Preface to the Second Edition

In my line of work there is nothing more gratifying than speaking with a survivor of sudden cardiac arrest. Survivors are, needless to say, extremely grateful to their rescuers. The most common question they ask is how they can thank the people who saved their life. The rescuers are the people who are part of the EMS system and respond to the emergency—the dispatchers who help with telephone CPR instructions, the EMTs who perform CPR and deliver defibrillatory shocks, and the paramedics who provide airway control and medications. It is unfortunate that among those who have cardiac arrest, survivors comprise the minority—and in most communities throughout the nation a very, very small minority. When the patient dies we should ask why? Was death inevitable? Did the system fail? Was there something we could have done better? How can we improve? That's what this book is all about—to provide the knowledge and tools to improve.

Perhaps only 1 percent of all calls to 911 involve attempted resuscitation from sudden cardiac arrest, but this 1 percent brings into play everything that is good and everything that is not so good about a community's EMS system. The elements of care needed to resuscitate a victim of cardiac arrest are the same ones needed to help the victim of a car crash, a child with severe asthma, or people with other medical and traumatic emergencies. Every improvement in the treatment of sudden cardiac arrest benefits everyone who will ever need emergency care. And that's why an EMS system's management of cardiac arrest serves as a surrogate for the system itself. In short, survival from cardiac arrest is the metric upon which an entire EMS system's quality may be judged.

The book is for the people—medical and administrative directors, fire chiefs, dispatch directors, and program supervisors—who direct and run EMS systems all across the country. But it will also have value for paramedics, EMTs, training officers, dispatchers, nurses, doctors, and other EMS professionals, as well as for elected officials, health services researchers, healthcare administrators, and ordinary concerned citizens. Because not every chapter will be equally relevant to every reader, those familiar with emergency medical services and resuscitation can skim or skip chapters 1–3. Those really pressed for time should read chapters 7, 9, and 10.

Chapter 1, "How We Die Suddenly," describes sudden cardiac arrest and laments its generally low survival rates and its diversity in survival throughout the United States.

Chapter 2, "A History of Resuscitation," gives a brief account of resuscitation starting with Biblical times and ending with how modern emergency medical services came to pass.

Chapter 3, "The Causes of Sudden Cardiac Arrest," describes the common and uncommon causes of this event.

Chapter 4, "A Profile of Sudden Cardiac Arrest," provides demographics and elements of successful resuscitation and goes into some detail characterizing the time elements involved in providing care for cardiac arrest patients.

Chapter 5, "Who Will Live and Who Will Die," identifies fifty factors associated with the likelihood of surviving or not surviving cardiac arrest. They are grouped into patient, event, system, and therapy factors and do much to explain why communities succeed or fail in the management of cardiac arrest.

Chapter 6, "Location, Location, Location: Best Places to Have a Cardiac Arrest," gives details on the EMS systems in Seattle and King County, WA, and Rochester, MN, and profiles leaders in these EMS programs.

Chapter 7, "What Can Your Community Do?" challenges a community to assess its own performance with a Community Report Card.

Chapter 8, "A Completed Life," poses the difficult question of who should be resuscitated, on the assumption that not everyone in cardiac arrest should be brought back to life.

Chapter 9, "Putting It All Together," provides a framework for successful programs.

Chapter 10, "An Action Plan," provides a specific path with 15 concrete steps toward improvement. and lays out 4 immediate steps a community can take to improve survival. The first edition of *Resuscitate!* included 25 steps, but from listening to EMS administrators and medical directors, I have pared down and refocused the list to 15 steps. The national steps remain the most challenging to accomplish; they are included because I think attention must continue to be focused on the need for these changes, however difficult they may be.

Chapter 11, "A Vision of the Future," describes both a short-term and a long-term vision. Currently, the national survival rate from cardiac arrest is abysmally low, yet it

can be raised considerably higher. Though I may be constitutionally optimistic, I hope my vision is solidly based in reality. Time will tell.

Shortly after the publication of the first edition of *Resuscitate!* in 2009, my colleagues and I had the opportunity to put its lessons and principles to the test. We started the Resuscitation Academy. The Academy is a partnership between King County EMS, Seattle Medic One, and the Medic One Foundation and is held in Seattle (more information about the Academy is found in the addendum and at resuscitationacademy.org). We offer two academies a year and, though the length varies slightly, the typical academy is two days. Each class has about 30–40 attendees—primarily EMS managers, medical directors, QI officers, and EMS training officers. They have come from throughout the United States and from nine other nations, representing the spectrum of EMS systems from large urban programs to tiny rural volunteer EMS organizations. We are pleased to see the concept spreading with state and regional Resuscitation Academies springing up.

It is always a question as to whether change best starts from the top or from the bottom. Though both probably happen, I think lasting change occurs mostly from the bottom up—the seeds of change have to germinate on soil tended by local leaders and local residents. The Resuscitation Academy attendees have taught me much, not only about the diversity of EMS systems but also about real world challenges EMS managers face—realities compounded by increasing demand and falling resources. The real joy of teaching at the Academy is twofold: first, I get to mount my soapbox and orate about the elements of successful resuscitation and, second, I get to learn about the barriers to implementation. Every attendee at the academy wants to improve survival in his or her own community, but it is painfully apparent, as I learn from the alumni who report back on their efforts, that change is hard. Yet improvements are happening and slowly more and more lives are being snatched from the jaws of death. As my colleague Tom Rea, MD, makes clear at each Academy, change happens only gradually. Don't expect to transform your system overnight. Realize that improvement occurs tiny step by tiny step. It is humbling but true.

So I thank the attendees for all they have taught me. With this second edition of *Resuscitate!* I have included lessons learned from the Resuscitation Academy, as well as my own evolving thoughts on how to improve survival from sudden cardiac arrest, one community at a time. This edition contains entirely new material in chapters 9, 10, and 11 and includes an extensive Addendum on the Resuscitation Academy. I hope you will attend a future Academy and we can meet in person.

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