Introduction

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Aim

To outline the scope and structure of the book.

Objectives

1. To introduce the 'lens of risk'
2. To raise the idea of risk literacy
3. To locate the present book in the social science of risk
4. To outline the structure of the book.

Something old and something new

A man aged 65 visits his general practitioner concerning a minor ailment. Looking through his file after this matter has been dealt with, the doctor points out that the patient has not yet been screened for the risk of coronary heart disease. After asking questions about lifestyle and family history, she advises her patient to undergo a cholesterol test. The results indicate that his risk of experiencing a coronary event over the next 10-years is greater than 20%. This probability exceeds the cut-off for initiating risk reduction measures specified in the guidelines which the doctor is following. She therefore tells the patient that he is at high risk of coronary heart disease, and recommends statins, which he begins to take on a life-long basis.

This now routine healthcare[1] transaction illustrates a number of issues which the present book addresses. Something new and something old have happened. Coronary heart disease, a major killer, has long been treated as a

[1] The term 'health care' will be used to encompass all of the purposeful activities which people undertake in order to manage health. The word 'healthcare' will be employed more narrowly, to refer to the health-promoting activities of paid service providers.

major clinical problem, particularly in developed countries. But its representation as a risk invokes a historically novel mode of thought. Although they might be labelled 'patients', those offered this form of 'treatment' as prophylaxis will not usually have reported any related illness. In most cases they will not even have requested screening which, instead, their doctor proposes. As discussed in Chapter 2, a health risk is often identified by locating patients in a category of which a relatively high, but sometimes absolutely low, proportion are expected to experience the adverse outcome under consideration. Statins may confer an overall net gain in life expectancy by reducing the risk of coronary heart disease in the population (Roberts, Guallar, and Rodriguez, 2007). But this treatment introduces new risks, including muscle weakness and liver damage (Kiortsis *et al.*, 2007). Some patients who experience side-effects would not have suffered from heart problems if they had not taken statins. However, what might have happened to an individual if preventive measures had not been activated can never be known.

By offering this intervention the doctor draws attention to a particular health issue which has to have been both **selected** and **categorized** before it can be managed. (The highlighted topics will be further discussed in subsequent chapters.) The demarcation of risks is by no means straightforward. For example, McCormack, Levine, and Rangno (1997) define 'cardiovascular events' as including *angina, unstable angina, myocardial infarction or death from coronary artery disease*. The targeting of a particular health risk category requires **value judgements** about its undesirability. Such judgements may seem obvious. But they will sometimes be contested, for instance with respect to the desirability of preventing the birth of children with disabilities. The patient whose imaginary case was presented above might be informed that he faced a greater than 20% risk of coronary heart disease over the next 10-years. Numerical risk assessments of this form are based on **probabilistic reasoning**. They provide the basis for bifurcation into high and low risk categories, since an intervention may be either given or withheld, which requires a dividing line to be selected. Despite the aura of precision carried by numbers, the thinking behind this form of reason is not clear-cut. In addition, probabilities cannot be quantitied unless confined to a **time frame** which may be set differently, changing the probabilities on which clinical decision-making is based. In this case, the risk of congestive heart disease (CHD) after more than a decade has been routinely excluded from consideration.

This and many forms of health risk management are located in wider social contexts. They are arranged around **the organized processing of information**, and are influenced by the wider **societal representation** of health and illness. For example, the iconic patient with coronary heart disease is an unfit,

overweight man. Health professionals do not select health problems entirely spontaneously. Their choices are influenced by **regulatory systems** which distribute incentives and sanctions. For instance, patients may not appreciate that UK general practices are paid for achieving nationally targeted screening rates. Regulatory systems focus on **patient safety**, which they are designed to enhance. Finally, these and other processes fit together, not always coherently, in socially organized packages of purposeful **risk management**. As discussed in the next chapter, risk management should not be thought of as an activity undertaken only by professional experts on behalf of clients. Instead, it should be considered to involve all of those who respond to a particular health problem in terms of risk. The stakeholders include the public, patients, carers, practitioners, service managers, and policymakers.

The lens of risk and the risk epidemic

The title of this section recycles two borrowed phrases which provide a starting point for reflecting critically about risk and health care. The often-used term *lens of risk* (e.g. Hunt, 2003) draws attention to an interpretive framework which risk managers adopt, usually without conscious reflection. Rose (1998b) labelled this way of looking at the world *risk thinking*. The optical metaphor implies that a biomedical or psychological phenomenon will appear different when viewed through the lens of risk. Moreover, the impact of looking through this metaphorical optical device involves far more than perception. Actions taken from a risk perspective have the potential to change the biomedical phenomena which they address, often creating new risks, as illustrated above.

The second borrowed phrase, *risk epidemic*, was invented by Skolbekken (1995). He wished to convey not that the world had become more dangerous (although it certainly has through the looming threats of climate change and resource depletion), but that medicine was becoming increasingly dominated by risk thinking. Skolbekken documented this trend by analysing the use of risk language in medical journals. An updated illustration is offered below, in Figure 0.1.

The chart was developed by finding papers identified by the academic search engine Google Scholar for 5-year periods between 1958–62 and 2003–07. Counts were obtained for papers containing the word 'coronary', and for those both 'coronary' and 'risk' in the title. The displayed percentages portray the extent to which risk was considered sufficiently important to be included in the title of papers concerned with coronary heart disease at different periods in recent history. The chart illustrates two trends. Firstly, it documents steady and cumulatively massive publication growth in this field over the period covered.

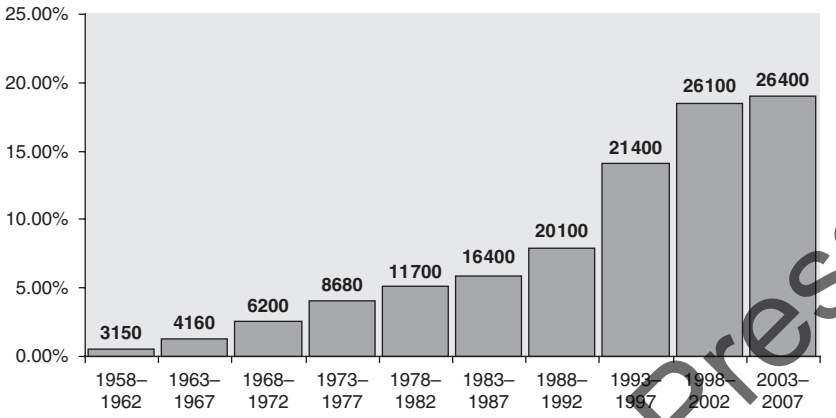

Figure 0.1 Proportions of papers with 'coronary' in the research title also referring to 'risk' 1958–2007 (totals at tops of bars).

Secondly, it points to a historical increase in the proportion of papers which included 'risk' in the title. Use of this term accelerated particularly rapidly in the 1990s, and appears to be tailing off in the 21st century. A less stringent test produces an even more striking comparison. In 1963–67, 8% of 12 700 papers containing the word 'coronary' anywhere in the text also included the word 'risk'. By 2003–07, this proportion had increased 10-fold, to 83% of 160 000 papers. Similar trends can be found for many health issues. Readers can confirm this assertion for themselves by carrying out a comparable analysis for any medical subject which interests them. In most cases, the trend will be perfectly ordered, with the proportion of 'risk' papers on any clinical topic increasing for each later period. (Search engines provide an invaluable tool for digging into the recent archaeology of knowledge!)

Researchers, including the present authors, appear to have been tugged by an unnoticed but gradually strengthening force which induced them collectively to don metaphorical risk spectacles. It might be argued that the trend documented above results merely from linguistic changes. From this perspective, organized responses to perceived health problems have remained constant, but are now likely to be discussed in terms of 'risk'. Skolbekken and many other writers have maintained that a more fundamental shift has occurred. He documented collective, unconscious distortions generated by the risk epidemic. These biases include: lack of attention to iatrogenic risks, caused by medicine itself; particular overrepresentation of risk thinking in medically dominated clinical arenas such as obstetrics; and use of a narrow vocabulary which largely excludes related but distinctive concepts such as 'uncertainty',

'danger', and 'vulnerability'. This novel form of thinking detects problems by locating them in populations, frequently creating new risks, generated by responses to the prior concern, potentially *ad infinitum*.

The present book draws upon the social science of risk. It will start from the assumption that a fundamental transformation has taken place. For better or worse, the world in general, and health in particular, look different when seen through the lens of risk. This tendency affects all aspects of health care, not just the academic publication production line which the above chart dissects. National Governments throughout the developed world have established official bodies, such as, in the UK, the Patient Safety Agency and Care Quality Commission, which prioritize risk management. Services have been transformed by risk thinking. The safety agenda aims to minimize iatrogenic risks, such as hospital-acquired infections and medical errors. Health promotion campaigns attempt to persuade individuals to abandon immediate pleasures by promising to reduce their risk of developing long-term conditions. By deciding whether or not to take up screening, reduce their dietary fat intake, or require condom use, members of the public who do not consider themselves ill become health risk managers. Health service providers seek to help patients to navigate complex risk management decision trees about screening and treatment, or to reduce the risk of patients with mental health problems harming themselves or others. They aim to minimize professional risks, such as being subject to litigation or accused of misconduct. Although risk avoidance often tends to predominate in practice, health professionals do sometimes promote positive risk-taking (Titterton, 2005), and seek to help service users to find optimum balances between safety and autonomy (Heyman and Huckle, 1993; Heyman, Huckle and Handyside, 1998).

The lens of risk has not retained a fixed shape during the relatively brief period during which it has occupied centre stage in developed societies. Power (2007) has argued that risk thinking has *increasingly shifted from the science of risk analysis itself, and its epistemological debates, to the organizational systems in which it is embedded*. In the healthcare domain, this shift was marked, in the UK at least, by the establishment of formal clinical governance systems during the 1990s. The global financial collapse of 2007 is stimulating a fundamental change in attitudes to risk regulation which spills out well beyond the failed banking sector. The protective power of regulatory systems is no longer taken for granted. The question of who will guard the guards has re-emerged in relation to all forms of risk management. The bank meltdown has also shown that the biggest risks may remain unnoticed because they are too large to be seen. It might be fancifully suggested that risk itself evolves. The culturally shared, taken-for-granted presuppositions which underpin risk thinking do not

themselves remain constant. The apparent oddness of talking about risk changing arises out of a ubiquitous tendency to view risks as natural phenomena which possess measurable properties, rather than as interpretive devices.

Risk literacy

The authors of the present book have attempted to produce a guide to thinking critically about health risks and their management. Readers will be invited to explore behind news headlines and official pronouncements about risks. The present book does not offer solutions to specific health risk management problems. Instead, the authors seek to promote 'risk literacy'. They have endeavoured to articulate and question the assumptions on which any form of health risk management must be based. Subsequent chapters will seek to demonstrate that risk managers cannot avoid engaging with difficult issues concerning the nature of reality, goodness, chance, time, information, and social order. These questions have been debated for thousands of years. Practising risk managers cannot be expected to solve them. Nor can the present authors. But their implications for health risk management need to be considered.

Some health professionals may feel that excessive reflection will impede them from taking forwards their mission of benefiting patients. However, peering into Pandora's box, rather than keeping it resolutely closed, can ventilate some stuffy areas of health care practice. The book offers a critical guide to risk thinking, a function not dissimilar to that of a guidebook. Travellers cannot afford to visit all of the potentially interesting sites in a particular locality, and do not have the time to read up all the relevant information. Guidebook writers attempt to select and comment on the most significant landmarks. They deliberately adopt an opinionated stance, knowing that readers will readily reject views which they do not agree with.

This book provides a guide to risk thinking itself, as applied in health care contexts, rather than to the social science of risk. A number of recent texts reviewed in the next chapter have performed this task well enough. Instead, the book will draw upon the many interesting ideas which can be discovered in this literature. A social science based guide to risk thinking will introduce the field, facilitate critical scrutiny, and encourage deeper exploration. Much of the academic literature is aimed at fellow members of particular disciplines, sub-disciplines, and schools of thought. It does not offer easy reading. Conflicting ideas are rife. An introduction to risk thinking which starts from the concept itself provides one way of cutting through this rich but chaotic resource, hopefully tempting readers to explore further.

The remainder of this Introduction will discuss the background and origins of the book, differentiating it from other texts about risk. The sequence of the chapters which follow will then be outlined.

The social science of risk

Anybody hunting for a quick fix on the social science of risk in the early 1990s could have been forgiven for concluding that little was available. Sociology and psychology textbooks did not even index references to the topic. Only a few social science texts on risk had been published (e.g. Krimsky and Golding, 1992; Adams, 1995). Risk thinking did not resonate with traditional concerns of psychology, sociology, and anthropology such as individual differences, social inequality, and comparisons between cultures, respectively. By 1995, a substantial divide had opened up between the lack of focus on risk in the social sciences and its expanding role in other discourses. For example, the daily news contained wide-ranging references to risks. The language of risk connected diverse domains, including sport, business, weather, the environment, crime, politics, and health. Social scientists started to orient themselves to this important trend.

Few generic social science of risk texts existed in 1995. However, a disparate range of disciplines had long engaged with the analysis of risk and related concepts such as chance and uncertainty. Some threads of scholarship, particularly debates about the nature of probability, have continued for centuries (Hacking, 1975). Major original contributions, now integrated into the social science of risk, have come from a wide range of disciplinary sources. Relevant texts include, among others: *The Economic Theory of Entrepreneurship* (Knight, 1921); *The History of Probability* (Hacking, 1975); *Judgements Under Uncertainty: Heuristic and Biases* (Kahneman, Slovic, and Tversky, 1982); *The Use of Heuristics to Simplify Decision-Making* (Gigerenzer, Todd, and The ABC Research Group 1999); and *Risk and Blame* (Douglas, 1992). Sociologists have analysed risk thinking in relation to the intensifying global ecological crisis (Beck, 1992) and growing societal system complexity (Luhmann, 1993). Although not using the specific term 'risk', Foucault's concept of 'governmentality' (Foucault, 1991) was soon applied to its analysis (Dean, 1999). This approach treats risk thinking as a new means of social control, through which individuals are encouraged to regulate themselves responsibly, guided by scientific evidence.

These and many other ideas have heavily influenced the current social science of risk. But a coherent knowledge base has not yet developed, and perhaps never will. Contention and divergence are only to be expected in relation to the analysis of such a complex concept. Scholars who are heavily immersed in particular disciplines may not even know about the contributions of others. Psychologists and sociologists in particular tend, on the whole, to interact no more constructively than cats and dogs! Outsiders to this academic mélange may feel overwhelmed. However, social scientific concepts do provide a useful resource for the analysis of health risk management. They can be drawn upon eclectically.

Since 1995, the availability of social scientific analyses relevant to health risk management has been transformed from famine perhaps even to glut. A specialist journal, *Health, Risk & Society*, launched in 1999, catalysed the consolidation of a new academic sub-discipline. Anybody who, as of 2009, wishes to maintain a comprehensive collection of books relevant to health care risk management will need a large bookcase. Generic texts on risk have been written from the perspectives of single disciplines such as sociology (Zinn, 2008) and psychology (Breakwell, 2007). Some books have brought together multiple disciplines (Mythen and Walklate, 2006), or developed a multidisciplinary approach (Renn, 2008). Others have homed in on risk-related topics, including chance (Gigerenzer, 2002), risk regulation (Power, 2007) and risk in everyday life (Tulloch and Lupton, 2003). A rarer sub-breed of risk books has focussed on conceptual issues. A text edited by Lewens (2007) asks much needed philosophical questions. One edited by Ericson and Doyle (2003) probes the crucial but neglected issue of the relationship between risk and morality. Another variant offers social and healthcare professionals practical advice about how to manage risks (Titterton, 2005). A further strand has reviewed the risk literature in relation to the needs of particular professions such as social work (Parsloe, 1999) and nursing (Godin, 2006). These texts, all recommended, and many others, offer a detailed resource for further study of risk social science.

The present authors seek to distinguish their text from the pack in two ways: by focussing specifically on health-related matters; and by attempting to combine critical sophistication with accessibility. In relation to the first issue, the book will concentrate on health risk management, albeit from an analytic rather than a directly practical perspective. Many existing social science texts attempt to cover the whole span of risk applications. However, health risk thinking possesses at least two distinctive features which will be addressed in later chapters. One is the centrality of its engagement with moral issues. People are generally regarded as valuable in themselves, although fetuses inhabit an intermediate zone in which their destruction can be contemplated. In contrast, for instance, capitalist societies are supposed to allow unfit firms to die (even if the survival of the fittest principle does not apply to large financial institutions). Risk thinking concerned with people, regarded as ends-in-themselves, will take on a moral character not found when expendable entities are being managed. Generic approaches to the social science of risk have sometimes given insufficient emphasis to this difference.

A second distinctive feature of health risks involves the nature of their evidence base. When the lens of risk is pointed at human-beings, it focusses on the most complex organized entities presently known to inhabit the universe.

Because of this complexity, health outcomes mostly cannot be predicted in individual cases. On the other hand, a large number of people are available to be observed. All but the rarest diseases manifest themselves many times in large populations. Enumerating how frequently a specified outcome occurred in the past provides a limited source of guidance about the future. In contrast, for example, analysts concerned with the safety of nuclear power plants can at least hope to make a runaway chain reaction very unlikely by modelling and predicting how an individual reactor should behave. But they cannot test their strategy by observing large numbers of cases.

The presence of features distinguishing health risks from other forms justifies their separate consideration. A second claim to divide this book from the social science of risk pack is stylistic. The authors have attempted to make the book as accessible as possible whilst doing justice to the complexity of its subject matter. It is designed for health care practitioners, researchers, and others who are interested in the management of health risks. The authors have endeavoured to steer a course between the twin rocks of unexamined assumptions and impenetrability, both of which are illustrated below. Inevitably, a balance has to be struck between readability and doing justice to the difficult issues embedded in risk thinking. To this end, technical vocabulary, otherwise known as jargon, has been avoided as far as possible. Citations have been used sparingly to illustrate rather than fully represent the points being made. A limited number of 'ugly' technical phrases will be used because of their central importance to health risk thinking. These include 'contingency', 'risk virtual object', 'inductive probabilistic reasoning', and 'time-framing'. They will be discussed more fully at their points of use.

Unexamined assumptions and impenetrable social science

The following chapters will challenge implicit presuppositions underpinning clinical risk management. Authoritative accounts sometimes uncritically transmit the assumption that health professionals know best about risks. For example, Paling (2006) has written a practical guide to risk communication for health professionals which has been endorsed by the British Medical Association. In this book, patients are depicted as prone to *assess risks primarily on emotions rather than facts*. Doctors are described as *so focused on evidence-based decision-making that they see their main task as being better at communicating the key numbers to their patients*. The stated contrast between emotional patients and rational doctors is not necessarily endorsed by the above writer, but reflects a widely held view. This contrast begs many questions about the limits of evidence and its relationship to values. The mystique of science can

easily create a tyranny of numbers without addressing methodological or value questions. Social scientists are interested in the emotions which lurk concealed beneath number crunching.

The social sciences offer extensive resources that can be drawn upon to facilitate critical thinking about health risk management. Unfortunately, much of this material is produced for fellow members of academic sub-disciplines, often in an abstruse style. The writing is not aimed at practitioners who can be faced with a choice between the uncritical and the incomprehensible. Instead of making fun of a piece of heavy sociology, the first author will target himself. He was asked by an irritated hospital consultant to explain the following quotation drawn from a paper concerned with women's understandings of prenatal chromosomal screening for conditions such as Down's syndrome (Heyman *et al.*, 2006):

> Probabilistic induction from populations to individuals requires heuristic acceptance of the ecological fallacy that aggregate properties of a category appertain to its members.

The writer sent a 1-page apologetic expansion of this cryptic statement to the aggrieved consultant who replied that he now understood and agreed with the argument. (The issue presented telegraphically in the quotation will be discussed in detail in Chapter 4.) One person's jargon is another's technical vocabulary. The present authors have had to struggle with their own immersion in the social sciences. They have tried to make the book accessible to readers whose needs and backgrounds will vary considerably, whilst avoiding oversimplification.

The study of risk and the study of risks

Drawing a distinction between the study of 'risks' and the study of 'risk' (Heyman, 1998) provides one useful starting point for constructive critical analysis of risk thinking. Particular risks are considered mainly for practical reasons such as improving outcomes, calling for increased resources, or establishing retrospective accountability for adverse events. The analyst has enough problems getting to grips with the biomedical, statistical, organizational, legal, and moral complexities of the risk in question without having to worry about the nature of risk itself. In contrast, students of risk, the focus of the present book, seek to investigate the properties of risk thinking. However, they can only probe this interpretive framework by exploring the ways in which social actors manage particular risks. The student of risk therefore needs to look for common patterns across different clinical domains. This requirement will be met in the present book through the consideration of diverse examples,

although the range of clinical contexts covered is inevitably limited by the authors' knowledge and experience.

Structure of the book

The chapters which follow offer an introduction to the critical analysis of health risk management. The next chapter will consider the definition of 'risk', an issue which tends to be taken for granted in many texts. The discussion will introduce important related issues, including: the central importance of contingency, which frames thinking about alternative futures; the nature of the 'existence' of risks; the location of risk in a wider family of terms; the distinction between taking a risk and being at risk; and the concepts of risk management, risk manager, and risk owner. This definitional labour will result in risk thinking being decomposed into four primary elements: categorizing, valuing, uncertain expecting, and time-framing. It will be argued that anyone thinking about a particular risk brings together these four components, although often unreflectively. The social sciences draw attention to the assumptions, usually taken for granted, on which risk thinking is based.

Each component of risk thinking will be analysed in a separate chapter (Chapters 2–5). Chapter 2 will work through the argument that risks cannot 'exist' unless the complexity of the real world is simplified through categorization, which can be achieved in many different ways. The third chapter will explore the unavoidable role of valuing in risk analysis, examining risk selection and the moral ingredient, often concealed, of risk judgements. Chapter 4 will argue that the calculation of quantitative probabilities requires tacit acceptance of the simplifying rule of thumb assumption that individuals personally 'carry' outcome probabilities estimated through observation of constructed categories. It will be maintained that this simplifying step has important implications for clinical practice which can be detected in the interactions between health professionals and patients. The final chapter in this sequence of four will focus on the role of time interpretation in risk management, particularly the inevitable but often unreflective adoption of particular temporal horizons such as 5-year survival.

The second part of the book (Chapters 6–9) will locate health risk management in a wider cultural and health service context. The topics covered include risk and information, risk and the mass media, risk regulation, and the safety agenda. The two parts of the book are connected by the following crucial argument. Risk statements describe an individual's **relationship** to a categorized outcome. In contrast to disease, pain, and death, risks never 'exist' independently of observers' knowledge, beliefs, and values. They refer to what

an observer thinks might happen, or might have happened, rather than directly to the material world. In consequence, a person may be considered to have been 'at risk' even though nothing untoward actually occurred. But responses to risks cannot be socially organized unless risk managers orient themselves to the same entity. This coordination of perceptions is achieved by excluding observers' active interpretive roles from conscious scrutiny. Communal interpretation is projected onto the risk which comes to be experienced as a naturally existing object. However, these projections remain open to challenge, making the social orders on which they are based inherently fragile.

Chapter 6 will consider 'encoded' risk knowledge, as exemplified by clinical guidelines and health promotion messages. It will be argued that the encoding process provides a lever for societal control over individual behaviour. But this approach tends to fall down on account of its lack of attention to the crucial roles of social context, trust, and emotion. Chapter 7 addresses the role of the mass media in constructing and selecting risks for societal attention. The complex and little understood processes through which the media bring certain risks to centre stage, often temporarily, whilst ignoring others, will be reviewed, as will the active interpretive role of media recipients. Chapter 8 will raise crucial questions about the critical role of healthcare regulatory organizations, such as the Care Quality Commission for England. These bodies are supposed to manage risks arising from healthcare itself on behalf of the public. Like bank regulators, they have attempted to do so mostly by indirect means, relying heavily on the testimony of provider organizations. The global banking fiasco of 2007/2008, followed closely in the UK by the exposure of grotesque parliamentary quasi-corruption, have forced doubt about the adequacy of indirect risk regulation to centre stage. Chapter 8 will address this issue in relation to healthcare systems. It will be argued both that risk regulators have been cast as the guardians of the social order in secular risk-based societies, and that they are structurally incapable of playing this role. It is now apparent that alternatives to centrally driven systems which attempt to command and control health risk management are urgently needed. Chapter 9 will complete a circle from health risk to health safety by reviewing recent Government attempts to promote and enforce the latter. It will be argued that these initiatives tend to conflate adverse events such as medical interventions causing deaths with clear-cut avoidable errors like wrong-site surgery. Instead, an approach will be advocated in which the limitations of healthcare risk management are acknowledged, and the potential for front-line multidisciplinary teams to improve clinical outcomes is harnessed more effectively. Chapter 10 will draw together the themes discussed in the book through an illustrative case study of the UK response to the 2009 swine flu pandemic.

Four authors have worked together to produce this book. They share a commitment to bridging the worlds of healthcare and social science in the field of risk studies. The chapters have been written by named individuals, as indicated in the text. The responsibility for views expressed in particular chapters rests solely with their writers.

Conclusion

In this introductory chapter, it has been argued that the social sciences provide a valuable resource for practitioners, researchers, and others who seek to think critically but constructively about managing health risks. The authors aim to promote the development of 'risk literacy' by steering a course between an oversimplified natural attitude to risk and impenetrability. The book will delve a little more deeply than some other texts into the concept of risk itself, and locate health risk management in a wider societal context, drawing out implications for clinical practice.