Introduction

Early one morning in 2015, a young mother left home for work, taking her baby son with her to be dropped off at his crèche. She had worked beyond midnight the previous day. She secured her son safely in an approved child restraint seat, in the back of the car. As she later said, she was 'on autopilot', with her mind on her work. Without noticing, she missed the turning to the crèche, proceeded directly to her workplace, parked, hurried inside and resumed her duties from where she had left off the previous evening. She forgot altogether that her son was still in the car.

Several hours later she noticed a text message from the crèche. It asked whether her son was sick. She replied twice (with texts) that he had been fine in the morning. She also asked if something was wrong with him now. A staff member from the crèche then phoned her, and the realisation struck that she had not dropped her son off, after all. She ran to the car, but it was too late. The little boy had succumbed to heatstroke and dehydration, and could not be resuscitated.

The line that separates each of us from disaster can be very fine indeed. If only this mother's mind had not been on her work that morning, if only the crèche staff member had called earlier, if only a passer-by had noticed the child in the car and intervened, if only the weather been milder . . . there were so many simple ways in which this disaster could have been averted.

Surprisingly, it turns out that events like this occur often enough to have a name – the 'forgotten baby syndrome'. Busy or distracted parents do simply forget their baby from time to time, in circumstances that matter. Chance then plays a major role in determining whether or not the child comes to harm, through factors such as the duration of the episode, the ambient temperature, the actions of passers-by and the age and resilience of the baby. Unfortunately, chance was not on the side of this particular mother.

Strictly speaking, the term 'syndrome' is not justified, because no mental or physical pathology characterises these cases. These parents are normal parents. There is also no suggestion of intentional neglect or abuse of the children who have died in this way, and seldom any evidence of substance abuse either. On the contrary, these events are simply classic failures of normal human cognition.

This young mother pleaded guilty to a charge of manslaughter, but the judge granted an application for a discharge without conviction. In doing so, Simon France J said that 'a conviction here would undoubtedly do more harm than good'.[1] His judgement shows deep insight and illustrates a central point of this book: when serious accidents[2] follow unintentional errors on the part of well-motivated people trying to do the right thing, the law, as a minimum, should not add to the harm that has already been done. A second central point illustrated by this story is that the principles discussed in this book apply generally, not just to doctors. As it happens, this mother did work in healthcare, but her tragic story could have involved anyone. We have taken medicine as the central focus of this book not because there is anything special about doctors and other health professionals, but because the problem of unintended harm to patients is both substantial and topical.

Modern medicine is highly effective. It is also available to greater numbers of people than ever before, but preventable injury has been identified as a strikingly common occurrence in all aspects of modern healthcare. The term 'epidemic of error' has been coined. In the United

[1] The *Queen* v. *X* [2015] NZHC 1244. The cited source of framing the test of whether conviction would do more harm than good was Lord Hoffman in *Sepet* v. *Secretary of State for the Home Department* [2003] UKHL 15 at [34]. The judge also provided name suppression and limited his written judgement in length and detail to reduce the chance of identifying the mother, her husband or her baby. We would like to thank Professor David Diamond of the Departments of Psychology and Molecular Pharmacology and Physiology at the University of South Florida (http://psychology.usf.edu/faculty/diamond), and also Associate Professor Susan Hatters Friedman, a forensic psychiatrist at the University of Auckland, for information on these events. Professor Diamond has acted as an expert witness and been interviewed by the media in several cases of this type: see for example L. Hilton, '"Good parents" denial puts kids at risk for heat stroke', Contemporary Pediatrics (2014) http://contemporarypediatrics.modernmedicine.com/contemporary-pediatrics/content/tags/icymi/good-parents-denial-puts-kids-risk-heat-stroke accessed 27 December 2016; 'Forgotten baby syndrome explained by neuroscientist' (2015), www.dailymail.co.uk/video/news/video-1107664/Forgotten-baby-syndrome-explained-neuroscientist.html, accessed 27 December 2016.

[2] The term 'accident' is controversial: see for example: R.M. Davis and B. Pless, 'BMJ bans "accidents"' (2001) 322 *British Medical Journal* 1320–1. We do not dispute that the word is often used inappropriately, but we think it does have value. In Chapter 1 we will discuss an operational definition of 'accident' which serves the purposes of this book.

States, the Institute of Medicine, acting under the National Academy of Sciences, has identified errors in healthcare as a leading cause of death and injury, comparable with that of road accidents. The precise extent of this problem is open to question, but it is beyond argument that an unacceptable number of people suffer serious harm or die as a result of 'avoidable adverse events'. Sometimes these events are attributable to negligence. However, it is often simple human error, operating in an intrinsically hazardous system, that results in an unnecessary death or serious injury. For the person concerned, and for the person's family and friends, the consequences of a deceptively simple mistake may be a tragedy of the first order. In addition, there may also be grave implications for a doctor or nurse at whose door the blame for the accident is laid, with consequences for his or her family as well.

This book is a study of how mishaps occur and how people are blamed for them. In many areas of human activity there is a strong tendency to attribute blame for events that, on further investigation, may be shown not to involve any culpable conduct. This is a particular issue in healthcare, where an error or a violation may contribute to serious consequences. The desire to blame leads to official inquiries, and in many cases to legal proceedings. In many parts of the world this has gone hand in hand with a marked increase in medical litigation, reflecting heightened public concern over the level of iatrogenic harm. The Institute of Medicine, the Institute of Healthcare Improvement and many other organisations have set targets for the reduction of errors in healthcare. Much investment has been made in many countries into improving the safety and quality of healthcare. However, as one commentator, writing in the *New England Journal of Medicine*, has pointed out, 'Any effort to prevent injury due to medical care is complicated by the dead weight of a litigation system that induces secrecy and silence.'[3]

In this book we present an argument that many of these events do not involve moral culpability. This argument is supported by the extensive research that has been carried out into the principles underlying the generation of human errors and into failures in complex systems. We examine the moral and legal basis for the attribution of blame and conclude that in many cases where there is a finding of blameworthy conduct, this in fact may not be justified in respect of the individual, but may often reflect institutional failures or unavoidable human error.

[3] T. A. Brennan, 'The institute of medicine report on medical errors – could it do harm' (2000) 342 *New England Journal of Medicine* 1123–5.

Paradoxically, by focusing on an individual, such inquiries or proceedings often fail to identify systemic deficiencies that predispose to error, or fail to protect the patient against the consequences of inevitable error. Blaming the person 'holding the smoking gun' may simply leave the scene set for a recurrence of the same tragedy.

An often misunderstood point is that human error, being by definition unintentional, is not easily deterred. Furthermore, to be effective, deterrence must be directed at those who are able to effect change within the system. For example, convicting two junior doctors of manslaughter after the incorrect injection of the drug vincristine into the spinal cord failed completely to prevent the same tragedy from happening again, with two more junior doctors some years later – a mistake which has now been made many times in British hospitals. Violations are a different matter from errors. Violations involve choice. Not all violations are reprehensible, and some may be forced upon individuals by the system, but in principle violations can be deterred. The cognitive mechanisms that underlie violations are quite different from those leading to error. It is important to distinguish these different types of human behaviour if we are to make our healthcare systems safer for patients and our legal systems fairer for those whose well-intended care sometimes goes astray. Attempts to modify human behaviour by regulation or legal processes are entirely appropriate, but need to be well informed. The current standard by which negligence is assessed in the law is that of reasonableness in respect of knowledge, skill and care. However, a great deal depends on the way in which this is tested. If the line of questioning focuses on the action, many statistically inevitable errors appear unreasonable. An expert can hardly be expected to say that it is reasonable to give the wrong drug, for example. However, if the questioning focuses on the person, who is a human being, and asks, 'Was this the sort of mistake a reasonable practitioner might make?' the answer will often be different. As we shall see, there is overwhelming evidence that, in fact, all practitioners make errors at some time, including errors in drug administration. It follows that errors can be made by the reasonable doctor. There are other actions, such as leaving an anaesthetised patient unattended, which no reasonable practitioner would do. In the latter case a punitive response may well be called for.

When a patient is unintentionally injured during healthcare, the response may typically involve disciplinary procedures, civil legal action or the criminal law. In some cases these responses will be appropriate; in others, they may actually be counter-productive. This book is as much

about understanding those situations in which blame *is* appropriate as about knowing when it is not. The book has at its centre concern for the patients who are injured, but alongside that it makes the point that some practitioners, by unwittingly contributing to such injury, become victims themselves – often quite innocently. The impact on the practitioner is at times underestimated, and acknowledgement of its true extent should not be seen as diminishing the importance of the primary victim, the patient. Regrettably, current legal responses to inadvertent adverse events often help neither the harmed patients nor those responsible for their care. There is certainly room for improvement in the safety of healthcare, but it is equally true that there is room for improvement in the legal and regulatory responses to failures in care. When a patient is injured during conscientiously administered treatments by well-motivated clinicians, an ideal response would mitigate the consequences to the patient, provide compensation when appropriate, preserve trusting relationships with his or her doctors and other healthcare providers and improve systemic safety in the longer term. Inspiration can be found in the field of law related to mental health, in the emerging concept of therapeutic jurisprudence.

Ultimately, the best response for both patients and those responsible for the provision of healthcare is to make healthcare safer. Unfortunately, error will never be completely eliminated, and there will always be some practitioners whose behaviour is frankly culpable. There are no simple answers, but a better understanding of the factors which underlie the different types of human failing associated with iatrogenic harm is fundamental to improving the way in which we regulate medicine, hold practitioners and healthcare organisations accountable and compensate those who are harmed in the course of receiving treatment.

The problem of unintended harm in healthcare affects all societies. The issues discussed in this book apply generally, although some of the examples relate to specific countries. The legal principles involved are mostly discussed in the context of common-law systems. While they may differ in detail, these systems share the same basic approach. Reference is therefore made to the decisions of courts in England and Wales, Scotland, the United States, New Zealand, Australia and Canada. Because errors and violations raise issues of both civil and criminal liability, and may also fall within the scope of professional discipline, we have taken all these jurisdictions into account.

In Chapter 1, we introduce the concept that the pervasive nature of blame in contemporary society is distorting reactions to adverse events in

medicine and other activities. To illustrate this we give some actual examples of severe consequences that have followed relatively minor errors committed during normal medical practice. The cases are used to exemplify the concepts discussed in subsequent chapters. The language used to describe these events can be important. The term 'accident', for example, is exculpatory, and may have value in distinguishing between situations of culpability and those not warranting blame.

In Chapter 2, we discuss how human beings function not in isolation, but in the context of today's complex technological organisations. Successful human endeavour in medicine and other fields has been the result of man's ability to communicate, cooperate, develop technology and function within a mechanised and skill-demanding world. Medicine is no longer the cottage industry it once was, centred on individual general practitioners working in isolation to treat, to the extent possible, whatever problems their patients presented with. Healthcare is much more effective today, in no small part because of the combined efforts of clinicians from multiple disciplines working together, supported by laboratories and technology that themselves are run by specialists. This has made teamwork and coordination fundamental to the success and safety of modern healthcare. The cognitive processes that have produced these successes are the same processes as those that predispose to certain forms of error. These should therefore be viewed as strengths rather than weaknesses, in comparison with the less error-prone but also less flexible attributes of machines.

A proper understanding of the human actions that lead to adverse events in medicine requires a knowledge of the nature of error. In Chapter 3, a precise definition of error is followed by a detailed discussion of its underlying cognitive processes and an outline of its taxonomy. The thesis is that errors should not necessarily be viewed as random acts or manifestations of carelessness, but rather that even inexplicable and bizarre actions or mistakes can often be understood, and even predicted, from particular circumstances. Deterrence will not prevent errors – their reduction depends on understanding the processes involved. However, not all unsafe acts are errors. In Chapter 4, we discuss violations, beginning with their definition. An understanding of violations facilitates the discussion of the difference between culpable and non-culpable failures in human activity.

The discussion now shifts to culpability. In Chapter 5, we explore the concepts of negligence, recklessness and blame, referring to the insights derived from our discussion of errors and violations. Negligence does not

necessarily imply blameworthiness, but may carry considerable overtones of moral opprobrium. Drawing on the theory developed in the previous three chapters, we suggest a classification of blame into five levels, ranging from pure causal responsibility to intentional harming. The implication of this for our response to adverse events is explored. Negligence in the law is based on the standard of care expected of the reasonable person. In Chapter 6, we scrutinise how the standard of care is set by the law. To assist in the recognition of failures to meet this standard, courts have relied on evidence of professional custom. In this chapter we explore how the test of the standard of care has tended to move from what can reasonably be expected to what ought ideally to have been done. There are risks of injustice in simplistic applications of either test, and we argue that evaluations of culpability should be informed by greater cognisance of the insights of psychology and accident theory discussed in the preceding chapters. The role of the expert witness in setting the standard of care is considered in Chapter 7. Evidence provided by clinical experts tends to reflect ideal practices rather than a customary standard of care. This has contributed to the development of the unrealistic standard discussed in Chapter 6, and expert evidence on human cognition and performance within complex systems is also important for a proper understanding of failures in care.

In Chapter 8, we consider various possible reforms to shift the focus from blame with a view to improving the response of the law to the injured patient, to the need to promote safety in healthcare and to the reduction of inappropriate findings of culpability in doctors. We address at some length the concept of no-fault compensation and consider various possibilities for improving the tort system.

In Chapter 9, we turn to the role of the criminal law in healthcare. In 2001, when the first edition of this book was published, it seemed unlikely that the criminal law would often be evoked in common-law countries in the context of failures in the care of patients unless there was clear evidence of recklessness or intent to harm. New Zealand had been an exception, with nine health professionals facing charges of manslaughter in the 1980s and 1990s after patients died as a consequence of errors in their clinical care. For a country of under 4 million people (at that time), this was a disproportionately high number of such prosecutions. New Zealand's codified law at the time had defined criminal negligence in terms normally considered more appropriate to the purposes of civil law. However, advocacy had resulted in a change to relevant legislation, and the threshold for

criminal prosecution of negligence had been aligned to that of comparable jurisdictions. It seemed that the matter was settled and of little interest to those living in other countries. Unexpectedly, after the turn of the millennium, criminal prosecutions of health professionals increased dramatically in England and Wales. Perhaps the public outrage associated with events such as the deliberate murder of more than 200 patients by the English general practitioner Harold Shipman and the scandal at the Stafford Hospital contributed to this development. In Chapter 9, we consider the limitations and implications of criminal prosecution in the context of healthcare. Our reservations over the appropriateness of civil law suits in cases of simple human error are considerably increased in relation to the criminal law. These reservations have nothing to do with the profession of the accused. Of course doctors like Shipman, who set out to harm their patients, are criminals, and jail is the right place for them. However, we believe there are very few practitioners of this type. For the vast majority of cases in which harm reflects failures in well-intentioned, but inherently dangerous activities (of which healthcare is but one example), we argue that the criminal law is an expensive, blunt and inappropriate instrument. We show that it is ineffective in promoting safety, frequently fails to provide either true justice or a desired outcome for those who loved the deceased patient and typically makes bad situations much worse than they already were.

We conclude, in the final chapter, that a failure to understand the role of blame, along with considerable contemporary enthusiasm for finding scapegoats, has led to what might be termed an inflation of blame. The consequences of this are particularly serious – and costly – in the area of medical mishaps. We extend the ideas developed in Chapter 8, drawing from successful models of healthcare improvement, to bring together the strands developed in the book and argue for coherent, rational and well-informed analysis of blame to underpin a more therapeutic framework for regulating healthcare in the interests of patients and doctors, and all others for whom safety in medicine is a priority.