A Good Time to Be Born

By Perri Klass, M.D. New York, W.W. Norton & Company, 2020. Pages: 384. Price: $15.39 hardcover, $18.95 paperback, $9.99 e-book.

At this time, more than 2 yr into the COVID-19 pandemic, we have marveled at the scientific advances that led to the unprecedented rapid development of safe and effective vaccines for this disease, fostered in large part by great but previously unheralded advances in messenger RNA vaccine research. These astonishing developments were preceded by a century of persistent and innovative antitoxin and vaccine research pursued by many physicians and scientists for diseases from diphtheria to tetanus to polio.

While vaccine development is certainly a fundamental life-saving technology, many other developments have been responsible for prolonging the human lifespan, and especially reducing infant and child mortality. These developments, largely in the realm of public health (documenting infant and child mortality, infant nutrition, and sanitation) as well as contemporaneous scientific developments, are beautifully documented in Perri Klass' book, *A Good Time to be Born* (re-published in 2022 as *The Best Medicine: How Science and Public Health Gave Children a Future*).

In this book, Dr. Klass, a professor of pediatrics and journalism at New York University (New York, New York) and contributor to publication venues including the *New York Times* science section and the *New England Journal of Medicine*, presents both the scientific and public health innovations that have led to the decline in mortality before 1 yr of age in the United States from 20% in 1900 to 0.6% today. Her book is a great complementary analysis of reduction in infant mortality and other public health advances recounted in Steven Johnson's recent publication, "Extra Life: A Short History of Living Longer."[1,2] She also gives readers the social context in which this mortality was endured, through presentation of contemporaneous late nineteenth century parental (frequently maternal) accounts, poetry, and literature in the first chapter, "The Desolation of That Empty Cradle," recounting both the writing and the personal experience of child illness and death of authors such as Dickens, Twain, and Alcott. This was a time during which childhood death was not only common, but expected, from infectious disease (diphtheria, tuberculosis, smallpox), diarrhea, and malnutrition, as well as neonatal death (stillbirth, birth trauma).

Subsequent chapters document the nascent public health efforts of both physicians, such as Josephine Baker, Esther Lovejoy, and Rebecca Crumpler, the first African American woman to earn a medical degree in the United States, and nurses who visited infants to foster sanitation and promoted safe milk storage practices. Observations about milk safety led to universal pasteurization of milk, which greatly reduced infant illness and death from diarrhea. Such observations of the relationships among child nutrition, sanitation, and child health led to improved documentation of infant and child mortality in the early twentieth century with Dr. Baker and others forming the American Association for the Study and Prevention of Infant Mortality in 1909. At that time, there was a fatalism regarding neonatal mortality, exemplified by William Welch, founder of the Johns Hopkins School of Hygiene and Public Health (Baltimore, Maryland), who stated that mortality in the first month of life was not preventable, but careful documentation and prevention efforts continued. Nurses were fundamental in educating mothers about these discoveries, resulting in a decline in infant and child mortality.

As is true today, there were disparities in child illness and mortality rates between immigrant, African American, and Native American communities and the white population, but the well-off and well-educated did not escape illness and death. One of the episodes recounted by Dr. Klass is the death of the 7-yr-old son of Drs. Abraham and Mary Putnam Jacobi in 1883, due to diphtheria. This is especially poignant because Abraham Jacobi is recognized as the founder of American pediatrics, honored by the American Medical Association (Chicago, Illinois) and the American Academy of Pediatrics (Itasca, Illinois) by an award established in his name in 1963. Educated in Germany, he moved to New York in 1853, initially practicing general medicine, obstetrics, and surgery. He developed an interest in pediatrics and took the first position in pediatrics at New York Medical College (Valhalla, New York) in 1860, followed by appointment as clinical professor of diseases of children at New York University Medical College in 1865, setting up the first outpatient pediatric clinic in 1874 at what was to become Mount Sinai Hospital (New York, New York). He promoted breastfeeding and was an early advocate of boiling milk to reduce diarrhea. He studied diphtheria and advocated the use of diphtheria antitoxin. Particularly relevant to anesthesia, inspired by his son's death, he described laryngoscopy and intubation rather than tracheostomy for diphtheria and croup in a presentation to the New York Academy of Medicine (New York, New York) in 1887. This work was done in collaboration with Joseph O'Dwyer, a pediatric colleague. Dr. Abraham Jacobi and his wife, Dr. Mary Putnam Jacobi, worked together to improve child welfare. Dr. Jacobi established the Pediatric Section of the American Medical Association in 1880, followed by the

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American Pediatric Society in 1888, which was the first independent medical specialty society in the United States.

Although childhood illness and mortality were frequently caused by infectious diseases, such as measles, scarlet fever, diphtheria, pertussis, and tuberculosis, diseases related to poor nutrition and sanitation were equally important. The Jacobis worked tirelessly to reduce all these causes of illness and death.

Dr. Klass documents the scourge of streptococcal disease/scarlet fever and the significance of the development of antibiotics in reducing the impact of these infections. The development of the Salk polio vaccine is vividly told, as well as early clinical trials of drugs and vaccines, which today would be regarded as ethically questionable. She also covers issues of the history of drug development, drug safety, the origins of the Food and Drug Administration (Silver Spring, Maryland), and ongoing issues of drug development for pediatric patients.

In addition to the remarkable story of Dr. O'Dwyer's and Dr. Jacobi's development of laryngoscopy/intubation in children with "diphtheritic croup" her chapter "The Incubator Show: Life and Death in the Delivery Room and Nursery" summarizes the great advances in obstetrics and neonatology that have shown Welch was wrong in stating that death in the first month of life was not preventable. Dr. Klass recounts her experiences from her own pediatric training, which were contemporaneous with mine; the progress from the 1970s when there was question about the viability of 28-week, 1,000-g babies, until today, when 25-week, 600-g babies survive, is remarkable. She vividly remembers the (provider) oral suctioning of meconium in the delivery room. She honors Virginia Apgar; the advances in the pathophysiology, treatment, and prevention of respiratory distress syndrome of prematurity (and the role of Mary Ellen Avery); and controversies in the use of oxygen, including retinopathy of prematurity. Dr. Klass focuses on advances in neonatal intensive care, addressing advances in pediatric oncology, surgery, and critical care only briefly in the last chapter, "The Promise of Safety." As important as these technologic advances are, she also points out the impact of the recognition of the role of infant sleep position in sudden infant death, with the "back to sleep" initiative resulting in a greatly reduced prevalence of these deaths.

Dr. Klass concludes by pointing out that disparities in access to and delivery of pediatric health care remain, as is continually illustrated by publications in the anesthesiology literature documenting disparities in pain treatment by race and ethnicity, as well as persistently high maternal mortality with alarming racial disparities. Although the scientific advances of antibiotics, vaccinations, and medical technology in both diagnosis and treatment have resulted in great reductions in infant and childhood illness and mortality, the search for optimal health, equitably delivered, for all our children is a worthy goal for us all.

Lynne G. Maxwell, M.D., F.A.A.P. Perelman School of Medicine, University of Pennsylvania, Philadelphia, Pennsylvania. lynne.maxwell@gmail.com

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