

# Preface

*Dependability* is a concept that is well established in engineering and management. Expressed quite simply, a system is dependable if its performance can be justifiably trusted by the user. It is the basis for the world of airplanes, nuclear power, railway, and industrial automation, among others. This book explores the engineering, management, and regulatory principles behind dependability. It helps to understand the salient principles behind dependable systems to inspire their application in day-to-day healthcare.

This book was born of the extraordinary generosity and kindness of Dr. Pascal Traverse at Airbus Industrie, Dr. Ying C. Yeh at the Boeing Company, and Jamie Lambert at Wake Forest University. Their kind guidance helped me understand and explore the world of dependability. Dr. Traverse and Dr. Yeh encouraged me to pursue this work as an interdisciplinary undertaking so that the matter may be understood from several different perspectives and applied to the world of medicine. I am immensely grateful to Reliance Industries Limited (RIL), Mumbai, India, and BB&T (Branch Banking and Trust Corporation), Winston-Salem, USA, for sharing their ideas with me.

This book seeks to introduce physicians to engineering and management ideas well established in the industry. Medical education traditionally does not include contemporary management and engineering ideas. The hope is to inspire a generation of physicians who can think like the great engineers and managers of the iconic companies featured in this book to deliver *dependable healthcare*.

Gratitude is owed to many remarkable individuals who helped the long journey which led to this book. I am immensely grateful to Bryan Arkwright for lending me support during the crucial stages of this work. The roots of this journey began in 1993 at Medical College Kottayam where some very committed faculty dedicated themselves to making a physician out of a reluctant medical student. I enjoyed medical school due to the kindness of Dr. K. S. Raju, Dr. Rajsekharan Pillai, Dr. Alice George, Dr. Remani George, Dr. Sumadevi Balachandran, Dr. Agnesamma Jacob, Dr. S. Vaidyanathan, Dr. L. Rajam, Dr. R. V. Jayakumar & Mrs. Jayakumar, Dr. R. N. Sharma, Dr. A. Vimala, Dr. B. Kanakambaran, and

Dr. Gopalakrishna Pillai. My cherished friendships with Kannan Vaidyanathan, Mohan C. Abraham, Nishanth S. Nair, Mathew K. Thomas, Milan C. Mathew, and Zulfi Haneef supported my later career interests.

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I hope the reader will find a wealth of new information and inspiration to apply the methods discussed herein to patient care. I also hope this work will inspire new applications in other medical specialties which will hopefully change healthcare for the better.

This work is dedicated to the memory of my late friend and guide Mr. Monichan Madathil.

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