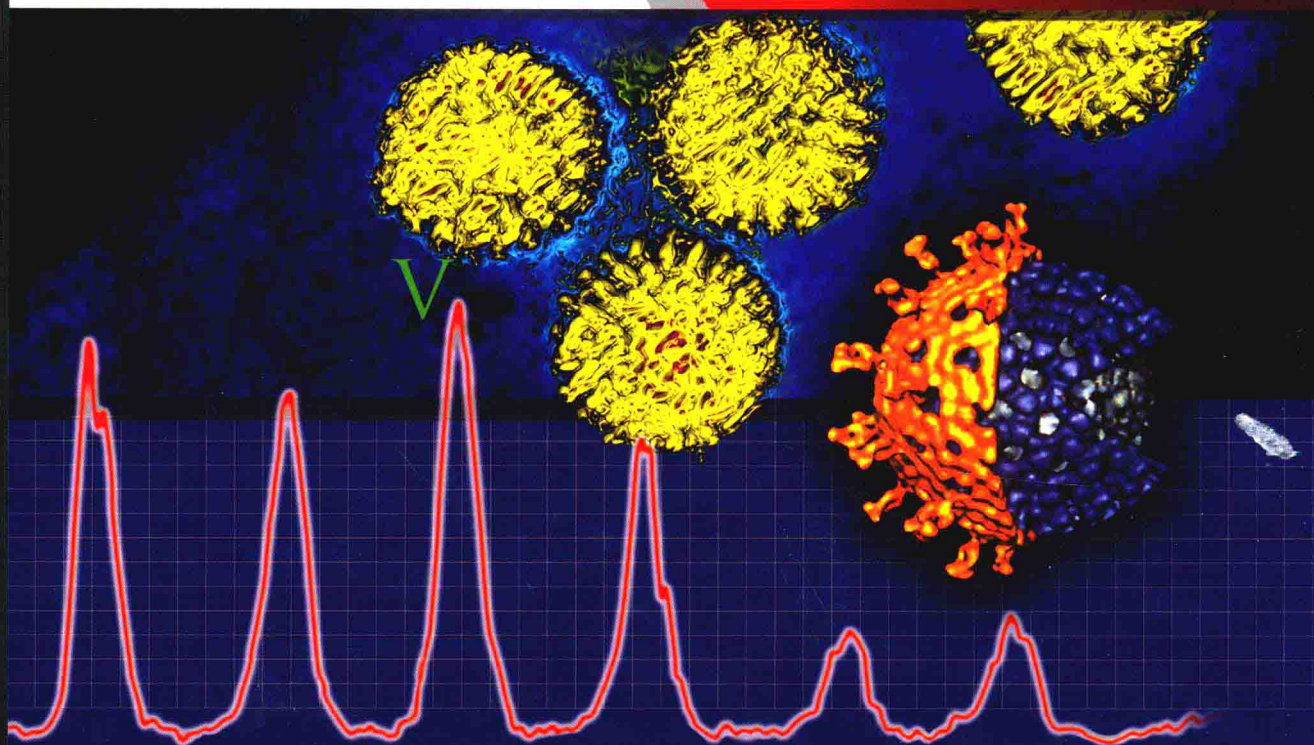


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第

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SIXTH EDITION

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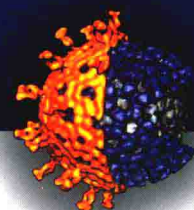
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第 6 版

(上 册)

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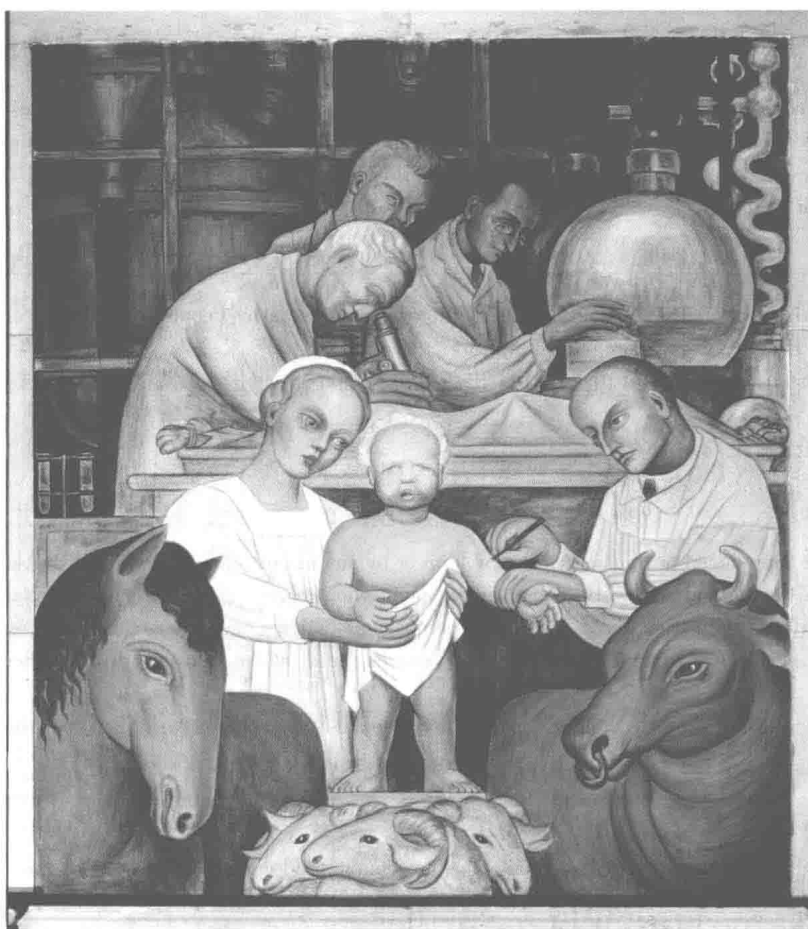
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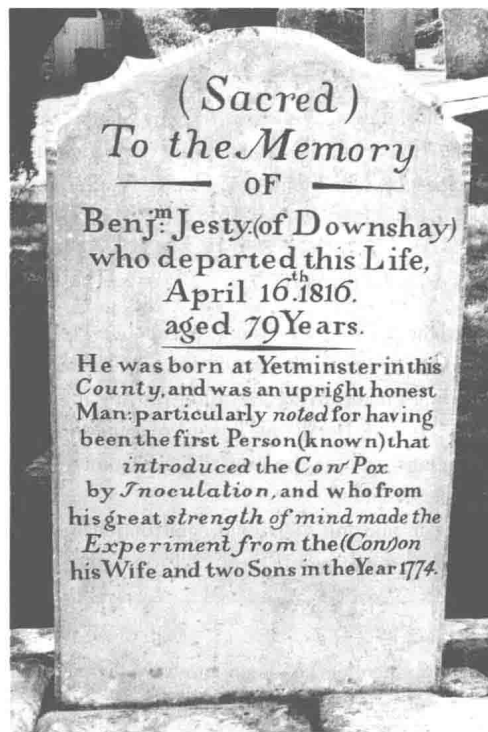
在英格兰伯克利 Edward Jenner 家附近的“疫苗接种小屋”，他在这里为数以千计的农村穷人接种天花疫苗 (Stanley A. Plotkin 摄)



1720 年普罗旺斯修建了一条 20 公里的长墙，预防从马赛躲避鼠疫疫情的人群带来疾病的传播。图片为其中的一个警卫室 (Stanley A. Plotkin 摄)



底特律工业，北墙，1933 年由 Diego Rivera (1886—1957 年) 创作 (壁画)。感谢底特律艺术学院及美国布里奇曼艺术图书馆



Benjamin Jesty 位于东多塞特的墓碑。Jesty 在 1774 年成功为自己的妻子和两个儿子接种牛痘疫苗预防天花，比 Jenner 的第 1 例天花疫苗早 22 年。来自: Benjamin Jesty: Dorset's Vaccination Pioneer by Patrick J Pead, Timefile Books, 2009.

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译者前言

Vaccines 是美国前国家疾病预防控制中心主任 Stanley A. Plotkin 组织国际疫苗界和传染病领域的专家们共同编撰的一部专业巨著。该书于 1988 年问世,每隔 3~5 年进行一次修订,至今已是第 6 次修订出版。我国于 2011 年 10 月首次将该书第 5 版翻译成中文,并由人民卫生出版社出版。

Vaccines 第 6 版汲取了疫苗领域的最新研究成果,并增加了 4 个章节,全书共有 76 章,包括了当前疫苗相关疾病的世界流行状况、临床诊断、病原微生物的研究进展、新疫苗的研发生产、疫苗检定等内容,对于我国的疫苗学界和疾病预防控制领域来说,不失为一部很好的工具书。

为保证中文 Vaccines 第 6 版的质量,我们聘请了中国食品药品监督管理局、中国食品药品检定研究院、中国疾病预防控制中心、中国生物制品集团、北京市疾病预防控制中心和北京市朝阳区疾病预防控制中心等单位的近百位专家参加了本书的编译。在审校过程中得到了章健康、张孔来、乌正赉、楚金贵、梁晓峰、舒俭德、张苇、赵雷等老师的大力支持,特别是赵铠院士、李凤祥研究员、陈贤义研究员等我国疫苗界老一辈专家为本书的编译做出了重要贡献,在此表达真诚谢意。

限于时间紧迫,本书编译过程中难免有所疏漏,不足之处还望同仁批评指正。

罗凤基
2017 年 3 月

我出生于1955年。那一年,Salk 脊髓灰质炎疫苗得到广泛的使用。如果你和任何足够年长的人交谈,他们都会记得脊髓灰质炎带来的痛苦以及由此引发的恐惧。这时,你会开始认识到这种疫苗是多么具有突破性的药物,也会体会到它是如何让成千上万人的生活变得更加美好。

这一事件改变了世界。在我的成长环境中,人们认为这些预防脊髓灰质炎、白喉、百日咳和其他传染性疾病的疫苗是理所当然的。但是,如果你去印度的比哈尔邦,仍然会从当地父母的眼中看到同样的恐惧,因为他们担心子女会患上脊髓灰质炎。Salk 疫苗已经问世逾半个世纪,而脊髓灰质炎却依然存在并在3个国家肆虐横行,为何会这样?

部分原因要归咎于病原体生物学。但重要的是,政治意愿的缺乏以及医疗体系的失效使得人们无法向处于风险之中的儿童提供脊髓灰质炎疫苗,以预防这种严重的疾病,我们因此也无法在将病例减少99%的现状上更进一步,实现我们真正的目标——100%彻底消除这种疾病。对于实现这一目标,我持乐观态度,但这只有当我们将医药、物流、教育和社区拓展中最佳的一面结合起来时才能达成。这个领域的成功会成为人类文明中的一块里程碑。这虽然困难重重,但尚在我们的掌控之中。

同样,人们对肺炎链球菌的研究也已经持续了一个多世纪。然而,颇具侵袭性的肺炎链球菌疾病每年仍会夺走80多万儿童的生命。目前,可以用来减轻疾病负担的最有效策略就是预防接种疫苗。

当然,我们也取得了巨大的进展。20世纪60年代,麻疹疫苗获批上市,但是很多地方对它的接受过程却极为缓慢。即使它已经问世30年,每年仍有75万名儿童因麻疹而死亡。然而,从2000年开始,麻疹疫苗的覆盖率得到大幅提升,因麻疹而造成的死亡率也下降了约80%。这意味着,由于全球几乎每个地方都在定期提供麻疹疫苗,每天都有超过1500名儿童因此而免于死亡。

一个简单的真相就是疫苗能够挽救生命。

它们有着极高的安全性和性价比,依然是我们在全球健康方面最佳的单一工具。它们能保护发展中国家被肆虐的疾病侵袭的人类潜能。因此,疫苗是我们在推广全球健康,乃至全球发展中所掌握的最佳方法。

如果疫苗是极为重要的工具,那么第6版《疫苗》就是在尽可能将预防拓展到全球受众过程中的一种极为重要的资源。我有幸受邀为最新版作序。

同时,我也很荣幸能够与将要阅读这一专著的科学家、研究者、医疗和公共卫生专业人士交流。你们的工作至关重要。有关疫苗的不负责任的言论和毫无根据的谣传有时同样会让人们关注事实,这时,就需要了解信息的倡导者来倡导在全球范围内全面接种疫苗的权利和必要性,这十分重要。

2012年年中,当我在撰写本文时,疫苗领域正经历着激动人心的时刻。

那年,我们见证了一个大事件。即使面临着一场全球金融危机,捐赠者们仍然向全球疫苗和免疫联盟(GAVI)捐赠了超过40亿美元。参与此次捐赠的政府、基金会和私人机构纷纷慷慨解囊,这会极大提升贫穷国家为当地儿童接种疫苗的能力,从而挽救超过400万的生命。这十分鼓舞人心。

在研究前沿方面,我们首次从长达数十年的艾滋病疫苗研究中看到了颇具前景的迹象。同样,我们也在一种防治疟疾的重要疫苗上看到了进展。世界上最贫困的地区对这种疫苗的需求极为迫切。疟疾所致的寿命损失、疾病流行、行为能力下降和生产力降低等一系列毁灭性成本是无法估量的。

去年,一些贫穷国家引入了预防肺炎链球菌和轮状病毒的新疫苗。富裕国家和贫穷国家引入疫苗的时间间隔已经从令人汗颜的十多年缩短到几年,这一点意义重大。

全球还见证了首个专为发展中国家研发的疫苗——A群脑膜炎球菌多糖结合疫苗。它能为生活在非洲脑膜炎流行地带的数百万居民终结这种令人恐惧的威胁。

临床试验中的十多种候选疫苗,以及针对提升肺结核疫苗范围和效力的种种研究,都展现出令人满意

的结果。

但是,还有很多工作要做。我们需要新的疫苗。为疟疾和 HIV 开发有效疫苗的工作必须进行到底。

我们需要更好的疫苗。目前已经获批的针对肺结核的卡介苗已经在过去 90 年中被接种了 40 亿次。它十分安全,能够保护婴儿,使其免受严重疾病的侵袭。然而,它的效力十分有限,而且无法防治成年人的肺结核。对于生活在极度贫困地区的儿童来说,其他疫苗,像口服脊髓灰质炎疫苗、轮状病毒疫苗和其他口服疫苗,它们的效力常常不足。

我们要更好地理解与保护作用相关的免疫标记物的机制,这有助于更快地发现和引入经过改良的疫苗。

我们需要确保能够更快速地引入疫苗并采用已经获批的疫苗。现在仍然有大量的儿童病患是我们无法触及的,尽管我们拥有能够防治疾病的药物,但他们中依然有很多人会因病丧生。

我们需要更多能够负担得起的疫苗,尤其是在发展中国家。像肺炎球菌结合疫苗和人乳头瘤病毒(HPV)疫苗这些强效疫苗,制造成本高昂,难以被纳入疾病负担最高的发展中国家的免疫规划。

在偏远、贫穷的环境中运送疫苗,人们为了维持冷链而付出了超人般的努力。目睹这一切让我相信,尽管我们能够,也应该在短期内改善运送机械,如果我们要将发达国家人们视作理所当然的疫苗提供给贫困地区,那么提升疫苗的热稳定性仍然是头等大事。

疫苗为世界带来的益处无可辩驳,因而我对疫苗充满了热情。疫苗是科学的奇迹,所以用现有的所有工具继续开发、改进和应用疫苗是重中之重。疫苗能够挽救生命,所以竭尽所能在全球扩大疫苗的使用是最基本的人道。因此,疫苗一直是改善全人类福祉不可或缺的手段。

在这一点上,《疫苗》仍然是一个不可或缺的指南,它让我们的世界变得更加幸福。

Bill Gates

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第1版前言

首次感染通常可以增强宿主抵抗力,并且为将来提供有效的防护,因此只要不产生过于严重的损害,给宿主一定的感染被认为是值得的。主动免疫或接种疫苗的目的就是人为使宿主达到类似于自然感染某特定疾病并治愈后的状态。

*Jules Bordet, Traite de l'Immunité dans les
Maladies Infectieuses, 1920*

一百多年前,最早的疫苗是在实验室特别研制出来的。在那个时期,疫苗接种的成功无异于非凡的成就。但是在人类的几次主要灾难中,疟疾和蠕虫病仍无有效的疫苗,并且现在又加上了人类免疫缺陷病毒的感染。目前仍有很多地方性疾病(主要是呼吸道传染病)急需疫苗,这也正是数百家实验室致力于免疫预防研究的动力。

实际上,从巴斯德时代开始,医学界乃至整个世界已经认识到接种疫苗是预防感染性疾病的理想措施。

但很奇怪,尽管大家都认识到了这一点,却很少有关于疫苗实际应用的专著,它不同于疫苗的基础免疫学,也不同于疫苗的开发过程类书籍。而且我们还发现,医生和医学生对疫苗的了解远不如对抗生素和其他治疗性药物了解得多,尽管疫苗对于他们的病人的影响可能越来越大。虽然疫苗的有效性已被证实,但只有在美国和其他发达国家才有良好疫苗接种的人群。这些国家的成功可归功于教育以及由此产生的儿科医生的带动。而在儿科以外的医学领域仍很少应用或考虑应用疫苗。

另外,疫苗还一直遭受抨击,如自由主义者宣称生病是人类的权利,宗教狂热者认为上帝的旨意包含疾病和死亡,法律系统则利用多数人不了解风险/利益比或公共卫生问题,而健忘也使得人们容易忘记疫苗接种前的疾病状态。

在这些问题中还需要加一点,那就是医生和患者都对治疗更加感兴趣。人们更多关注于心脏移植、连体婴儿分割、重症监护的技术发展,为什么呢?因为这些是更具有戏剧性的感受。迄今为止,没有一名医生在他(或她)的职业生涯中保存哪怕一丁点儿的由疫苗拯救生命的片段。

因此,我们决定给使用疫苗的医生编写一本关于疫苗及其应用的教材,着重在美国已批准上市的产品,同时也包含了一些在研疫苗的章节。在一些案例中,如果我们认为某些主题非常重要,即使疫苗处于早期阶段,我们也在书中纳入其内容。我们希望本书可以供所有对疫苗预防疾病感兴趣的人们参考。

古希腊有两个健康之神,医神和卫生之神,分别负责治疗和预防。20世纪的医学仍是这两个概念,而疫苗是最有效的预防手段。疫苗和卫生设施共同造就了现代社会,如果明智地应用,仍可继续赠予人类预防的礼物,这比治疗更加宝贵。

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