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Xiaofeng Liang  
Editor

# Immunization Program in China



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*Editor*  
Xiaofeng Liang  
Chinese Center for Disease Control and Prevention  
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## Associate Editors

Lance Rodewald

Expanded Program on Immunization Team Lead, WHO China Office

Zundong Yin

National Immunization Program, Chinese Center for Disease Control and Prevention

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## Preface

Immunization is one of the most effective and cost-effective means to prevent infectious diseases. The Chinese Government has long attached great importance to immunization, and with several generations of effort, China has made great achievements through its immunization program. Major accomplishments include elimination of smallpox and polio, near elimination of measles, a greater than 90% decrease of chronic hepatitis B infection among children, and substantial declines of the incidences of hepatitis A, meningococcal meningitis, and Japanese encephalitis. Incidences of vaccine preventable diseases covered by the National Immunization Program fell 99% after implementation of China's Expanded Program of Immunization (EPI) in 1978. China's EPI system plays invaluable roles protecting people's health, increasing life expectancy, and providing huge and persistent economic and social benefits.

China is the most populous country in the world, but its rapid development over the last four decades has been somewhat unbalanced. Remote and poor areas can be difficult to reach, and provision of immunization services to the floating population and left-behind children continues to be barriers to immunization. With declines in incidence, and therefore visibility of vaccine preventable diseases, and with increased public concern about adverse events following immunization (AEFI), including their investigation and adjudication, communication with the public and the media also pose a great challenge.

Using a combination of narrative and storytelling, this book describes a few of the many touching stories that happened in China's immunization effort during the last 60 years. The stories demonstrate some of the hardships and difficulties behind the immunization achievements and introduce the effort of EPI staff and the support and assistance from the international community.

The book consists of nine easy-to-understand chapters, starting with an introduction of vaccination and immunization policy before the 1970s by the former director of the National Immunization Program (NIP) of the Chinese Center for Disease Control and Prevention's (China CDC). This chapter describes how China's government gradually brought immunization into legal management and explores selected achievements and challenges faced by the immunization program. The next chapter introduces immunization services in China, including vaccine management, human resource capacity building, patterns of vaccination, and China's integrated disease surveillance system.

Starting in 2001, China began to improve AEFI surveillance and management as part of a program to strengthen the National Regulatory Authorities (NRA) for vaccines. In March of 2011, the World Health Organization (WHO) announced that China passed its formal NRA assessment, indicating that vaccine regulation and safety monitoring had achieved WHO/international standards. The chapter on management of AEFI is a compelling read, with several typical AEFI events presented from beginning to end. The stories about AEFI management show the professionalism of vaccination staff and experts and provide experience for similar events in China and other countries.

The chapter on innovative vaccines introduces China's independent research and development, describing the professionalism and selfless dedication of Chinese vaccine scientists. The chapter on the "journey of a vaccine" describes the entire process of vaccine production, storage and transportation, and procurement and distribution of vaccines. To help readers understand the current situation of vaccination in China, the workflow of grassroots vaccination staff is described through the story of a township health center doctor's work week. A later chapter describes China's largest measles supplementary immunization activity and its related social advocacy campaign.

One of the book's highlights is a chapter of memories of working in China by experts from WHO, GAVI, JICA, and other international organizations. We appreciate the great contributions made to China's EPI by our international friends.

We are pleased to share these experiences of Chinese immunization with peers around the world and to provide references and evidence for immunization program policy-makers for controlling vaccine preventable diseases and protecting more children! We hope that China's National Immunization Program is elevated to a level high enough to achieve universal access to immunization services, and we hope the future of prevention and control of infectious diseases becomes even more vibrant. We also hope that China's vaccines are introduced to Asia and to the world adding great new chapters for global immunization.

Beijing, China

Xiaofeng Liang

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## Contributors

**Zhijie An, MD** National Immunization Program, Chinese Center for Disease Control and Prevention, Beijing, China

**Enis Barış, MD, PhD** Europe and Central Asia, Health, Nutrition and Population Global Practice, World Bank, Washington, DC, USA

**Lahouari Belgharbi** Country Regulatory Support (CRS), Regulatory Systems Strengthening (RSS) Team, Regulation of Medicines and Other Health Technologies (RHT), Department of Essential Medicines and Health Products (EMP), World Health Organization, Geneva, Switzerland

Center of Excellence of Regulatory Sciences and Good Regulatory Practices, COFEPRIS, Minister of Health, Mexico City, Mexico

**K. Lisa Cairns, MD, MPH** World Health Organization China Office, Beijing, P.R. China

**Lei Cao, MPH** National Immunization Program, Chinese Center for Disease Control and Prevention, Beijing, China

**Lingsheng Cao, MPH** National Immunization Program, Chinese Center for Disease Control and Prevention, Beijing, China

**Yasuo Chiba, MD** MCH Programme, Sapporo, Japan

**Fuqiang Cui, PhD** National Immunization Program, Chinese Center for Disease Control and Prevention, Beijing, China

Peking University Health Science Center, Beijing, China

**Andrea Gay** Children's Health Program, United Nations Foundation, Washington, DC, USA

**Yonghong Ge, MBA** General Director Office, Chengdu Institute of Biological Products Co. Ltd., Chengdu, Sichuan, China

**Stephen Hadler, MD** World Health Organization China Office, Beijing, P.R. China  
Bacterial Diseases Division, U.S. Centers for Disease Control and Prevention, Atlanta, GA, USA

**Lixin Hao, PhD** National Immunization Program, Chinese Center for Disease Control and Prevention, Beijing, China

**Edward John Hoekstra, MD, MSc** World Health Organization, Beijing, P.R. China

**Yvan J. Hutin, MD** World Health Organization China Office, Beijing, P.R. China  
WHO Global Hepatitis Programme, Strategic Information, Geneva, Switzerland

**Ruiju Jiang, MD** Institute of Medical Biology, Chinese Academy of Medical Sciences, Beijing, Yunnan, China

**Lisa Ann Lee, VMD, MPH, MSc** Expanded Program on Immunization, World Health Organization Representative Office in China, Beijing, P.R. China

**Junhong Li, MD** National Immunization Program, Chinese Center for Disease Control and Prevention, Beijing, China

**Keli Li, MD** National Immunization Program, Chinese Center for Disease Control and Prevention, Beijing, China

**Yan Li, MD** National Immunization Program, Chinese Center for Disease Control and Prevention, Beijing, China

**Yixing Li, MD** National Immunization Program, Chinese Center for Disease Control and Prevention, Beijing, China

**Xiaofeng Liang, MD, MPH** Chinese Center for Disease Control and Prevention, Beijing, China

**Dawei Liu, MD** National Immunization Program, Chinese Center for Disease Control and Prevention, Beijing, China

**Lingjiu Liu, MD** Vaccine Division 2, Changchun Institute of Biological Products Co. Ltd., Jilin, China

**Peicheng Liu, BS, MA** Department of Marketing, Beijing Sinovac Biotech Co. Ltd., Beijing, China

**Yanmin Liu, MD** National Immunization Program, Chinese Center for Disease Control and Prevention, Beijing, China

**Chao Ma, PhD** National Immunization Program, Chinese Center for Disease Control and Prevention, Beijing, China

**Guijun Ning, PhD** National Immunization Program, Chinese Center for Disease Control and Prevention, Beijing, China

**Mac W. Otten Jr, MD** WHO China Country Office, Beijing, P.R. China

**Huirong Pan, PhD** Department of Vaccine Research & Development, Xiamen Innovax Biotech Co. Ltd., Xiamen, Fujian, China

**Lance Rodewald, MD** Expanded Program on Immunization, World Health Organization China Office, Beijing, P.R. China

**Paul Rota, PhD** Division of Viral Diseases, Centers for Disease Control and Prevention, Atlanta, GA, USA

**Alan Schnur, MPH** Expanded Program on Immunization, World Health Organization China Office, Beijing, P.R. China

**Craig N. Shapiro, MD** U.S. Centers for Disease Control and Prevention (CDC), Atlanta, GA, USA

National Immunization Program, China CDC, Beijing, P.R. China

**Yoshihiro Takashima, MD, MPH, PhD** Expanded Program on Immunization, Western Pacific Regional Office, World Health Organization, Manila, Philippines

**Huaqing Wang, PhD** National Immunization Program, Chinese Center for Disease Control and Prevention, Beijing, China

**Yamin Wang, MD** National Immunization Program, Chinese Center for Disease Control and Prevention, Beijing, China

**Ning Wen, MD** National Immunization Program, Chinese Center for Disease Control and Prevention, Beijing, China

**Jessie S. Wing, MD** National Immunization Program, U.S. Centers for Disease Control and Prevention, Seconded to WHO China Country Office, Beijing, P.R. China

**Dan Wu, MD** National Immunization Program, Chinese Center for Disease Control and Prevention, Beijing, China

**Wendi Wu, MD** National Immunization Program, Chinese Center for Disease Control and Prevention, Beijing, China

**Qiyao Xiao, MD** National Immunization Program, Chinese Center for Disease Control and Prevention, Beijing, China

**Disha Xu, MD** National Immunization Program, Chinese Center for Disease Control and Prevention, Beijing, China

**Jiakai Ye, MD** National Immunization Program, Chinese Center for Disease Control and Prevention, Beijing, China

**Zundong Yin, PhD** National Immunization Program, Chinese Center for Disease Control and Prevention, Beijing, China

**Hiroshi Yoshikura, MD** National Institute of Infectious Diseases, Toyama, Japan

**Wenzhou Yu, PhD** National Immunization Program, Chinese Center for Disease Control and Prevention, Beijing, China

**Chenyan Yue, MD** National Immunization Program, Chinese Center for Disease Control and Prevention, Beijing, China

**Bin Zhang, MPH** Zhangdian District Center for Disease Control and Prevention, Zhangdian, Shandong, China

**Guomin Zhang, PhD** National Immunization Program, Chinese Center for Disease Control and Prevention, Beijing, China

**Zhenlong Zhang, MD** Zhangdian District Center for Disease Control and Prevention, Zhangdian, Shandong, China

**Jingshan Zheng, MD** National Immunization Program, Chinese Center for Disease Control and Prevention, Beijing, China

**Yuqing Zhou, MPH** National Immunization Program, Chinese Center for Disease Control and Prevention, Beijing, China

**Zhigang Zuo, MB** Fujia Township Hospital, Zhangdian, Shandong, China

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## Acronym

AEFI	Adverse Event Following Immunization
AFP	Acute Flaccid Paralysis
ALT	Alanine Aminotransferase
BCG	Bacillus Calmette–Guérin
BMGF	Bill and Melinda Gates Foundation
CDC	Center for Disease Control and Prevention
CDE	Center for Drug Evaluation
CFDA	China Food and Drug Administration
CNBG	China National Biotec Group Company Limited
CoV	Clinic of Vaccination
DIP	Department of Immunization Programme
DTaP	Diphtheria, Tetanus, and Acellular Pertussis Vaccine
DTP	Diphtheria, Tetanus, and Pertussis Vaccine
EPI	Expanded Program on Immunization
EPS	Epidemic Prevention Station
EV71	Enterovirus Type 71
GMP	Good Manufacturing Practice
GPS	Global Positioning System
HAV	Hepatitis A Virus
HDC	Human Diploid Cell
HepA-I	Inactivated Hepatitis A Vaccine
HepA-L	Live Attenuated Hepatitis A Vaccine
HEV	Hepatitis E Virus
HFMD	Hand, Foot, and Mouth Disease
HSP	Henoch-Schönlein Purpura
IBPC	The Institute for Biological Product Control
IIMS	Immunization Information Management System
IPV	Inactivated Poliovirus Vaccine
JE	Japanese Encephalitis
JEV-L	Japanese Encephalitis Live-Attenuated Vaccine
JICA	Japan International Cooperation Agency
MCV	Measles-Containing Vaccine
MMR	Measles, Mumps, and Rubella Vaccine
MoH	Ministry of Health

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MPSV-AC	Group A and C Meningococcal Polysaccharide Vaccine
MR	Measles, Rubella Vaccine
NHFPC	The National Health and Family Planning Commission
NICBPB	National Institute for the Control of Pharmaceutical and Biological Products
NIFDC	National Institutes for Food and Drug Control
NIP	National Immunization Programme
NNDRS	National Notifiable Disease Reporting System
NRA	National Regulatory Authority
OPV	Oral Poliovirus Vaccine
PATH	The Program on Appropriate Technology in Health (American)
PoV	Point of Vaccination
QA	Quality Assurance
QMS	Quality Management System
SAGE	Strategic Advisory Group of Experts on Immunization
SIA	Supplementary Immunization Activity
SPF	Specific Pathogen Free
STDs	Sexually Transmitted Diseases
UNICEF	United Nations International Children's Emergency Fund
VAPP	Vaccine-Associated Paralytic Poliomyelitis
VDPV	Vaccine-Derived Poliovirus
VPD	Vaccine Preventable Disease
VVM	Vaccine Vial Monitor
WHD	World Hepatitis Day
WHO	World Health Organization