NHS was severely stretched but able to meet overall demand for COVID-19 treatment during the pandemic's April peak' (Public Accounts Committee, 2020). However, the care sector did not perform as well:

Years of inattention, funding cuts and delayed reforms have been compounded by the Government's slow, inconsistent and, at times, negligent approach to giving the sector the support it needed during the pandemic. This is illustrated by the decision to discharge 25,000 patients from hospitals into care homes without making sure all were first tested for COVID-19, a decision that remained in force even after

it became clear people could transfer the virus without ever having symptoms.

(Public Accounts Committee, 2020)

Australia

In Australia, there were also parliamentary inquiries both at Commonwealth (Federal) and State level. The inquiry in Victoria State was undertaken by the Public Accounts and Estimates Committee (PAEC, 2020). In July 2020, the inquiry published an interim report that included a majority report supported by members of the governing Labor party and a minority report written by three members of opposition parties.

The majority report was a fairly bland description of the impact of the pandemic on the health and social care system and on different parts of the Victorian economy and administration. The report focused on learning from the pandemic and made 23 recommendations for improvements (PAEC, 2020, para 2.4.2). The minority report attacked the Labor government for its failures:

Our criticism is directed solely at the Andrews Government in its management of the pandemic. The fact no other state in Australia has suffered a second wave outbreak speaks volumes as to the failures this Government has presided over during the pandemic ... As PAEC moves to a second round of hearings it will be incumbent on the Andrews Government to cease obfuscating, answer questions about the hotel quarantine debacle and show real leadership by taking responsibility for its failures during this pandemic instead of seeking to lay the blame on everyone else. Victorians deserve better.

(PAEC, 2020 Minority Report, paras 7.4 and 7.5)

Comment

While the virus was still spreading round the globe, the actions and inactions of governments was already coming

under scrutiny and being subject to inquiries. Governments were aware of such scrutiny and responded by seeking to present their actions in the best possible light and trying to deflect blame.

Case study: The Ischgl and Paznaun Valley inquiry

In this case study, I will focus on one of the first independent inquiries. It was a small-scale inquiry that reported quickly. It was set up on 14 May 2020 and reported on 12 October 2020 (Hersche et al, 2020). It focused on the events that took place over a short period of time, less than a month, in one ski resort (Ischgl) in one valley (Paznaun) in Austria.

Pressure for an inquiry

By the summer of 2020, it had become clear that the European Alpine ski resorts had played a key role in the transmission of the virus from China into Europe. Media coverage of events in early March in Ischgl suggested that the authorities had sought to protect the local tourist industry by covering up evidence that the virus was in the valley and allowing infected tourists to leave and spread the infection.

There was evidence that local agencies had not reacted promptly to reported incidence of COVID-19. The resort has been linked to infections in 45 countries and a consumer rights group decided to take legal action against the Austrian authorities (BBC, 2020i).

The Regional Governor of the Tyrol responded to these criticisms by appointing a panel to investigate and report on what happened in early March in the valley.

The setting up and operation of the inquiry

On 14 April 2020, the regional government set up a Commission of independent experts chaired by Dr Ronald Rohrer, a former supreme court judge, to investigate the management of COVID-19 in the region and 'to provide a comprehensive, transparent and independent evaluation

of the management of the COVID-19 pandemic in Tyrol' (Rohrer, 2020, p. 1).

The Commission was not a formal public inquiry. Rather, it was an independent commission of experts that conducted a behind-closed-doors investigation. The terms of appointment made it clear that the Commission was to have the fullest possible access to relevant files and should be supported by all the relevant authorities. The Commission was to examine and report on all the measures taken by the relevant authorities in the Tyrol. These terms of references excluded any examination of the role of national politicians and authorities. It also excluded allocation of blame (Rohrer, 2020, p. 2).

The Commission interviewed 53 representatives of various authorities and agencies in Tyrol and accessed 5,789 pages of documents. The Commission reported to the Tyrolean Parliament in October 2020 and published a full report (Hersche et al, 2020) plus a summary in English (Rohrer, 2020).

Findings

The timeline of the spread of the virus

The Commission outlined the key dates in the spread of COVID-19 (Hersche et al, 2020, pp 13–14). The first Austrian case was a German woman who tested positive in Germany on 28 January having stayed in Tyrol from 24 to 26 January. She was one of four individuals who tested positive following a business meeting with an infected Chinese woman in Bavaria. By the end of February, the virus had reached Ischgl and surrounding areas. On 26 February, a member of a group of Icelandic tourists had symptoms. Eleven of the party returned home on 29 February and had symptoms between 29 February and 3 March. On 4 March, the Icelandic authorities reported these on the international Early Warning and Response System. They reported eight COVID-positive cases and on 5 March added a further six cases. Three Norwegian Erasmus students who had visited the après-ski bar, Kitzloch, on 28 February tested positive on 5 March. On 7 March, a waiter from the Kitzloch bar tested

positive. On 9 March, a further 14 employees and one guest of the Kitzloch bar tested positive.

The local agencies responded to the warning from Iceland by initiating testing and contact tracing. However, on 5 March and again on 8 March, local agencies issued reassurances that community transmission was unlikely. On 13 March, the state governor announced that the ski season would end at the weekend (15 March). However, on the same day, the Austrian Chancellor announced the imposition of quarantine in the Paznaun valley and neighbouring resorts. This announcement created panic and an immediate and disorderly evacuation of the area. Although the police did take the names of some of those leaving the area, this information was not passed on to the tourists' home countries.

What went wrong and whose fault was it?

Although the Commission was specifically prohibited from allocating blame, this was in reality impossible as their analysis of what happened could not be separated from why it happened and therefore who was responsible.

The Commission did not find any evidence that local and regional authorities had been subject to external pressure, that is, from tourist agencies. They found that the decisions made by these authorities and their employees were 'made on their own initiative and without pressure from a third party' (Rohrer, 2020, p. 3). They also observed that the authorities were making decisions in challenging circumstances (Rohrer, 2020, p. 3).

However, they did identify crucial failures. Local agencies hesitated and failed to act promptly and effectively. As soon as they had evidence of community transmission, for example from positive tests of the Icelandic tourists and waiter at the Kitzloch bar, they should have issued warnings and taken measures to restrict social interactions. Instead, they decided to wait and see while issuing reassuring messages.

The Commission reserved its main criticism for the central authorities. The Commission noted that the local agencies in Tyrol were working within the framework of existing administrative laws. These laws were outdated and the Federal Ministry responsible for health had failed to 'publish

the revised pandemic plan despite early knowledge of the risk of infection' (Rohrer, 2020, p. 4). The Ministry had failed to ensure that the 'obsolete Epidemics Act 1950' was workable in tourist areas. The Commission concluded that 'the district administrative authorities were not supported in their decision making and that the necessary rapid intervention was hindered' (Rohrer, 2020, p. 4).

National authorities also shared responsibility with the local agencies for the failure to close down the skiing season and evacuate all tourists and non-local workers in a timely, orderly and safe manner. The national authorities failed to communicate with local agencies and the Federal Chancellor's public statement contributed to the disorderly evacuation of the valley (Rohrer, 2020, p. 3).

Risk implications

The Ischgl and Paznaun Valley inquiry is likely to be a precursor of larger, national inquiries into the ways in which the actions of governments and other agencies contributed to the spread of COVID-19.

When setting up the Commission, the Tyrolean authorities sought to limit its scope. By stipulating the Commission should be made up of technical experts, it excluded lay representatives and effectively limited the scope of the inquiry to the technical aspects of risk and excluded its emotional and moral dimensions. The authorities also sought to avoid the allocation of blame. Given the autonomy of the Commission, this restriction was only partially successful. The Commission concentrated on the technical aspects of the spread of COVID-19. However, it did clearly allocate blame to both local agencies and the national government. Using hindsight, the Commission identified the time and ways in which Austrian authorities had failed to effectively identify, respond to and communicate risk. When the local agencies had clear evidence of community transmission from both international and local sources, they failed to communicate this risk and to take effective action. When the local and national agencies did decide to take action, they again failed to communicate

effectively and failed to manage a safe evacuation of the valley. This allowed the virus to spread to other countries.

Comment

Risk is not only about trying to predict and improve the future; it is also about understanding and accounting for past misfortunes, for missed opportunities to avoid or mitigate risk. The SARS epidemic in 2003–4 was a near miss. Thanks to good luck and good scientific and public health work, the world avoided a pandemic. Regrettably in 2020, the science and public health were not enough. Current inquiries are already showing how officials, often acting to please populist leaders, concealed information and delayed actions, allowing the virus to spread relatively unchecked. When this happened, countries were left with no option but to introduce draconian lockdowns to prevent hospitals from being overwhelmed and to reduce the body count. The COVID-19 pandemic was a man-made disaster and inquiries are already beginning to uncover the ways in which some policy makers hesitated and allowed the virus to get out of control.

Conclusion

What we can learn from the COVID-19 pandemic

Risk played an important role in shaping policy makers' choices and they used it to justify their decisions. However, risk does not make decisions. It provides the knowledge that can help policy makers and others make decisions or to understand and explain why certain decisions were made. Thus, failure of policy makers in some countries to recognise, communicate and effectively control COVID-19 was a result of bad choices and a failure to understand and use risk effectively.

The challenge of dealing with a novel disease

In early 2020, SARS-CoV-2 was a novel virus and therefore there was no evidence on which to base risk assessments. At the start of the pandemic, policy makers had to find a way of making sense of the threat posed by COVID-19 and the different ways in which they did this shaped the success of their subsequent policies. Countries on the western Pacific Rim mostly framed the new disease in terms of SARS, a highly infectious and lethal virus but one that could be identified and controlled using strict public health measures such as quarantine and track and trace. Countries in Europe and North America generally framed the new virus as a form of seasonal flu. Seasonal flu is difficult to control but, apart from vulnerable individuals in the population, most people only have a mild short-lived illness. Since it is difficult or impossible to control the spread of seasonal flu, it is usually managed by protecting the vulnerable sections of the population by vaccination and/or 'cocooning', advising these people to limit their social contacts. The virus is allowed to spread

through the rest of the population and eventually disappears as the healthy population build up herd immunity.

Countries that framed COVID-19 as SARS generally managed the disease effectively, mostly limiting its spread to sporadic cases or small clusters. Indeed, several countries such as Taiwan and New Zealand have declared themselves COVID-free. While SARS-CoV-2 is similar to SARS, there are important differences. Generally, SARS was transmitted by symptomatic individuals when the illness was well established, which simplified the task of identifying cases and tracing and isolating contacts. SARS-CoV-2 could be transmitted by individuals who did not have obvious symptoms. This made quarantining, tracking and tracing challenging. In countries that were 'COVID-free', new cases appeared. In New Zealand, 'smouldering transmission' between asymptomatic individuals may explain why new cases were identified after a gap of over 100 days (Wood, 2020).

Countries that framed COVID-19 as seasonal flu generally did less well as their policy makers initially adopted a wait-and-see approach. However, in some countries which were not immediately threatened by the virus, such as New Zealand and Senegal, the initial 'quiet' phase was used to plan so that when (a few) cases were identified suggesting community transmission they were able to adopt public health measures while the numbers were still low. In countries such as the UK and US, however, where initial warning signs were disregarded and the flu/herd immunity approach was adopted, community transmission became well established. As the number of cases rose so did admissions to hospital and into ICUs, threatening to overwhelm capacity and staffing. This was followed by increasing death rates, especially amongst the most vulnerable sections of the population. This left policy makers with a difficult choice. The public health option of tracing and isolating contacts was no longer feasible. The choice was between a high death rate and a lockdown of economic and social activity. Most policy makers chose lockdown.

Unpacking risk: probability and outcomes

Risk is about the probability of different outcomes. The probabilistic aspect of risk is based on calculations based on past events, and is generally expressed in some form of numbers. This is essentially a technical exercise in which researchers such as epidemiologists play a key role. In the early stages of the pandemic as evidence on infection and fatality rates emerged, the terminology, models and predictions of epidemiologists became part of the public discourse about COVID-19. Policy makers tended to equate risk with probability and disregarded other aspects of risk such as outcomes.

While probability is technically complex, outcomes involve a different sort of complexity: that of values. When the focus is on one outcome, dying of COVID-19, then it is self-evident that not dying is a far better outcome than dying. However, when there are multiple outcomes, especially when these affect different social groups in different ways, then the choices become more difficult. Such choices involve value judgements, which are different to estimations of probability. Value judgements should be a reflection of collective societal values and therefore, in a democratic society, involve some public engagement. This could clearly be seen in the collective decisions around the new COVID-19 vaccines in December 2020. In the UK, the priority groups were selected behind closed doors by a committee of experts. There was no public engagement. There was explicit recognition that the choice reflected the important value of protecting the most vulnerable and those who provide health and social care for them. However, the main justification for the choice was a pragmatic one: given these groups were those that received the seasonal flu vaccination, it was relatively straightforward to give them COVID-19 vaccinations. There has been little public debate about how allocating vaccines to older and vulnerable people deprives other groups who have suffered during the pandemic of the benefits of vaccination nor the missed opportunities to disrupt transmission or address social inequalities.

While categorisation identifies the groups with common characteristics such as age, gender, ethnicity or occupation, it

does not assign a particular value. The value is assigned by the way in which the categorisation is used in decision making. Thus, in the UK in the first nine months of the pandemic, the valuation and prioritisation of older people oscillated. In the:

- *early herd immunity stage*, policy makers were willing to accept that some older people would die, allowing younger people to continue with their normal social economic and educational activities;
- *first lockdown*, priorities changed; the protection of the health of older people and other vulnerable people became the top priority;
- *first wave, protecting hospitals and ICU beds* was also imperative. Most hospitals prioritised the care of younger more 'treatable' patients so older less treatable patients were either denied intensive care or discharged home or to care homes where many spread the virus;
- *vaccination strategy*, older people, especially those in care homes, were again top priority.

Given the ambivalence about ageing and old age in contemporary high-income countries, such oscillations are perhaps unsurprising but what is more surprising is that these judgements were all made behind closed doors with no public involvement. They were treated as technical expert judgements and risk was often invoked to justify them. Policy makers were unwilling to acknowledge that they had or were making value judgements. These judgements were concealed behind the mantra of 'following the science'. When investigators did expose the ways in which value judgements had been made, as in the 'herd immunity' phase in the UK or in the commissioning and use of a decision-making tool which effectively excluded older people from intensive care, policy makers strongly denied they were making value judgements.

While behind-closed-doors decision making could be justified by the complexity and sensitivity of the issues involved and the need to make quick decisions, it did have some consequences, including:

- undermining public trust in decision making

- opening the space for alternative pandemic narratives
- creating the space for conspiracy theories.

Public trust and risk communication

During the pandemic, policy makers wanted to communicate the dangers of COVID-19 and solicit support for various measures to restrict the spread of the virus. Acceptability of such messaging depended on trust. Policy makers needed to communicate complex scientific and epidemiological concepts in a way that could be understood and accepted by the population and would result in behavioural changes that limited or stopped the spread of the virus. The information could be and was simplified, turned into simple slogans such as the Japanese 3Cs, the English ‘STAY HOME>PROTECT THE NHS>SAVE LIVES’ or the New Zealand ‘Stay home, break the chain of transmission, and save lives’ and ‘Unite against COVID-19’ (Ardern, 2020c). However, the impact of such messages depended on the receptiveness of the public and how willing they were to trust the messengers. There was very limited engagement with the public or openness in much of the communication between policy makers and the public. Such limitations could be overcome by empathic leaders who tapped into altruism and created the sense of a collective endeavour. Jacinda Ardern was able to project calmness and compassion (Johnson, 2020b). Similarly, in Japan, the Prime Minister, Shinzo Abe, was able to use the traditional cultural strategy of humility to communicate the public health message. In both New Zealand and Japan, the initial message had been one of reassurance but in both countries there was a rapid adjustment to the dangers of COVID-19.

Other countries and leaders were not as successful in seeing the danger and in adjusting their policies and messaging. In both the UK and US, the reaction was slow and muddled with tension between political leaders and other policy makers. Furthermore, in both countries presentation of the messages was poor. In the UK, during the first wave there was a daily broadcast briefing in which the Prime Minister or another minister, flanked by two technical experts, made

a speech delivering the latest news. There was an element of public discourse in these briefings: selected members of the public and journalists were allowed to ask questions and even to follow up the answers but more often than not the policy makers refused to engage with the substance of the question.

Providing opportunities for pandemic narratives

Risk often appears as a very abstract impersonal concept, probabilities expressed by numbers. Indeed, for policy makers it is precisely the apparent objectivity, lack of emotion and the malleability of numbers that makes them so attractive. Policy makers' communications tended to focus on the objective facts such as the rates of infections, hospitalisations and deaths. The media reporting of the pandemic did include these facts; however, it was broader and in much reporting there were narratives in which the facts were combined with and illustrated by personal stories. Such narrative matrices provided an emotional and moral context for the pandemic, enabling the audience to grasp the scale and suffering and also to identify the failings that contributed to such suffering.

Leaving space for conspiracy theories

Policy makers' lack of openness and concentration on technical issues created space that could be filled by the fantasies of conspiracy theorists. One of the remarkable features of the COVID-19 pandemic was the speed with which scientists identified the virus causing the illness, SARS-CoV-2. Within weeks it was identified as a coronavirus, genetically sequenced, a mechanism identified for testing for it and work on a vaccine started. By March 2020, there was evidence for the risks which the virus presented. Paradoxically, this scientific assessment of the risk was almost immediately contested by conspiracy theorists who either claimed the virus was a product of technology or was a hoax. Conspiracy theorists such as anti-vaxxers argued that science created and did not mitigate risk. The pandemic provided ideal conditions for them to

spread their ideas. It created fear and anxiety, compounded in some countries by inconsistent public health messaging. The lockdown deprived many people of their normal social networks that would anchor them in shared reality and it gave them the time and opportunity to surf the internet looking for the ‘truth’ about COVID-19. Conspiracy theorists were happy to supply their version of the truth despite the efforts of media platforms such as Facebook to counter such alternative realities.

Inquiries and hindsight: the time for reckoning

As Mary Douglas (1990) has observed, risk, like sin, works backwards as well as forwards. With hindsight, it is possible to unsettle the past and imagine an alternative one. This can be done through an inquiry which asks whether, if things had been done differently, the outcome would have been different and better. While policy makers have argued that in the middle of a pandemic it is too early to answer such questions, this has not stopped researchers, journalists and politicians from asking these questions. It has already become clear that in countries with high infection and death rates, such as the US, UK and Brazil, policy makers failed to effectively recognise the risk of SARS-CoV-2 and to take and communicate timely action. One politician has already paid the price for his failure, Donald Trump; it is to be hoped that others will follow soon.

References

- Alaszewska, J. and Alaszewski, A. (2015) 'Purity and danger: shamans, diviners and the control of danger in premodern Japan as evidenced by the healing rites of the Aogashima islanders', *Health, Risk & Society*, 17(3–4): 302–25.
- Alaszewski, A. (2003) 'Risk, trust and health', *Health, Risk & Society*, 5(3): 235–9.
- Alaszewski, A. (2011) 'Personal view: how campaigners and the media push bad science', *BMJ*, 2011; 342. <http://dx.doi.org/10.1136/bmj.d236>
- Alaszewski, A. (2015) 'Anthropology and risk: insights into uncertainty, danger and blame from other cultures – A review essay', *Health, Risk & Society*, 17(3–4): 205–25.
- Alaszewski, A. (2020) 'Should pregnant women be in a high risk Covid-19 category?' *British Journal of Midwifery*, 28(10): 732–4.
- Alaszewski, A. and Brown, P. (2007) 'Risk, uncertainty and knowledge', *Health, Risk & Society*, 9(1): 1–10.
- Alaszewski, A. and Brown, P. (2012) *Making Health Policy: A Critical Introduction*, Cambridge: Polity Press.
- Alaszewski, A. and Burgess A. (2007) 'Risk, time and reason', *Health, Risk & Society*, 9(4): 349–58.
- Alaszewski, A. and Horlick-Jones, T. (2003) 'How can doctors communicate about risk more effectively?', *BMJ*, 327(7417): 728–31. doi:10.1136/bmj.327.7417.728
- Aptaclub (2020) 'Over half of pregnant women and new mums feel anxious or lonely during ongoing Covid crisis', press release, 22 June 2020.
- Ardern, J. (2020a) 'Prime Minister: COVID-19 Alert Level increased', 23 March 2020, Available from: www.beehive.govt.nz/speech/prime-minister-covid-19-alert-level-increased [Accessed 15 December 2020].
- Ardern, J. (2020b) 'Review of COVID-19 Alert Level 2', Available from: <https://covid19.govt.nz/assets/resources/proactive-release-2020-july/AL2-Minute-and-Paper-CAB-20-MIN-0270-Review-of-COVID-19-Alert-Level-2-8-June-2020.PDF> [Accessed 15 December 2020].
- Ardern, J. (2020c) "'Stay at home, break the chain, and save lives": NZ PM', 27 March 2020, Available from: www.news.com.au/world/stay-at-home-break-the-chain-and-save-lives-nz-pm/video/45a684a63759808d9a2b4cf4f240ed24 [Accessed 15 December 2020].

- Ashworth, E. (2020) 'Covid-19 and the UK's maternity services', Available from: www.aims.org.uk/journal/item/giving-birth-in-covid-19 [Accessed 6 July 2020].
- Audet, C. (2020) 'Giving birth amid a pandemic in Belgium: the challenges faced by mothers and midwives', Available from: <https://blogs.bmj.com/covid-19/2020/04/30/giving-birth-amid-a-pandemic-in-belgium-the-challenges-faced-by-mothers-and-midwives/> [Accessed 4 September 2020]
- Barr, C., Kommenda, N., McIntyre, N. and Voce, A. (2020a) 'Revealed: scale of coronavirus's deadly toll of ethnic minorities', *The Guardian*, 23 April, pp. 1 and 8.
- Barr, C., Kommenda, N., McIntyre, N. and Voce, A. (2020b) 'Ethnic minorities dying of Covid-19 at higher rate, analysis shows', *The Guardian*, 23 April, Available from: www.theguardian.com/world/2020/apr/22/racial-inequality-in-britain-found-a-risk-factor-for-covid-19 [Accessed 15 December 2020].
- BBC (2020a) 'Coronavirus: pregnant women "should keep antenatal appointments"', *BBC News*, 17 March, Available from: www.bbc.co.uk/news/uk-51925455 [Accessed 15 December 2020].
- BBC (2020b) 'The Forgotten Frontline', *Panorama*, BBC, 6 August, Available from www.bbc.co.uk/programmes/m000lbq0 [Accessed 15 December 2020].
- BBC (2020c) 'Coronavirus: New Zealand minister resigns after lockdown blunders', *BBC News*, 2 July, Available from: www.bbc.co.uk/news/world-asia-53259236 [Accessed 15 December 2020].
- BBC (2020d) 'Coronavirus: 13-year-old boy dies, says London hospital trust', *BBC News*, 31 March, Available from: www.bbc.co.uk/news/uk-52114476 [Accessed 15 December 2020].
- BBC (2020e) 'The Forgotten Frontline', *Panorama*, BBC, 30 July, Available from: www.bbc.co.uk/programmes/m000lbq0 [Accessed 15 December 2020].
- BBC (2020f) 'Coronavirus: WHO advises to wear masks in public areas', 6 June, Available from: www.bbc.co.uk/news/health-52945210 [Accessed 15 December 2020].
- BBC (2020g) '"We didn't have exact measures" in place for Covid says ex-civil service head', *BBC News*, 21 October, Available from www.bbc.co.uk/news/uk-politics-54617148 [Accessed 15 December 2020].
- BBC (2020h) 'Covid: WHO to investigate virus origins in China's Wuhan', 16 December, Available from: www.bbc.co.uk/news/world-asia-china-55333200 [Accessed 15 December 2020].
- BBC (2020i) 'Ischgl: Austria sued over Tyrol ski resort's Covid-19 outbreak, 23 September', *BBC News*, Available from: www.bbc.co.uk/news/world-europe-54256463 [Accessed 15 December 2020].
- Beck, U. (1992) *Risk Society: Towards a New Modernity*, London and Thousand Oaks, CA: Sage.
- Berenson, A. (2020a) *Unreported Truths about COVID-19 and Lockdowns: Part 1: Introduction and Death Counts and Estimates*, Alex Berenson.
- Berenson, T. (2020b) 'Donald Trump's closing message to Americans: ignore COVID-19', *msn news*, 21 October, Available

- from: www.msn.com/en-us/news/politics/donald-trumps-closing-message-to-americans-ignore-covid-19/ar-BB1azA65 [Accessed 15 December 2020].
- Bernstein, P.L. (1996) *Against the Gods: The Remarkable Story of Risk*, New York: John Wiley and Sons.
- Bindel, J. (2020) '13 murdered women: I was nearly one of them', News Review, *The Sunday Times*, 15 November, Available from: <https://www.thetimes.co.uk/article/peter-sutcliffe-murdered-13-women-i-was-nearly-one-of-them-k6sq8rhvk?region=global&ni-statuscode=acsaz-307> [Accessed 24 February 2021].
- Birthright (2020) 'Coronavirus', Available from: www.birthrights.org.uk/campaigns-research/coronavirus/ [Accessed 6 July 2020].
- BRI [Bristol Royal Infirmary] Inquiry (2001) *Learning from Bristol: The Report of the Public Inquiry into Children's Heart Surgery at the Bristol Royal Infirmary 1984–1995*, Chair Ian Kennedy, CM 5207, London: HMSO.
- Brown, P. and Calnan, M. (2012) *Trusting on the Edge: Managing Uncertainty and Vulnerability in the midst of Mental Health Problems*, Bristol: Policy Press.
- BMJ (2016) 'Stephen Bolsin: whistleblower on the Bristol scandal', *BMJ*, 2016; 352. <https://doi.org/10.1136/bmj.i1328>
- BMJ Obituary (2019) 'Richard Lacey: microbiologist who came under fire for claiming a link between mad cow disease and variant CJD in humans', *BMJ*, 2019; 364. <https://doi.org/10.1136/bmj.l1078>
- Burgess, A. (2002) 'Comparing national responses to perceived health risks from mobile phone masts', *Health, Risk & Society*, 4(2): 175–88.
- Burgess A. (2017) 'The development of risk politics in the UK: Thatcher's "Remarkable" but forgotten "Don't Die of Ignorance" AIDS campaign', *Health, Risk & Society*, 19(5–6): 227–45.
- Cabinet Office (2020) 'Staying alert and safe (social distancing)', 11 May, Available from: www.gov.uk/government/publications/staying-alert-and-safe-social-distancing/staying-alert-and-safe-social-distancing [Accessed 18 May 2020].
- Campbell, A. (2006a) *Spring of Fear*, Chapter 1, The Sars Commission, Available from: www.archives.gov.on.ca/en/e_records/sars/report/v2-pdf/Vol2Chp1.pdf [Accessed 15 December 2020].
- Campbell, A. (2006b) *Spring of Fear*, Chapter 9: Recommendations, The Sars Commission, Available from: www.archives.gov.on.ca/en/e_records/sars/report/v3-pdf/Vol3Chp9.pdf [Accessed 15 December 2020].
- Campbell, C. (2020) 'The Chinese scientist who sequenced the first COVID-19 genome speaks out about the controversies surrounding his work', *Time*, 24 August, Available from: <https://time.com/5882918/zhang-yongzhen-interview-china-coronavirus-genome/> [Accessed 15 December 2020].
- Campbell, D., Topping, A. and Barr, C. (2020) 'Virus patients more likely to die may have ventilators taken away', *The Guardian*, 1 April, Available from: www.theguardian.com/society/2020/apr/01/ventilators-may-be-taken-from-stable-coronavirus-patients-for-healthier-ones-bma-says [Accessed 15 December 2020].
- Camus, A. (1960) *The Plague*, Harmondsworth: Penguin.

- Captain Tom Foundation (2020) 'A tribute to our heroes', Available from: <https://captaintom.org/story> [Accessed 15 December 2020].
- CARE (2020) 'Vaccins contre le SARS-CoV-2: Une Strategie de Vaccination', 9 July, Available from: www.scribd.com/document/470275663/avis-vaccins-9-juillet-2020-care-conseil-scientifique-comite-vaccin-pdf#fullscreen&from_embed [Accessed 15 December 2020].
- CDC [Centers for Disease Control and Prevention] (2020a) 'Coronavirus disease 2019 (Covid-19): people who are at higher risk for severe illness', Available from: www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-at-higher-risk.html, last review 14 May 2020 [Accessed 14 May 2020].
- CDC (2020b) 'Considerations for wearing masks', updated 4 November, Available from: www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/cloth-face-cover-guidance.html [Accessed 15 December 2020].
- CDC (2020c) 'ACIP COVID-19 vaccines: Work Group interpretations of data', 30 October, Available from: www.cdc.gov/vaccines/acip/meetings/downloads/slides-2020-10/COVID-Oliver.pdf [Accessed 15 December 2020].
- Chen, L. (2020) 'The US has a lot to learn from Taiwan's Covid fight', *CNN Opinion*, 10 July, Available from: <https://edition.cnn.com/2020/07/10/opinions/taiwan-covid-19-lesson-united-states-chen/index.html> [Accessed 15 December 2020].
- Clarke, A.P. (2000) *Thames Safety Inquiry: Final Report by Lord Justice Clarke*, Cm 4558, London: HMSO, Available from: www.jesip.org.uk/uploads/media/incident_reports_and_inquiries/Marchionness-Bowbelle%20Incident%20-%20Thames%20Safety%20Inquiry.pdf [Accessed 15 December 2020].
- Clarke, A.P., Squire, D. and Bailey, T. (2001) *Marchioness/Bowbelle: Formal Investigation under the Merchant Shipping Act 1995, Volume I*, London: The Stationery Office, Available from: https://webarchive.nationalarchives.gov.uk/20141008142557uo_/http://assets.dft.gov.uk/marchionness-bowbelle.org.uk/report/fi_report.pdf [Accessed 15 December 2020].
- Cole, W. (2020) 'Britain abandoned test and trace for coronavirus earlier this year because officials could only handle FIVE cases per week, SAGE documents show', *Mail Online*, Available from: www.dailymail.co.uk/news/article-8373149/Britain-abandoned-Covid-test-track-officials-handle-FIVE-cases-week.html [Accessed 15 December 2020].
- Crowson, I. and Bennett, A. (2020) 'Virus tragedy: pregnant nurse, 28, dies of coronavirus five days after her baby is saved by emergency C-section in "beacon of light"', *The Sun*, 15 April, Available from: www.thesun.co.uk/news/11403855/pregnant-nurse-dies-coronavirus-baby/ [Accessed 15 December 2020].
- Curl, J. (2020) 'COVID-19 turning out to be huge hoax perpetrated by media', *The Washington Times*, 28 April, Available from: www.washingtontimes.com/news/2020/apr/28/covid-19-turning-out-to-be-huge-hoax-perpetrated-b/ [Accessed 15 December 2020].

- Daly, R. (2020) 'Ian Brown likens coronavirus to "common cold" in new tweet', *NME*, 18 October, Available from: www.nme.com/news/music/ian-brown-likens-coronavirus-common-cold-new-tweet-2790209 [Accessed 15 December 2020].
- Defoe, D. (2001) *A Journal of the Plague Year*, New York: The Modern Library.
- Department of Health (1993) *The Health of the Nation Key Area Handbook: Accidents*, Leeds: Department of Health.
- Douglas, M. (1990) 'Risk as a forensic resource', *Daedalus: Journal of the American Academy of Arts and Sciences*, 119(4): 1–16.
- Douglas, M. (1992) *Risk and Blame: Essays in Cultural Theory*, London: Routledge.
- Douglas, M. (2002) *Purity and Danger: An Analysis of Concept of Pollution and Taboo* (Routledge Classic ed.), London: Routledge.
- Duignan, B. (2020) Enlightenment, *Britannica*, 10 September, Available from: www.britannica.com/event/Enlightenment-European-history [Accessed 15 December 2020].
- D'Souza, G.A. and Dowdy, D. (2020) 'What is herd immunity and how we achieve it with COVID-19?', 10 April, Available from: www.jhsph.edu/covid-19/articles/achieving-herd-immunity-with-covid19.html [Accessed 15 December 2020].
- Elwell-Sutton, T., Deeny, S. and Stafford, M. (2020) 'Emerging findings on the impact of COVID-19 on black and minority ethnic people', 20 May, Available from: www.health.org.uk/news-and-comment/charts-and-infographics/emerging-findings-on-the-impact-of-covid-19-on-black-and-min [Accessed 15 December 2020].
- Expert Meeting (2020) *Expert Meeting on Control of the Novel Coronavirus Disease Control: Analysis and Recommendations of the Response to the Novel Coronavirus (COVID-19)*, 1 April, Available from: www.mhlw.go.jp/content/10900000/000620826.pdf [Accessed 15 December 2020].
- Ferguson, N.M., Laydon, D., Nedjati-Gilani G. et al (2020) 'Impact of non-pharmaceutical interventions (NPIs) to reduce COVID-19 mortality and healthcare demand', Imperial College London, 16 March, Available from: www.imperial.ac.uk/media/imperial-college/medicine/sph/ide/gida-fellowships/Imperial-College-COVID19-NPI-modelling-16-03-2020.pdf [Accessed 15 December 2020].
- Freeman, M. (2020) 'The coronavirus 5G connection and cover-up', 18 February, Available from: <https://davidicke.com/2020/02/19/coronavirus-5g-connection-coverup/> [Accessed 15 December 2020].
- Full Fact (2020) 'Here is the transcript of what Boris Johnson said on This Morning about the new coronavirus', 10 March 2020, Available from <https://fullfact.org/health/boris-johnson-coronavirus-this-morning> [Accessed 2 February 2021].
- Ghebreyesus, T.A. (2020a) 'WHO Director-General's opening remarks at the media briefing on COVID-19 – 11 March 2020', WHO, Available from: www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020 [Accessed 15 December 2020].

- Ghebreyesus, T.A. (2020b) 'WHO Director-General's opening remarks at the media briefing on COVID-19 – 5 June 2020', Available from: www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---5-june-2020 [Accessed 15 December 2020].
- Giddens, A. (1991) *Modernity and Self-Identity: Self and Society in the Late Modern Age*, Cambridge: Polity Press.
- Green, J. (1999) 'From accidents to risk: public health and preventable injury', *Health, Risk & Society*, 1(1): 25–39.
- Goffman, E. (1975) *Frame Analysis: An Essay on the Organization of Experience*, Harmondsworth: Penguin Books.
- Goodman, A. (2020) 'Stay home, stay safe, be kind: what New Zealand can teach the world about eliminating COVID-19', *democracynow*, 26 May, Available from: www.democracynow.org/2020/5/26/new_zealand_coronavirus_response_jacinda_ardern [Accessed 15 December 2020].
- Gov.UK (2020) 'NHS Test and Trace: how it works', Available from: www.gov.uk/guidance/nhs-test-and-trace-how-it-works [Accessed 15 December 2020].
- Gov.UK (2021) 'Reg 174 information for UK healthcare professionals', Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/948334/Information_for_UK_healthcare_professionals_on_COVID-19_Vaccine_AstraZeneca.pdf [Accessed 15 December 2020].
- Government of Canada (2020) 'Coronavirus disease (COVID-19): prevention and risks', Available from: www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/prevention-risks.html, revised 12 May 2020 [Accessed 13 May 2020].
- Gross, S.E. and Shuval, J.T. (2008) 'On knowing and believing: prenatal genetic screening and resistance to "risk-medicine"', *Health, Risk & Society*, 10(6): 549–64.
- Habermas, J. (1989) *The Structural Transformation of the Public Sphere: An Inquiry into a Category of Bourgeois Society*, Cambridge, MA: MIT Press.
- Hancock, M. (2020) 'Health and Social Care Secretary's statement on coronavirus (COVID-19): 15 April 2020', 30 April, Available from: www.gov.uk/government/speeches/health-and-social-care-secretarys-statement-on-coronavirus-covid-19-15-april-2020 [Accessed 15 December 2020].
- Hains, T. (2020) 'Trump, Coronavirus Task Force hold White House briefing', 14 April 2020, *RealClear Politics*, Available from: www.realclearpolitics.com/video/2020/04/14/watch_live_trump_coronavirus_task_force_hold_white_house_briefing_tuesday_april_14.html#!o [Accessed 15 December 2020].
- Hern, A. (2020) 'Lost down the rabbit hole', *The Guardian*, G2, 11 November, pp. 4–7.
- Hersche, B., Kern, W., Stuber-Berries, N., Rohrer, R., Trkola, A. and Weber, K. (2020) 'Bericht der Unabhängigen Expertenkommission: Management Covid-19-Pandemie Tirol', 12 October, Available from: www.tirol.gv.at/presse/webinar-land-tirol/expertenkommission/ [Accessed 15 December 2020].

- Heyman, B., Shaw, B., Alaszewski, A. and Titterton, M. (2010) *Risk, Safety and Clinical Practice: Health Care through the Lens of Risk*, Oxford: Oxford University Press.
- Higgins-Dunn, N. (2020) “The death toll would be enormous,” Fauci says of herd immunity to coronavirus in the U.S., *CNBC*, Available from: www.cnn.com/2020/08/13/the-death-toll-would-be-enormous-fauci-says-of-herd-immunity-to-coronavirus-in-the-us.html [Accessed 15 December 2020].
- Honigsbaum, M. (2020) *The Pandemic Century: A History of Global Contagion from the Spanish Flu to Covid-19* (revised ed.), London: Penguin Random House.
- Horton, R. (2020) *The COVID-19 Catastrophe: What's Gone Wrong and How to Stop it Happening Again*, Cambridge: Polity Press.
- Hung, Y.W. (2020) ‘Creative public-private collaborations in Taiwan and South Korea bolster the fight against coronavirus’, *Stanford Social Innovation Review*, Available from: https://ssir.org/articles/entry/creative_public_private_collaborations_in_taiwan_and_south_korea_bolster_the_fight_against_coronavirus [Accessed 15 December 2020].
- Imai, N., Dorigatti, I., Cori, A., Riley, S. and Ferguson, N.M. (2020) *Report 1: Estimating the Potential Total Number of Novel Coronavirus Cases in Wuhan City, China*, Imperial College London COVID-19 Response Team, Available from: www.imperial.ac.uk/media/imperial-college/medicine/mrc-gida/2020-01-17-COVID19-Report-1.pdf [Accessed 15 December 2020].
- Insight (2020) ‘A weeping nurse said, “They are all going to die—no one is doing anything about it”’, *The Sunday Times*, 25 October, pp. 7–11.
- Jabs (2011) ‘Welcome to the support group for vaccine damaged children’, Available from: www.jabs.org.uk [Accessed 18 January 2011].
- Jackson, B. and Pederson, A.B. (2020) ‘Facing both Covid-19 and racism, Black women are carrying a particularly heavy burden’, *The Washington Post*, 4 September, Available from: www.washingtonpost.com/opinions/2020/09/04/facing-both-covid-19-racism-black-women-are-carrying-particularly-heavy-burden/ [Accessed 15 December 2020].
- Japanese Times (2020) ‘Japan confirms first case of coronavirus that has infected dozens in China’, *The Japanese Times*, 16 January, Available from: www.japantimes.co.jp/news/2020/01/16/national/science-health/japan-first-coronavirus-case/ [Accessed 15 December 2020].
- JCVI [Joint Committee on Vaccine and Immunisation] (2020a) ‘Advice on priority groups for COVID-19 vaccination’, 2 December, Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/940936/Priority_groups_for_coronavirus_COVID-19_vaccination_-_advice_from_the_JCVI_2_December_2020.pdf [Accessed 15 December 2020].
- JCVI (2020b) ‘Joint Committee on Vaccination and Immunisation’, Available from: www.gov.uk/government/groups/joint-committee-on-vaccination-and-immunisation [Accessed 15 December 2020].

- JCVI (2020c) 'Joint Committee on Vaccination and Immunisation: advice on priority groups for COVID-19 vaccination', Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/948338/jcvi-advice-on-priority-groups-for-covid-19-vaccination-30-dec-2020.pdf [Accessed 15 December 2020].
- Jetten, J., Reicher, S.D., Haslam, S.A. and Cruwys, T. (2020) *Together Apart: The Psychology of Covid-19*, London and Thousand Oaks, CA: Sage.
- John Hopkins University (2020a) 'Inside Taiwan's response to COVID-19', John Hopkins, Bloomberg School of Public Health, 24 April, Available from: www.jhsph.edu/covid-19/news-and-events/events/2020/april-24.html [Accessed 15 December 2020].
- John Hopkins University of Medicine (2020) 'Mortality Analyses', cited 23 September 2020, Available from: <https://coronavirus.jhu.edu/data/mortality> [Accessed 15 December 2020].
- Johnson, B. (2020a) 'Covid: Boris Johnson's press conference on alert tiers', 12 October, Available from: www.youtube.com/watch?v=pRC4RU1R7QE [Accessed 15 December 2020].
- Johnson, V. (2020b) 'When it comes to coronavirus, Ardern is winning on the world stage', *stuff*, 27 March, Available from: www.stuff.co.nz/national/politics/opinion/120590435/in-the-survivor-jungle-ardern-is-winning-the-communications-contest [Accessed 15 December 2020].
- Joint Inquiry (2002) *Part 1, Finding and Conclusions: Final Report*, 10 December, Available from: https://fas.org/irp/congress/2002_rpt/findings.html [Accessed 15 December 2020].
- Jordan, D. (2019) 'The deadliest flu: the complete story of the discovery and reconstruction of the 1918 pandemic virus', Available from: www.cdc.gov/flu/pandemic-resources/reconstruction-1918-virus.html [Accessed 15 December 2020].
- KCL [King's College London] (2020) 'New research identifies those most at risk from "long COVID"', 21 October, Available from: www.kcl.ac.uk/news/study-identifies-those-most-risk-long-covid [Accessed 15 December 2020].
- Kermani, S. (2020) 'Coronavirus: Whitty and Vallance faced "herd immunity" backlash, emails show', *BBC*, 23 September, Available from: www.bbc.co.uk/news/uk-politics-54252272 [Accessed 15 December 2020].
- Knapton, S. (2020) '"Rash" northern lockdown based on inaccurate data, says expert', *The Daily Telegraph*, 3 August, Available from: www.telegraph.co.uk/news/2020/08/02/lockdown-north-england-rash-decision-not-backed-data-oxford/ [Accessed 15 December 2020].
- Knight, M. et al, on behalf of the UK Obstetric Surveillance System SARS-CoV-2 Infection in Pregnancy Collaborative Group (2020) 'Characteristics and outcomes of pregnant women admitted to hospital with confirmed SARS-CoV-2 infection in UK: national population based cohort study', *BMJ*, 2020; 369, Available from www.bmj.com/content/369/bmj.m2107 [Accessed 6 August 2020].

- Kriesi, H. (2014) 'The populist challenge', *West European Politics*, 37(2): 361–78.
- Landes, R. and Katz, S.T. (2012) *The Paranoid Apocalypse: A Hundred-Year Retrospective on the Protocols of the Elders of Zion*, New York and London: New York University Press.
- Layne, N. and Caspani, M. (2020) 'New York police break up massive crowd at rabbi's funeral that defied virus shutdown', Available from: www.usnews.com/news/us/articles/2020-04-29/new-york-police-break-up-massive-crowd-at-rabbis-funeral-that-defied-virus-shutdown [Accessed 15 December 2020].
- Learn The Risk (n.d.) 'Learn The Risk.Org: Knowledge, Action, Health', Available from: <https://learntherisk.org> [Accessed 15 December 2020].
- Lewison, G. (2008) 'The reporting of the risks from severe acute respiratory syndrome (SARS) in the news media, 2003–2004', *Health, Risk and Society*, 10(3): 241–2. doi:10.1080/13698570802160962
- Litvinova, D. (2020) 'Putin orders "large-scale" COVID-19 vaccination in Russia', Associated Press, 2 December, Available from: www.sfgate.com/news/article/Putin-orders-large-scale-vaccination-of-15769550.php [Accessed 15 December 2020].
- Lynas, M. (2020) '5G: what's behind the latest COVID conspiracy theory?' *Alliance for Science*, 6 April, Available from: <https://allianceforscience.cornell.edu/blog/2020/04/5g-whats-behind-the-latest-covid-conspiracy-theory/> [Accessed 15 December 2020].
- McGrath, B. (2020) 'Japanese government facing growing criticism over Covid-19 outbreak', *World Socialist Website*, Available from: www.wsws.org/en/articles/2020/03/03/japa-m03.html [Accessed 15 December 2020].
- Mairal, G. (2011) 'The history and the narrative of risk in the media', *Health, Risk & Society*, 13(1): 65–79.
- Mance, H. (2016) 'Britain has had enough of experts, says Gove', *Financial Times*, 3 June, Available from: www.ft.com/content/3be49734-29cb-11e6-83e4-abc22d5d108c [Accessed 15 December 2020].
- Manthorpe, R. (2020) 'COVID-19: Liverpool mass testing pilot not reaching city's poorest people, leaked documents show', 11 December, Available from: <https://news.sky.com/story/covid-19-liverpool-mass-testing-pilot-not-reaching-citys-poorest-people-leaked-documents-show-12158317> [Accessed 15 December 2020].
- Mazza, E. (2020) 'Trump's bonkers coronavirus "herd mentality" claim lights up Twitter', *HuffPost US*, 16 September, Available from: www.huffingtonpost.co.uk/entry/donald-trump-herd-mentality_n_5f618e1ac5b6e27db134a42b?ri18n=true [Accessed 15 December 2020].
- Merriam-Webster (n.d.) 'Definition of triage', Available from: www.merriam-webster.com/dictionary/triage [Accessed 15 December 2020].
- Millis, L. and Prakash, V. (2020) 'Trump says US conducting "very thorough" probe into Covid-19 origins, refuses to dismiss "sources" pushing Chinese lab narrative', *Reuters*, 16 April, Available

- from: www.rt.com/news/485944-trump-chinese-lab-theory/ [Accessed 15 December 2020].
- Mohdin, A. (2020) “‘He was full of hope’: stories behind five of the 3,173 UK Covid deaths this summer”, *The Guardian*, 13 October, Available from: www.theguardian.com/world/2020/oct/13/he-was-full-of-hope-five-uk-covid-deaths-summer-stories [Accessed 3 February 2021].
- New Zealand Cabinet Office (2020) ‘Update on novel coronavirus: Infectious and Notifiable Diseases Order 2020,’ Cabinet Office, Minute of Decision, Available from: <https://covid19.govt.nz/assets/resources/proactive-release/Update-on-Novel-Coronavirus-Infectious-and-Notifiable-Diseases-Order-2020-Minute-28-01-20.pdf> [Accessed 15 December 2020].
- New Zealand Government (2020a) ‘Alert system overview: New Zealand’s 4-level Alert System lists the measures to be taken against COVID-19 at each level’, Available from: <https://covid19.govt.nz/alert-system/alert-system-overview/#alert-level-1—prepare> [Accessed 15 December 2020].
- New Zealand Government (2020b) ‘Alert Level 2’, Available from: <https://covid19.govt.nz/alert-system/alert-level-2/> [Accessed 15 December 2020].
- The Novel Coronavirus Pneumonia Emergency Response Epidemiology Team (2020) ‘Vital surveillances: the epidemiological characteristics of an outbreak of 2019 novel coronavirus diseases (COVID-19) — China, 2020’, *China CDC Weekly*, 2(8): 113–22.
- NHS (2020) ‘Coronavirus (COVID-19) vaccine’, Available from: <https://www.nhs.uk/conditions/coronavirus-covid-19/coronavirus-vaccination/coronavirus-vaccine/> [Accessed 15 December 2020].
- NZ Herald (2020) ‘Covid 19 coronavirus: New Zealanders’ trust in Government’s pandemic management falls’, *NZ Herald*, 8 August, Available from: www.nzherald.co.nz/nz/covid-19-coronavirus-new-zealanders-trust-in-governments-pandemic-management-falls/ [Accessed 15 December 2020].
- Obama, B. (2020) ‘Barack Obama talks to David Olusoga,’ 19 November, *BBC Sounds*, Available from: www.bbc.co.uk/sounds/series/m000q57g [Accessed 15 December 2020].
- ONS [Office for National Statistics] (2020) ‘Coronavirus (COVID-19) infection survey, UK, 20 November 2020’, Available from: www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/bulletins/coronaviruscovid19infectionsurvey/pilot/20november2020#age-analysis-of-the-number-of-people-in-england-who-had-covid-19 [Accessed 15 December 2020].
- O’Toole, F. (2018) *Heroic Failure: Brexit and the Politics of Pain*, London: Head of Zeus.
- Palma, B. (2020) ‘Did President Trump refer to the coronavirus as a “hoax”? Snopes, Fact Check, 2 March, Available from: www.snopes.com/fact-check/trump-coronavirus-rally-remark/ [Accessed 15 December 2020].
- Parveen, N. (2020) ‘What is happening is not normal. We 100% need answers. This is not adding up’, *The Guardian*, 22 April, Available

- from: www.theguardian.com/world/2020/apr/22/what-is-happening-is-not-normal-we-100-need-answers-this-is-not-adding-up [Accessed 15 December 2020].
- Paton, A. (2020) 'Vaccine should go to those most in need', *The Independent*, 11 November, p. 9.
- Penna, D. (2020) 'Captain Tom Moore knighted by the Queen and jokes: "If I kneel down I'll never get up again"', 18 July, *The Telegraph*, Available from: www.telegraph.co.uk/news/2020/07/17/captain-tom-moore-kighthood-sir-knighted-queen-ceremony/ [Accessed 15 December 2020].
- Perrow, C. (1984). *Normal Accidents: Living with High-risk Technologies*, Princeton, NJ: Princeton University Press.
- Philo, G. (ed.) (1996) *Media and Mental Distress*, Harlow: Addison Wesley Longman.
- Pietras, E. and Sims, P. (2020) 'Walk of frame: WW2 veteran Tom Moore, 99, raises £7 million for the NHS as he walks 100 laps of his garden', *The Sun*, 15 April, www.thesun.co.uk/news/11392111/veteran-99-5-million-nhs/ [Accessed 15 December 2020].
- Public Accounts Committee, House of Commons (2020) 'Readying the NHS and social care for the COVID-19 peak', Available from: https://publications.parliament.uk/pa/cm5801/cmselect/cmpubacc/405/40503.htm#_idTextAnchor000 [Accessed 15 December 2020].
- PAEC [Public Account and Estimates Committee, Parliament of Victoria] (2020) *Inquiry into the Victorian Government's Response to the COVID-19 Pandemic: Interim Report, July 2020*, Victorian Government Printer, Available from: www.parliament.vic.gov.au/file_uploads/PAEC_59-07_Vic_Gov_response_COVID-19_Interim_report_1t5YF980.pdf [Accessed 15 December 2020].
- Quigley, K.F. (2005) 'Bug reactions: considering US government and UK government Y2K operations in light of media coverage and public opinion polls', *Health, Risk & Society*, 7(3): 267–91.
- Rev (2020) 'Boris Johnson coronavirus speech transcript: UK PM tells UK to avoid non-essential travel and contact', 17 March 2020, Available from: www.rev.com/blog/transcripts/boris-johnson-coronavirus-speech-transcript-uk-pm-tells-uk-to-avoid-non-essential-travel-contact [Accessed 15 December 2020].
- Rev (2021) 'Boris Johnson COVID-19 lockdown press conference transcript', 5 January, Available from: www.rev.com/blog/transcripts/boris-johnson-covid-19-lockdown-press-conference-transcript-january-5 [Accessed 15 December 2020].
- Rogers, J (2020) 'VAX HOPE: who will get the Covid-19 vaccine first in the UK?' *The Sun*, 8 December, Available from: www.thesun.co.uk/news/13356851/covid-19-vaccine-who-will-get-first-uk/ [Accessed 15 December 2020].
- Rohrer, R. (2020) Report of the Independent Commission of Experts on the management of the COVID-19 pandemic in Tyrol, 12 October, Available from: www.tirol.gv.at/fileadmin/presse/downloads/Presse/Pressemappe_englisch.pdf [Accessed 3 February 2021].
- Rooke, L., Clarke, P. and Duch, R. (2020) 'How should countries roll out Covid-19 vaccine? France and the UK have two different ideas',

- The Conversation, Scroll.in*, 18 November, Available from: <https://scroll.in/article/978755/how-should-countries-roll-out-covid-19-vaccine-france-and-the-uk-have-two-different-ideas> [Accessed 15 December 2020].
- Rossen, L.M., Branum, A.M., Ahmad, F.B., Sutton, P. and Anderson, R.N. (2020) 'Excess deaths associated with COVID-19, by age and race and ethnicity — United States, January 26–October 3, 2020', *Morbidity and Mortality Weekly Report (MMWR)*, 69(42): 1522–7, Available from: www.cdc.gov/mmwr/volumes/69/wr/mm6942e2.htm?s_cid=mm6942e2_w [Accessed 15 December 2020].
- Roy, E.A. (2020) 'New Zealand health minister demoted after beach visit broke lockdown rules', *The Guardian*, 7 April, Available from: www.theguardian.com/world/2020/apr/07/new-zealand-health-minister-demoted-after-beach-visit-broke-lockdown-rules [Accessed 15 December 2020].
- Rutter, J. (2020) *Remembering the Kindness of Strangers: Division, Unity and Social Connection During and Beyond COVID-19*, London: British Future, Available from: www.britishfuture.org/wp-content/uploads/2020/07/RememberingTheKindnessOfStrangersReport.pdf [Accessed 15 December 2020].
- Saifi, S. and Shah, S. (2019) 'Pakistan's anti-vaccination movement leads to string of deadly attacks', *CNN Health*, Available from: <https://edition.cnn.com/2019/04/26/health/polio-worker-deaths-pakistan-intl/index.html> [Accessed 15 December 2020].
- Sample, I. (2020) 'British exceptionalism undermined pandemic preparedness, MPs told', *The Guardian*, 2 December, Available from: www.theguardian.com/politics/2020/dec/02/british-exceptionalism-undermined-pandemic-preparedness-mps-told [Accessed 15 December 2020].
- Scientific American (2020) 'From fear to hope', *Scientific American*, 323(4): 12–13, Available from: www.scientificamerican.com/article/scientific-american-endorses-joe-biden/ [Accessed 15 December 2020].
- Scott, D. and Animashuan, C. (2020) 'Covid-19's stunningly unequal death toll in America, in one chart', *Vox*, 2 October, Available from: www.vox.com/coronavirus-covid19/2020/10/2/21496884/us-covid-19-deaths-by-race-black-white-americans [Accessed 15 December 2020].
- Sengupta, K. (2020) 'Coronavirus: inside the UK government's influential behavioural "nudge unit"', *The Independent*, 2 April, Available from: www.independent.co.uk/news/uk/politics/coronavirus-uk-government-nudge-unit-dominic-cummings-herd-immunity-a9444306.html [Accessed 7 April 2020].
- Shane, T. (2018) 'The semiotics of authenticity: indexicality in Donald Trump's tweets', *Social Media + Society*. <https://doi.org/10.1177/2056305118800315>
- Shen, M. (2020) 'Oregon governor declares state of emergency in Portland and says she is "incredibly worried" about violent clashes ahead of Proud Boys rally on Saturday in city plagued by BLM protests', *MailOnline*, 25 September 2020, Available from: www.dailymail.co.uk/news/article-8773871/

- Oregon-governor-incredibly-worried-violence-Proud-Boys-rally. html [Accessed 15 December 2020].
- Sherwood, H. (2020) 'Breastfeeding mothers will not be offered Covid vaccine, say regulators', *The Guardian*, 20 December, Available from: www.theguardian.com/world/2020/dec/20/breastfeeding-mothers-will-not-be-offered-covid-vaccine-say-regulators [Accessed 15 December 2020].
- Shesgreen, D. (2020) 'Senegal's quiet COVID success: test results in 24 hours, temperature checks at every store, no fights over masks', *USA TODAY*, Available from: <https://eu.usatoday.com/story/news/world/2020/09/06/covid-19-why-senegal-outpacing-us-tackling-pandemic/5659696002/> [Accessed 15 December 2020].
- Shipman, T. and Wheeler, C. (2020) 'INSIDE NO 10. Coronavirus: ten days that shook Britain', 22 March, *The Sunday Times*, Available from: www.thetimes.co.uk/article/coronavirus-ten-days-that-shook-britain-and-changed-the-nation-for-ever-spz6sc9vb [Accessed 6 April 2020].
- Skandalakis, P.N., Lainas, P.J.E. Skandalakis, J.E. and Mirilas, P. (2006) "To afford the wounded speedy assistance": Dominique Jean Larrey and Napoleon', *World Journal of Surgery*, 30(8): 1392–9.
- Sky News (2020) 'COVID-19: majority of British public do not trust government to manage pandemic – survey', *Sky News*, 6 December, Available from: <https://news.sky.com/story/covid-19-majority-of-british-public-do-not-trust-government-to-manage-pandemic-survey-12152793> [Accessed 15 December 2020].
- Smyth, C. (2020) 'Coronavirus: No 10 denies Dominic Cummings would have let elderly die', *The Times*, 23 March, Available from: www.thetimes.co.uk/article/no-10-denies-dominic-cummings-would-have-let-elderly-die-qs1760jr9 [Accessed 6 April 2020].
- Soldatkin, V. (2020) 'Moscow rolls out Sputnik V COVID-19 vaccine to most exposed groups', *Reuters*, 5 December, Available from: www.reuters.com/article/health-coronavirus-russia-vaccination-idUSKBN28F09G [Accessed 15 December 2020].
- Social Science Space (2020) 'Addressing the psychology of "Together Apart": free book download', blog, Available from: www.socialsciencespace.com/2020/05/addressing-the-psychology-of-together-apart-free-book-download/ [Accessed 15 December 2020].
- Starkey, J. (2020) '1st Vets Railcard: Captain Sir Tom Moore award first veterans' railcard—to say thank you for his World War Two service', *The Sun*, 14 October, Available from: www.thesun.co.uk/news/12924131/captain-sir-tom-moore-awarded-first-veterans-railcard-to-say-thank-you-for-his-world-war-two-service/ [Accessed 15 December 2020].
- Syed, M. (2020) 'Fixated on the flu and shrouded in secrecy, Britain's scientists picked the wrong remedy', *The Sunday Times*, 17 May, p. 20.
- Taylor, A. (2020) 'As covid-19 cases surge, global study paints grim picture for elder-care homes', *The Washington Post*, 16 October, Available from: www.washingtonpost.com/world/2020/10/15/long-term-elder-care-coronavirus-nursing-homes-research-lessons/ [Accessed 15 December 2020].

- The House Committee on Transportation and Infrastructure (2020) *The Design, Development and Certification of the Boeing 737 Max*, p. 5, Available from: <https://transportation.house.gov/imo/media/doc/2020.09.15%20FINAL%20737%20MAX%20Report%20for%20Public%20Release.pdf> [Accessed 15 December 2020].
- The Telegraph (2020) '50 years of drink driving campaigns', *The Telegraph*, Available from: www.telegraph.co.uk/motoring/road-safety/11215676/50-years-of-drink-driving-campaigns.html [Accessed 30 July 2020].
- Thorne, L. (2020) 'White House coronavirus advisor Anthony Fauci praises Victorian attitude to mask wearing', *ABC News*, 28 October, Available from: www.abc.net.au/news/2020-10-28/white-house-covid-expert-anthony-fauci-praises-victoria-masks/12823856 [Accessed 15 December 2020].
- Topping, A. (2020) 'Pregnant nurse's death adds to concern among health workers', *The Guardian*, 15 April, Available from: www.theguardian.com/world/2020/apr/15/pregnant-healthcare-workers-pressured-into-covid-19-frontline [Accessed 15 December 2020].
- Trump, D. (2020) Tweet, 27 October, Available from: <https://twitter.com/realDonaldTrump/status/1321078919924207617> [Accessed 15 December 2020].
- UK Scientists (2020) 'Public request to take stronger measures of social distancing across the UK with immediate effect', Available from: http://maths.qmul.ac.uk/~vnicosia/UK_scientists_statement_on_coronavirus_measures.pdf [Accessed 15 December 2020].
- uPolitics (2020) 'Trump calls Dr. Anthony Fauci an "idiot," considers firing him', *MSN News*, 19 October, Available from: www.msn.com/en-us/news/politics/trump-calls-dr-anthony-fauci-an-idiot-considers-firing-him/ar-BB1abBHA [Accessed 15 December 2020].
- Urwin, R. (2021) 'Baby, it was nearly too much to bear', *The Sunday Times*, New Review, p. 24.
- USA Today (2020) 'The full transcript from the first presidential debate between Joe Biden and Donald Trump', *USA Today*, 30 September, Available from: <https://eu.usatoday.com/story/news/politics/elections/2020/09/30/presidential-debate-read-full-transcript-first-debate/3587462001/> [Accessed 15 December 2020].
- Vazquez, M. and LeBlanc, P. (2020) 'Trump refuses to condemn White supremacists at presidential debate', *CNN Politics*, 30 September, Available from: <https://edition.cnn.com/2020/09/30/politics/proud-boys-trump-white-supremacists-debate/index.html> [Accessed 15 December 2020].
- Wang, C.J., Ng, C.Y. and Brook, R.H. (2020) 'Response to COVID-19 in Taiwan: big data analytics, new technology, and proactive testing', *JAMA*, 2020;323(14):1341–2. doi:10.1001/jama.2020.3151
- Ward, L. (2020) 'Covid 19 coronavirus: Auckland's dire August – the cluster that changed everything', *NZ Herald*, 7 September, Available from: www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=12362661 [Accessed 15 December 2020].
- Waterson, J. (2020) 'Revealed: "former Vodafone executive" in 5G conspiracy video is UK pastor', *The Guardian*, 24 April, Available from: www.theguardian.com/world/2020/apr/24/

- vodafone-exec-5g-coronavirus-conspiracy-theory-video-revealed-pastor-luton-jonathon-james [Accessed 15 December 2020].
- Weaver, M. (2020) 'The victims: doctor who pleaded with PM to protect NHS staff dies', *The Guardian*, 10 April, p. 5.
- WebMD.com (2020) 'What does COVID-19 do to your lungs?' Available from: www.webmd.com/lung/what-does-covid-do-to-your-lungs#1 [Accessed 24 September 2020].
- WHO [World Health Organization] (2020a) 'Pneumonia of unknown cause – China: disease outbreak news', 5 January, Available from: www.who.int/csr/don/05-january-2020-pneumonia-of-unknown-cause-china/en/ [Accessed 15 December 2020].
- WHO (2020b) *Novel Coronavirus (2019-nCoV) Situation Report*, 20 January 2020, Available from: www.who.int/docs/default-source/coronaviruse/situation-reports/20200121-sitrep-1-2019-ncov.pdf [Accessed 15 December 2020].
- WHO (2020c) 'Independent evaluation of global COVID-19 response announced', WHO news release, 9 July, Available from: www.who.int/news/item/09-07-2020-independent-evaluation-of-global-covid-19-response-announced [Accessed 15 December 2020].
- Wilson, S. (2020) 'Three reasons why Jacinda Ardern's coronavirus response has been a masterclass in crisis leadership', *The Conversation*, 5 April, Available from: <https://theconversation.com/three-reasons-why-jacinda-arderns-coronavirus-response-has-been-a-masterclass-in-crisis-leadership-135541> [Accessed 15 December 2020].
- Wood, N. (2020) 'New Zealand's renewed COVID crisis: why scientists say the virus is hard to contain', 19 August, Available from: <https://abcnews.go.com/Health/zealands-renewed-covid-crisis-scientists-virus-hard/story?id=72420563> [Accessed 15 December 2020].
- Woodward, B. (2020a) *Rage*, London and New York: Simon & Schuster.
- Woodward, A. (2020b) 'Coronavirus: scientists advised against hand-shakes on day Boris Johnson boasted of "shaking hands continuously"', 5 May, Available from: www.independent.co.uk/news/uk/politics/coronavirus-boris-johnson-hand-shake-scientists-a9499976.html [Accessed 15 December 2020].
- Yahoo News (2020) 'White House blasts Fauci for new warnings of COVID-19 dangers', 1 November, Available from: <https://news.yahoo.com/white-house-blasts-fauci-warnings-172204443.html> [Accessed 15 December 2020].
- YouTube (2020a) 'Trump returns to the White House after COVID-19 treatment', Available from: www.youtube.com/watch?v=4eGrBei8HP4 [Accessed 15 December 2020].
- YouTube (2020b) 'Coronavirus press conference', 30 April, Available from: <https://www.youtube.com/watch?v=T6qBliBPjuA> [Accessed 15 December 2020].

