

Ebola The Natural And Human History Of A Deadly Virus David Quammen

"From the author of *The Fever*, a wide-ranging inquiry into the origins of pandemics Interweaving history, original reportage, and personal narrative, *Pandemic* explores the origins of epidemics, drawing parallels between the story of cholera—one of history's most disruptive and deadly pathogens—and the new pathogens that stalk humankind today, from Ebola and avian influenza to drug-resistant superbugs. More than three hundred infectious diseases have emerged or reemerged in new territory during the past fifty years, and 90 percent of epidemiologists expect that one of them will cause a disruptive, deadly pandemic sometime in the next two generations. To reveal how that might happen, Sonia Shah tracks each stage of cholera's dramatic journey from harmless microbe to world-changing pandemic, from its 1817 emergence in the South Asian hinterlands to its rapid dispersal across the nineteenth-century world and its latest beachhead in Haiti. She reports on the pathogens following in cholera's footsteps, from the MRSA bacterium that besieges her own family to the never-before-seen killers emerging from China's wet markets, the surgical wards of New Delhi, the slums of Port-au-Prince, and the suburban backyards of the East Coast. By delving into the convoluted science, strange politics, and checkered history of one of the world's deadliest diseases, *Pandemic* reveals what the next epidemic might look like—and what we can do to prevent it"--

Tropical emerging diseases pose a significant risk for the circulation of old and new pathogens in areas previously unknown, also implying the possibility of new morbidities and mortalities and new consequences for naïve populations. Globalization, migration and travel are key factors for tropical diseases, and represent the need for integration of tropical medicine, travel medicine and epidemiology in the understanding of such complex situations. Neglected tropical diseases such as leprosy or Chagas disease, arboviral diseases, HIV, Ebola, and arenaviral infections are just a few examples. This book tries to update significant epidemiological and clinical research in many aspects with a multinational perspective.

Drawing on real accounts of the Ebola outbreak that devastated West Africa, this poignant, timely fable reflects on both the strength and the fragility of life and humanity's place in the world. Two boys venture from their village to hunt in a nearby forest, where they shoot down bats with glee, and cook their prey over an open fire. Within a month, they are dead, bodies ravaged by an insidious disease that neither the local healer's potions nor the medical team's treatments could cure. Compounding the family's grief, experts warn against touching the sick. But this caution comes too late: the virus spreads rapidly, and the boys' father is barely able to send his eldest daughter away for a chance at survival. In a series of moving snapshots, Véronique Tadjo illustrates the terrible extent of the Ebola epidemic, through the eyes of those affected in myriad ways: the doctor who tirelessly treats patients day after day in a sweltering tent, protected from the virus only by a plastic suit; the student who volunteers to work as a gravedigger while universities are closed, helping the teams overwhelmed by the sheer number of bodies; the grandmother who agrees to take in an orphaned boy cast out of his village for fear of infection. And watching over them all is the ancient and wise Baobab tree, mourning the dire state of the earth yet providing a sense of hope for the future. Acutely relevant to our times in light of the coronavirus pandemic, *In the Company of Men* explores critical questions about how we cope with a global crisis and how we can combat fear and prejudice.

Zoonoses are a persistent threat to the global human health Today, more than 200 diseases occurring in humans and animals are known to be mutually transmitted. Classical infectious diseases, such as rabies, plague, and yellow fever, have not been eradicated despite major efforts. New zoonotic diseases are on the increase due global conditions such as overpopulation, wars, and food scarcity, which facilitate human contact with rodents, stray animals, and their parasites. In addition, humans are unwittingly becoming accidental hosts and new links in an infectious chain by engaging in activities such as survival training, which involves camping in open areas and consumption of raw or insufficiently cooked food. Zoonotic infections cause a variety of symptoms that often do not provide clear evidence of a known disease. Zoonoses, Fourth Edition, describes most occurring worldwide zoonosis and facilitates the identification, diagnosis and treatment of zoonotic infections. Written by a team of doctors, medical microbiologists and veterinarians, this completely, revised edition covers all aspects of the epidemiology and prevention of zoonotic diseases through clear descriptions of various illnesses. Specifically, this fourth edition covers zoonosis caused by viruses, bacteria, fungi and parasites infections caused by animal bites infections and intoxications by animal foods Iatrogenic transmission of zoonotic pathogens Zoonoses is an indispensable reference for clinicians and laboratorians.

This narrative history| memoir provides a close look at work in the West Africa Ebola epidemic in 2014 by a physician who was on the ground in Guinea, Sierra Leone, Nigeria. It gives a personal account of challenges and opportunities, some captured and some lost, placing events in the context of affected communities, responders, and the global health community.

"A frightening and fascinating masterpiece of science reporting that reads like a detective story." —Walter Isaacson In 1976 a deadly virus emerged from the Congo forest. As swiftly as it came, it disappeared, leaving no trace. Over the four decades since, Ebola has emerged sporadically, each time to devastating effect. It can kill up to 90 percent of its victims. In between these outbreaks, it is untraceable, hiding deep in the jungle. The search is on to find Ebola's elusive host animal. And until we find it, Ebola will continue to strike. Acclaimed science writer and explorer David Quammen first came near the virus while he was traveling in the jungles of Gabon, accompanied by local men whose village had been devastated by a recent outbreak. Here he tells the story of Ebola—its past, present, and its unknowable future. Extracted from *Spillover* by David Quammen, updated and with additional material.

A fast-spreading disease with no cure takes the United States by storm in Robin Cook's "most harrowing medical horror story" (*The New York Times*). Murder and intrigue reach epidemic proportions when a devastating plague sweeps the country. Dr. Marissa Blumenthal of the Atlanta Centers for Disease Control investigates—and soon uncovers the medical world's deadliest secret...

First discovered in 1976, and long regarded as an easily manageable virus affecting isolated rural communities, Ebola rocketed to world prominence in 2014 as a deadly epidemic swept through Guinea, Sierra Leone, and Liberia in West Africa. Thousands of people died as the extraordinarily contagious disease spread rapidly from villages to urban centres. Initial quarantine responses proved often too little and too late, and the medical infrastructure of the affected countries struggled to cope. By August 2014, several months after the start of the outbreak, the WHO declared the epidemic a public health emergency and international aid teams and volunteers began to pour in. But halting the epidemic proved to be hugely challenging, not only in terms of the practicalities of dealing with the sheer numbers of patients carrying the highly infectious virus, but in dealing with social and cultural barriers. The author, Dorothy Crawford, visited Sierra Leone while the epidemic was ongoing and met with those on the

frontline in the fight against the virus. In *Ebola* Crawford combines personal accounts from these brave medical workers with the latest scientific reports to tell the story of the epidemic as it unfolded, and how it has changed our understanding of the virus. She looks at its origin and spread, the international response, and its devastating legacy to the health of those living in the three worst affected countries. She describes the efforts to prevent international spread, the treatment options for Ebola, including the drug and vaccine trials that eventually got underway in 2015, and the sensitive issue of running trials of experimental therapies during a lethal epidemic. Our understanding of the Ebola virus continues to develop as long-term health problems and complications following recovery from the disease are being identified. Epidemics of Ebola or other dangerous microbes will continue to threaten the world regularly. Already concerns have been raised by the possible impact of the Zika virus. What lessons have been learnt from Ebola? How, asks Crawford, might we prevent a repeat of the awful suffering seen in 2014-16?

The most recent Ebola epidemic that began in late 2013 alerted the entire world to the gaps in infectious disease emergency preparedness and response. The regional outbreak that progressed to a significant public health emergency of international concern (PHEIC) in a matter of months killed 11,310 and infected more than 28,616. While this outbreak bears some unique distinctions to past outbreaks, many characteristics remain the same and contributed to tragic loss of human life and unnecessary expenditure of capital: insufficient knowledge of the disease, its reservoirs, and its transmission; delayed prevention efforts and treatment; poor control of the disease in hospital settings; and inadequate community and international responses. Recognizing the opportunity to learn from the countless lessons of this epidemic, the National Academies of Sciences, Engineering, and Medicine convened a workshop in March 2015 to discuss the challenges to successful outbreak responses at the scientific, clinical, and global health levels. Workshop participants explored the epidemic from multiple perspectives, identified important questions about Ebola that remained unanswered, and sought to apply this understanding to the broad challenges posed by Ebola and other emerging pathogens, to prevent the international community from being taken by surprise once again in the face of these threats. This publication summarizes the presentations and discussions from the workshop.

Why have island ecosystems always suffered such high rates of extinction? In our age, with all the world's landscapes, from Tasmania to the Amazon to Yellowstone, now being carved into island-like fragments by human activity, the implications of this question are more urgent than ever. Over the past eight years, David Quammen has followed the threads of island biogeography on a globe-encircling journey of discovery.

Globalization of the food supply has created conditions favorable for the emergence, reemergence, and spread of food-borne pathogens-compounding the challenge of anticipating, detecting, and effectively responding to food-borne threats to health. In the United States, food-borne agents affect 1 out of 6 individuals and cause approximately 48 million illnesses, 128,000 hospitalizations, and 3,000 deaths each year. This figure likely represents just the tip of the iceberg, because it fails to account for the broad array of food-borne illnesses or for their wide-ranging repercussions for consumers, government, and the food industry-both domestically and internationally. A One Health approach to food safety may hold the promise of harnessing and integrating the expertise and resources from across the spectrum of multiple health domains including the human and veterinary medical and plant pathology communities with those of the wildlife and aquatic health and ecology communities. The IOM's Forum on Microbial Threats hosted a public workshop on December 13 and 14, 2011 that examined issues critical to the protection of the nation's food supply. The workshop explored existing knowledge and unanswered questions on the nature and extent of food-borne threats to health. Participants discussed the globalization of the U.S. food supply and the burden of illness associated with foodborne threats to health; considered the spectrum of food-borne threats as well as illustrative case studies; reviewed existing research, policies, and practices to prevent and mitigate foodborne threats; and, identified opportunities to reduce future threats to the nation's food supply through the use of a "One Health" approach to food safety. *Improving Food Safety Through a One Health Approach: Workshop Summary* covers the events of the workshop and explains the recommendations for future related workshops.

Read this gripping, timely book about the transmission of deadly viruses from animal to human populations, and how we can fight the current Covid-19 pandemic. WITH A NEW AFTERWORD ON CORONAVIRUS As globalization spreads and as we destroy the ancient ecosystems, we encounter strange and dangerous infections that originate in animals but that can be transmitted to humans. Diseases that were contained are being set free and the results are potentially catastrophic. In a journey that takes him from southern China to the Congo, from Bangladesh to Australia, David Quammen tracks these infections to their source, and asks what we can do to prevent some new pandemic spreading across the face of the earth. As we continue to feel the global impact of Covid-19, discover the book that predicted this viral disaster and the science that could stop the next one in its tracks. 'A tremendous book...this gives you all you need to know and all you should know' Sunday Times 'Chilling... [A] brilliant, devastating book' Daily Mail 'A frightening and fascinating masterpiece of science reporting that reads like a detective story' Walter Isaacson

Shortlisted for the Fage and Oliver Prize 2018 From December 2013, the largest Ebola outbreak in history swept across West Africa, claiming thousands of lives in Liberia, Sierra Leone and Guinea. By the middle of 2014, the international community was gripped by hysteria. Experts grimly predicted that millions would be infected within months, and a huge international control effort was mounted to contain the virus. Yet paradoxically, by this point the disease was already going into decline in Africa itself. So why did outside observers get it so wrong? Paul Richards draws on his extensive first-hand experience in Sierra Leone to argue that the international community's panicky response failed to take account of local expertise and common sense. Crucially, Richards shows that the humanitarian response to the disease was most effective in those areas where it supported these initiatives and that it hampered recovery when it ignored or disregarded local knowledge.

"Paul Farmer brings his considerable intellect, empathy, and expertise to bear in this powerful and deeply researched

account of the Ebola outbreak that struck West Africa in 2014. It is hard to imagine a more timely or important book.” —Bill and Melinda Gates “[The] history is as powerfully conveyed as it is tragic . . . Illuminating . . . Invaluable.” —Steven Johnson, *The New York Times Book Review* In 2014, Sierra Leone, Liberia, and Guinea suffered the worst epidemic of Ebola in history. The brutal virus spread rapidly through a clinical desert where basic health-care facilities were few and far between. Causing severe loss of life and economic disruption, the Ebola crisis was a major tragedy of modern medicine. But why did it happen, and what can we learn from it? Paul Farmer, the internationally renowned doctor and anthropologist, experienced the Ebola outbreak firsthand—Partners in Health, the organization he founded, was among the international responders. In *Fevers, Feuds, and Diamonds*, he offers the first substantive account of this frightening, fast-moving episode and its implications. In vibrant prose, Farmer tells the harrowing stories of Ebola victims while showing why the medical response was slow and insufficient. Rebutting misleading claims about the origins of Ebola and why it spread so rapidly, he traces West Africa’s chronic health failures back to centuries of exploitation and injustice. Under formal colonial rule, disease containment was a priority but care was not – and the region’s health care woes worsened, with devastating consequences that Farmer traces up to the present. This thorough and hopeful narrative is a definitive work of reportage, history, and advocacy, and a crucial intervention in public-health discussions around the world.

As the pharmaceutical industry continues to advance, new techniques in drug design are emerging. In order to deliver optimum care to patients, the development of innovative pharmacological techniques has become a widely studied topic. *Applied Case Studies and Solutions in Molecular Docking-Based Drug Design* is a pivotal reference source for the latest scholarly research on the progress of pharmaceutical design and computational approaches in the field of molecular docking. Highlighting innovative research perspectives and real-world applications, this book is ideally designed for professionals, researchers, practitioners, and medical chemists actively involved in computational chemistry and pharmaceutical sciences.

Ebola Virus Disease: From Origins to Outbreak covers Ebola virus disease in its entirety from its origins through major outbreaks in the past to the present day outbreak. It contains information on the West Saharan response to Ebola as well as highlights from the field in West Africa from Dr. Qureshi and Dr. Chughtai, helping to solve the primary question of what’s next and aiding in formulating a path forward. With a growing awareness of the devastating effects of this viral disease and an influx of topical research, this book provides the information the global community of researchers, clinicians and students need to better inform their research and study of Ebola virus disease. Includes perspectives from the 2014-2015 outbreak from the field Provides a detailed overview of the origins of Ebola virus through present day discoveries Written with an integrative approach, incorporating scientific research with insights from the field Finalist for the 2021 PEN/E.O. Wilson Literary Science Writing Award A Library Journal Best Science & Technology Book of 2020 A Publishers Weekly Best Nonfiction Book of 2020 2020 Goodreads Choice Award Semifinalist in Science & Technology A prize-winning journalist upends our centuries-long assumptions about migration through science, history, and reporting--predicting its lifesaving power in the face of climate change. The news today is full of stories of dislocated people on the move. Wild species, too, are escaping warming seas and desiccated lands, creeping, swimming, and flying in a mass exodus from their past habitats. News media presents this scrambling of the planet’s migration patterns as unprecedented, provoking fears of the spread of disease and conflict and waves of anxiety across the Western world. On both sides of the Atlantic, experts issue alarmed predictions of millions of invading aliens, unstoppable as an advancing tsunami, and countries respond by electing anti-immigration leaders who slam closed borders that were historically porous. But the science and history of migration in animals, plants, and humans tell a different story. Far from being a disruptive behavior to be quelled at any cost, migration is an ancient and lifesaving response to environmental change, a biological imperative as necessary as breathing. Climate changes triggered the first human migrations out of Africa. Falling sea levels allowed our passage across the Bering Sea. Unhampered by barbed wire, migration allowed our ancestors to people the planet, catapulting us into the highest reaches of the Himalayan mountains and the most remote islands of the Pacific, creating and disseminating the biological, cultural, and social diversity that ecosystems and societies depend upon. In other words, migration is not the crisis--it is the solution. Conclusively tracking the history of misinformation from the 18th century through today’s anti-immigration policies, *The Next Great Migration* makes the case for a future in which migration is not a source of fear, but of hope.

For years, scientists have been warning us that a pandemic was all but inevitable. Now it’s here, and the rest of us have a lot to learn. Fortunately, science writer Carl Zimmer is here to guide us. In this compact volume, he tells the story of how the smallest living things known to science can bring an entire planet of people to a halt--and what we can learn from how we’ve defeated them in the past. *Planet of Viruses* covers such threats as Ebola, MERS, and chikungunya virus; tells about recent scientific discoveries, such as a hundred-million-year-old virus that infected the common ancestor of armadillos, elephants, and humans; and shares new findings that show why climate change may lead to even deadlier outbreaks. Zimmer’s lucid explanations and fascinating stories demonstrate how deeply humans and viruses are intertwined. Viruses helped give rise to the first life-forms, are responsible for many of our most devastating diseases, and will continue to control our fate for centuries. Thoroughly readable, and, for all its honesty about the threats, as reassuring as it is frightening, *A Planet of Viruses* is a fascinating tour of a world we all need to better understand.

The bestselling landmark account of the first emergence of the Ebola virus. Now a mini-series drama starring Julianna Margulies, Topher Grace, Liam Cunningham, James D’Arcy, and Noah Emmerich on National Geographic. A highly infectious, deadly virus from the central African rain forest suddenly appears in the suburbs of Washington, D.C. There is no cure. In a few days 90 percent of its victims are dead. A secret military SWAT team of soldiers and scientists is mobilized to stop the outbreak of this exotic "hot" virus. *The Hot Zone* tells this dramatic story, giving a hair-raising account of the appearance of rare and lethal viruses and their "crashes" into the human race. Shocking, frightening, and impossible to ignore, *The Hot Zone* proves that truth really is scarier than fiction.

Now in paperback--the timely and terrifying investigation into the dark underworld of biological weapons from the #1 "New York

Times" bestselling author of "The Hot Zone."

A documentary novel telling of the first outbreak of the Ebola virus in Zaire in 1976, based on the personal experiences of the author, an American physician who worked to control the epidemic.

Where does Ebola originate? How does it spread? And what should governments do to stop it? Few people understand the answers to these questions better than Pulitzer Prize-winning journalist Laurie Garrett. In this masterful account of the 1995 Ebola outbreak in Zaire, Garrett, now the Senior Fellow for Global Health at the Council on Foreign Relations, shows how superstition and fear, compounded by a lack of resources, education, and clearheaded government planning have plagued our response to Ebola. In an extensive new introduction, Garrett forcefully argues that learning from past outbreaks is the key to solving the Ebola crisis of 2014. In her account of the 1995 Zaire outbreak, first published in her bestselling book *Betrayal of Trust*, Garrett takes readers through the epidemic's course—beginning with the Kikwit villager who first contracted it from an animal encounter while chopping wood for charcoal deep in the forest. As she documents the outbreak in riveting detail, Garrett shows why our trust in world governments to protect people's health has been irrevocably broken. She details the international community's engagement in the epidemic's aftermath: a pattern of response and abandonment, urgency that devolves into amnesia. *Ebola: Story of an Outbreak* is essential reading for anyone who wants to comprehend Ebola, one of mankind's most mysterious, malicious scourges. Garrett has issued a powerful call for governments, citizens, and the disease-fighting agencies of the wealthy world to take action. Since the 2014 Ebola outbreak many public- and private-sector leaders have seen a need for improved management of global public health emergencies. The effects of the Ebola epidemic go well beyond the three hardest-hit countries and beyond the health sector. Education, child protection, commerce, transportation, and human rights have all suffered. The consequences and lethality of Ebola have increased interest in coordinated global response to infectious threats, many of which could disrupt global health and commerce far more than the recent outbreak. In order to explore the potential for improving international management and response to outbreaks the National Academy of Medicine agreed to manage an international, independent, evidence-based, authoritative, multistakeholder expert commission. As part of this effort, the Institute of Medicine convened four workshops in summer of 2015 to inform the commission report. The presentations and discussions from the Workshop on Research and Development of Medical Products are summarized in this report.

Annotation This volume discusses health system policies (including financing global health, quality of care, and strengthening regulatory systems in low- and middle-income countries), as well as the methods and resources used throughout all DCP3 volumes.

In this New York Times bestseller and longlist nominee for the National Book Award, "our greatest living chronicler of the natural world" (The New York Times), David Quammen explains how recent discoveries in molecular biology affect our understanding of evolution and life's history. In the mid-1970s, scientists began using DNA sequences to reexamine the history of all life. Perhaps the most startling discovery to come out of this new field—the study of life's diversity and relatedness at the molecular level—is horizontal gene transfer (HGT), or the movement of genes across species lines. It turns out that HGT has been widespread and important; we now know that roughly eight percent of the human genome arrived sideways by viral infection—a type of HGT. In *The Tangled Tree*, "the grandest tale in biology....David Quammen presents the science—and the scientists involved—with patience, candor, and flair" (Nature). We learn about the major players, such as Carl Woese, the most important little-known biologist of the twentieth century; Lynn Margulis, the notorious maverick whose wild ideas about "mosaic" creatures proved to be true; and Tsutomu Wantanabe, who discovered that the scourge of antibiotic-resistant bacteria is a direct result of horizontal gene transfer, bringing the deep study of genome histories to bear on a global crisis in public health. "David Quammen proves to be an immensely well-informed guide to a complex story" (The Wall Street Journal). In *The Tangled Tree*, he explains how molecular studies of evolution have brought startling recognitions about the tangled tree of life—including where we humans fit upon it. Thanks to new technologies, we now have the ability to alter even our genetic composition—through sideways insertions, as nature has long been doing. "The Tangled Tree is a source of wonder....Quammen has written a deep and daring intellectual adventure" (The Boston Globe). Bizarre illnesses and plagues that kill people in the most unspeakable ways. Obsessive and inspired efforts by scientists to solve mysteries and save lives. From *The Hot Zone* to *The Demon in the Freezer* and beyond, Richard Preston's bestselling works have mesmerized readers everywhere by showing them strange worlds of nature they never dreamed of. *Panic in Level 4* is a grand tour through the eerie and unforgettable universe of Richard Preston, filled with incredible characters and mysteries that refuse to leave one's mind. Here are dramatic true stories from this acclaimed and award-winning author, including: • The phenomenon of "self-cannibals," who suffer from a rare genetic condition caused by one wrong letter in their DNA that forces them to compulsively chew their own flesh—and why everyone may have a touch of this disease. • The search for the unknown host of Ebola virus, an organism hidden somewhere in African rain forests, where the disease finds its way into the human species, causing outbreaks of unparalleled horror. • The brilliant Russian brothers—"one mathematician divided between two bodies"—who built a supercomputer in their apartment from mail-order parts in an attempt to find hidden order in the number pi (?). In fascinating, intimate, and exhilarating detail, Richard Preston portrays the frightening forces and constructive discoveries that are currently roiling and reordering our world, once again proving himself a master of the nonfiction narrative and, as noted in The Washington Post, "a science writer with an uncommon gift for turning complex biology into riveting page-turners."

Imagine a killer with the infectiousness of the common cold and power of the Black Death. Imagine something so deadly that it wipes out 90% of those it touches. Imagine an organism against which there is no defence. But you don't need to imagine. Such a killer exists: it is a virus and its name is Ebola. *The Hot Zone* tells what happens when the unthinkable becomes reality: when a deadly virus, from the rain forests of Africa, crosses continents and infects a monkey house ten miles from the White House. Ebola is that reality. It has the power to decimate the world's population. Try not to panic. It will be back. There is nothing you can do...

Examines the emergence and causes of new diseases all over the world, describing a process called "spillover" where illness originates in wild animals before being passed to humans and discusses the potential for the next huge pandemic. 70,000 first printing.

A microbiologist describes his adventure-filled career, discussing his time spent in Central Africa in the 1970s identifying the Ebola virus and his work there again in the 1980s as part of the area's first international AIDS efforts. 20,000 first printing.

NEW YORK TIMES BESTSELLER • An urgent wake-up call about the future of emerging viruses and a gripping account of the doctors and scientists fighting to protect us, told through the story of the deadly 2013–2014 Ebola epidemic "Crisis in the Red Zone reads like a thriller. That the story it tells is all true makes it all more terrifying."—Elizabeth Kolbert, Pulitzer Prize-winning author of *The Sixth Extinction* From the #1 bestselling author of *The Hot Zone*, now a National Geographic original miniseries . . . This time, Ebola started with a two-year-old child who likely had contact with a wild creature and whose entire family quickly fell ill and died. The ensuing global drama activated health professionals in North America, Europe, and Africa in a desperate race against time to contain the viral wildfire. By the end—as the virus mutated into its deadliest form, and spread farther and faster than ever before—30,000 people would be infected, and the dead would be spread across eight countries on three continents. In this taut and suspenseful medical drama, Richard Preston deeply chronicles the pandemic, in which we saw for the first time the specter of Ebola jumping continents, crossing the Atlantic, and infecting people in America.

Rich in characters and conflict—physical, emotional, and ethical—Crisis in the Red Zone is an immersion in one of the great public health calamities of our time. Preston writes of doctors and nurses in the field putting their own lives on the line, of government bureaucrats and NGO administrators moving, often fitfully, to try to contain the outbreak, and of pharmaceutical companies racing to develop drugs to combat the virus. He also explores the charged ethical dilemma over who should and did receive the rare doses of an experimental treatment when they became available at the peak of the disaster. Crisis in the Red Zone makes clear that the outbreak of 2013–2014 is a harbinger of further, more severe outbreaks, and of emerging viruses heretofore unimagined—in any country, on any continent. In our ever more interconnected world, with roads and towns cut deep into the jungles of equatorial Africa, viruses both familiar and undiscovered are being unleashed into more densely populated areas than ever before. The more we discover about the virosphere, the more we realize its deadly potential. Crisis in the Red Zone is an exquisitely timely book, a stark warning of viral outbreaks to come.

The Ebola and Marburg viruses are a pair of filoviruses that are among the most lethal hemorrhagic viruses on the planet. The authors present a review of past and current research into these pathogens, including 12 papers addressing the structure of the viral proteins; genomic replication; molecular mechanisms of entry; pathogenesis in nonhuman primates, guinea pigs, and mice; virus modulation of innate immunity; and cellular and molecular mechanisms of Ebola pathogenicity and related approaches to vaccine development.

A wide-ranging study that illuminates the connection between epidemic diseases and societal change, from the Black Death to Ebola This sweeping exploration of the impact of epidemic diseases looks at how mass infectious outbreaks have shaped society, from the Black Death to today. In a clear and accessible style, Frank M. Snowden reveals the ways that diseases have not only influenced medical science and public health, but also transformed the arts, religion, intellectual history, and warfare. A multidisciplinary and comparative investigation of the medical and social history of the major epidemics, this volume touches on themes such as the evolution of medical therapy, plague literature, poverty, the environment, and mass hysteria. In addition to providing historical perspective on diseases such as smallpox, cholera, and tuberculosis, Snowden examines the fallout from recent epidemics such as HIV/AIDS, SARS, and Ebola and the question of the world's preparedness for the next generation of diseases.

An important resource that reviews the various infectious diseases that affect bats and bat populations Bats and Human Health: Ebola, SARS, Rabies and Beyond covers existing literature on viral, bacterial, protozoan, and fungal infections of bats and how these infections affect bat populations. The book also offers an overview of the potential for zoonotic transmission of infectious diseases from bats to humans or domestic animals. While most prior publications on the subject have dealt only with bat viral infections, this text closely covers a wide range of bat infections, from viral and bacterial infections to protist and fungal infections. Chapters on viral infections cover rabies, filoviruses, henipaviruses, and other RNA viruses, as well as information on bat virome studies. The book then provides information on bacterial infections—including arthropod-borne and other bacteria that affect bats—before moving on to protist infections, including apicomplexans and kinetoplastids, and fungal infections, including white-nose syndrome, *histoplasma capsulatum*, and other fungi. Comprehensive in scope, yet another key feature of this book is a searchable database that includes bat species, bat family, bat diet, bat location, type and classification of infecting microbes, and categories of microbes. This vital resource also: Provides a history and comprehensive overview of bat-borne diseases Incorporates information from the World Health Organization, as well as historical data from the National Libraries of Health and infectious disease journals Covers a variety of diseases including viral infections, bacterial infections, protist infections, and fungal infections Written for microbiologist, bat researchers, and conservationists, Bats and Human Health provides a comprehensive exploration of the various types of microbes that affect bats and their potential to affect human populations.

The 2014–2015 Ebola epidemic in western Africa was the longest and most deadly Ebola epidemic in history, resulting in 28,616 cases and 11,310 deaths in Guinea, Liberia, and Sierra Leone. The Ebola virus has been known since 1976, when two separate outbreaks were identified in the Democratic Republic of Congo (then Zaire) and South Sudan (then Sudan). However, because all Ebola outbreaks prior to that in West Africa in 2014–2015 were relatively isolated and of short duration, little was known about how to best manage patients to improve survival, and there were no approved therapeutics or vaccines. When the World Health Organization declared the 2014–2015 epidemic a public health emergency of international concern in August 2014, several teams began conducting formal clinical trials in the Ebola affected countries during the outbreak. Integrating Clinical Research into Epidemic Response: The Ebola Experience assesses the value of the clinical trials held during the 2014–2015 epidemic and makes recommendations about how the conduct of trials could be improved in the context of a future international emerging or re-emerging infectious disease events.

Ebola epidemics have had immediate and lasting impact in Africa and beyond, with its high case fatality and societal disruption. Its rapid spread, coupled with the limited knowledge, serves as a recipe for disaster and panic in the community. Health workers are particularly at risk, paying heavily with their lives. Sharing knowledge from various experts in basic sciences that support vaccine and drug development, as well as improving community surveillance and case management, enriches our understanding of this highly fatal and contagious disease. In a world that is fast becoming a global village, communicable diseases from low-resource setting are gradually becoming a global health threat. This book seeks to discuss emerging advances in the Ebola control.

In this "frightening and fascinating masterpiece" (Walter Isaacson), David Quammen explores the true origins of HIV/AIDS. The real story of AIDS—how it originated with a virus in a chimpanzee, jumped to one human, and then infected more than 60 million people—is very different from what most of us think we know. Recent research has revealed dark surprises and yielded a radically new scenario of how AIDS began and spread. Excerpted and adapted from the book Spillover, with a new introduction by the author, Quammen's hair-raising investigation tracks the virus from chimp populations in the jungles of southeastern Cameroon to laboratories across the globe, as he unravels the mysteries of when, where, and under what circumstances such a consequential "spillover" can happen. An audacious search for answers amid more than a century of data, The Chimp and the River tells the haunting tale of one of the most devastating pandemics of our time.

H1N1 ("swine flu"), SARS, mad cow disease, and HIV/AIDS are a few examples of zoonotic diseases—diseases transmitted between humans and animals. Zoonotic diseases are a growing concern given multiple factors: their often novel and unpredictable nature, their ability to emerge anywhere and spread rapidly around the globe, and their major economic toll on several disparate industries. Infectious disease surveillance systems are used to detect this threat to human and animal health. By systematically collecting data on the occurrence of infectious diseases in humans and animals, investigators can track the spread of disease and provide an early warning to human and animal health officials, nationally and internationally, for follow-up and response.

Unfortunately, and for many reasons, current disease surveillance has been ineffective or untimely in alerting officials to emerging zoonotic diseases. Sustaining Global Surveillance and Response to Emerging Zoonotic Diseases assesses some of the disease surveillance systems around the world, and recommends ways to improve early detection and response. The book presents

solutions for improved coordination between human and animal health sectors, and among governments and international organizations. Parties seeking to improve the detection and response to zoonotic diseases--including U.S. government and international health policy makers, researchers, epidemiologists, human health clinicians, and veterinarians--can use this book to help curtail the threat zoonotic diseases pose to economies, societies, and health.

"Quammen brilliantly and powerfully re-creates the 19th century naturalist's intellectual and spiritual journey."--Los Angeles Times Book Review Twenty-one years passed between Charles Darwin's epiphany that "natural selection" formed the basis of evolution and the scientist's publication of *On the Origin of Species*. Why did Darwin delay, and what happened during the course of those two decades? The human drama and scientific basis of these years constitute a fascinating, tangled tale that elucidates the character of a cautious naturalist who initiated an intellectual revolution.

"[Mr. Quammen] is not just among our best science writers but among our best writers, period." —Dwight Garner, *New York Times* The next big human pandemic—the next disease cataclysm, perhaps on the scale of AIDS or the 1918 influenza—is likely to be caused by a new virus coming to humans from wildlife. Experts call such an event “spillover” and they warn us to brace ourselves. David Quammen has tracked this subject from the jungles of Central Africa, the rooftops of Bangladesh, and the caves of southern China to the laboratories where researchers work in space suits to study lethal viruses. He illuminates the dynamics of Ebola, SARS, bird flu, Lyme disease, and other emerging threats and tells the story of AIDS and its origins as it has never before been told. *Spillover* reads like a mystery tale, full of mayhem and clues and questions. When the Next Big One arrives, what will it look like? From which innocent host animal will it emerge? Will we be ready?

Ebola: The Natural and Human History of a Deadly Virus W. W. Norton & Company

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