



Pneumococcal Awareness
Council of Experts

A project of the Sabin Vaccine Institute

Strategies for the Prevention & Control of Pneumonia

预防和控制肺炎策略

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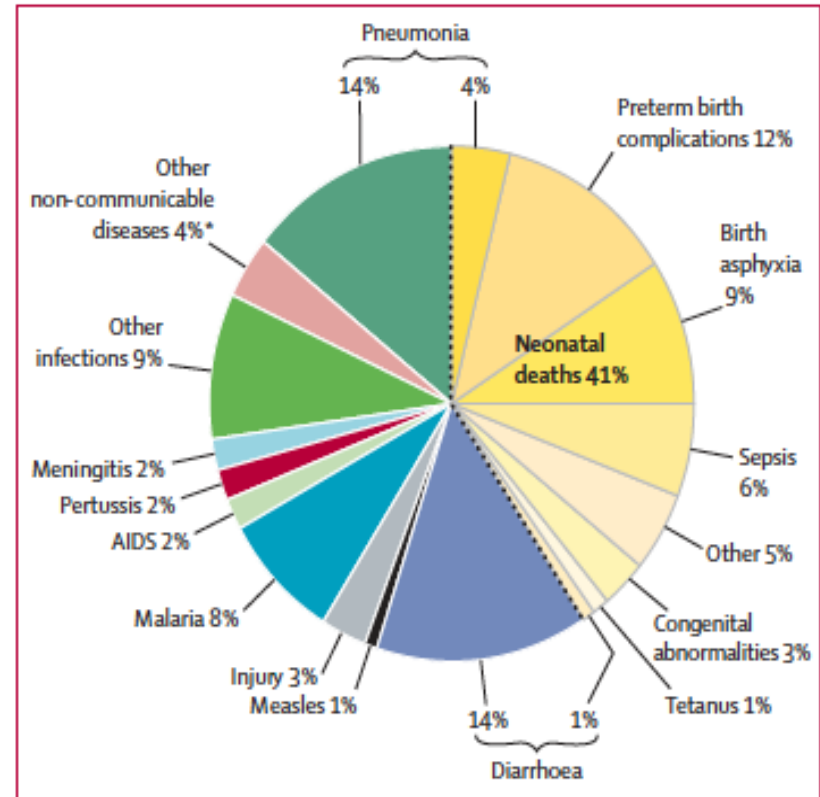
Global Child Mortality in 2008

2008年全球儿童死亡率

- **8.8 million children under 5 died**
880万5岁以下儿童死亡
- **Pneumonia (18%) and diarrhea (15%) are the leading killers of children**
肺炎(18%)和腹泻(15%)是儿童主要致死疾病

According to World Health Organization's **CHERG**

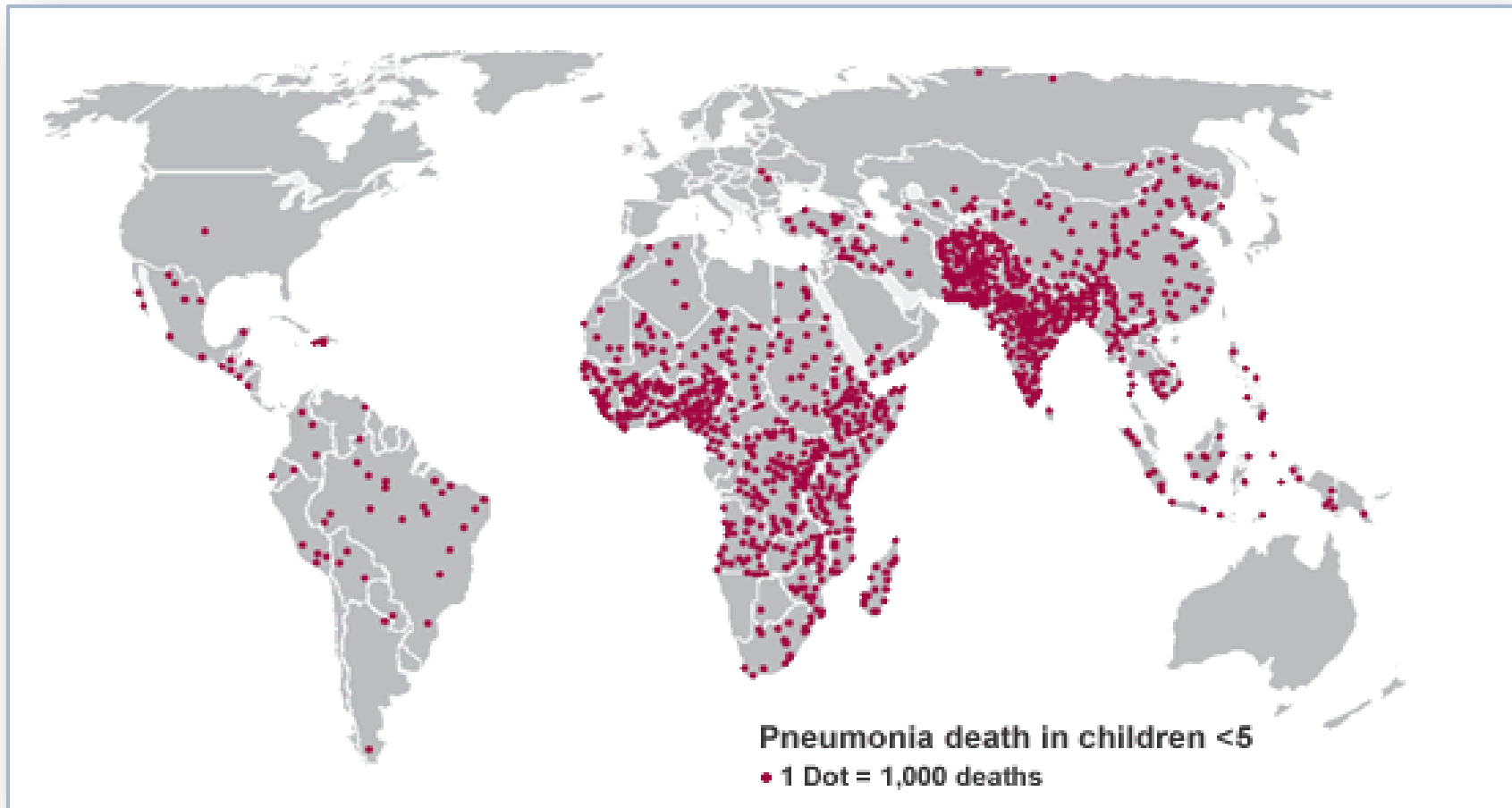
资料来源：WHO **CHERG**



Black RE, et al. *Lancet*. 2010. Jun 5;375(9730):1969-87

More than 1/3 of the 1.5M Annual Child Deaths Caused by Pneumonia Are in Asia

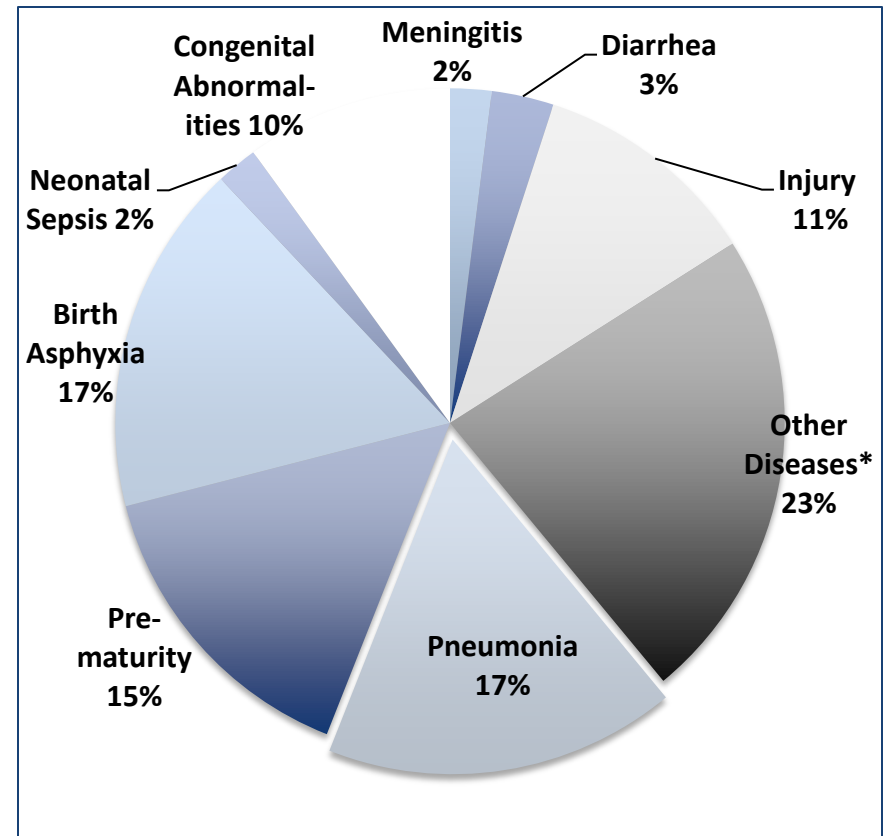
每年因肺炎死亡的150万儿童，1/3以上发生在亚洲



Pneumonia in China in 2008

2008年中国的肺炎状况

- Pneumonia is the **most deadly infectious illness** in China
肺炎在中国是最致命的感染性疾病
- Responsible for about **17% of child deaths**
约17%的儿童死亡与之相关
- Caused an estimated **62,000 child deaths** in 1 year alone
单单一年就导致约62000例儿童死亡

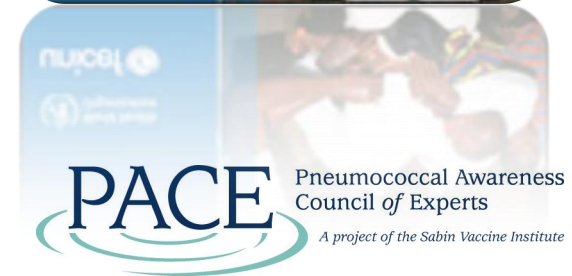
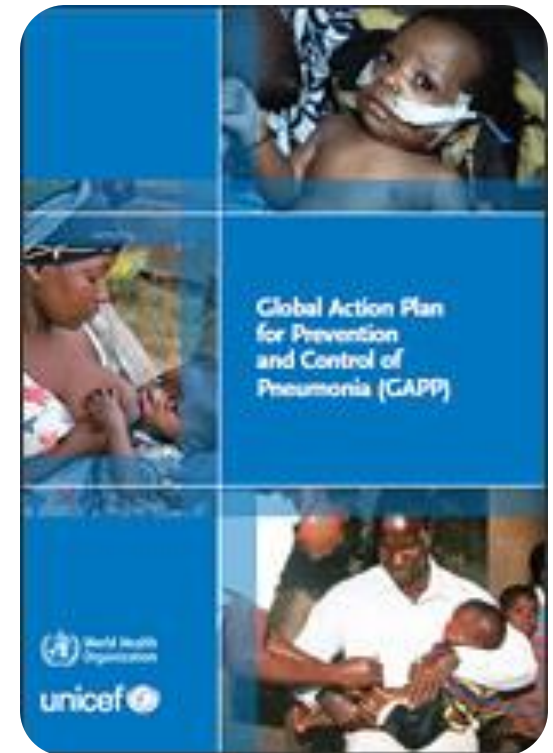


Black, et al. *Lancet*. 2010.

Global Action Plan for the Prevention & Control of Pneumonia (GAPP)

全球肺炎预防和控制行动计划 (GAPP)

- Accelerate pneumonia control: **scale up the delivery of proven interventions** in newborn and child survival strategies
加快肺炎控制：在新生儿和儿童存活策略中增加有效干预方法的实施
- **Identify** and implement a **set of priority activities** within each area of work in reducing pneumonia mortality
在减少肺炎死亡率的各个环节中**确定和执行一套优选的活动方案**
- Develop an approach towards **monitoring, documenting** and **evaluating** the impact of the action plan
推进**监测、记录和评估**活动方案的影响机制



Pneumonia Deaths Can Be Prevented

肺炎死亡是可预防的

- **Young children are most vulnerable, especially infants**
年幼儿童最易罹患，尤其是婴儿
 - Risk factors include malnutrition, low birth weight, HIV/AIDS and non-exclusive breastfeeding
 - 危险因素包括营养不良、低出生体重、HIV/AIDS和非母乳喂养
- **According to WHO/UNICEF, more than 2/3 of global child pneumonia deaths could be prevented by scaling key interventions**
根据WHO/UNICEF，通过推进有效干预可预防超过2/3的全球儿童肺炎死亡
- **The 3-pronged approach:三管齐下的干预措施**
 1. **Protect** with exclusive breastfeeding 母乳喂养的**保护**
 2. **Prevent** with pneumonia vaccines 应用肺炎疫苗**预防**
 3. **Treat** with antibiotics 抗生素**治疗**

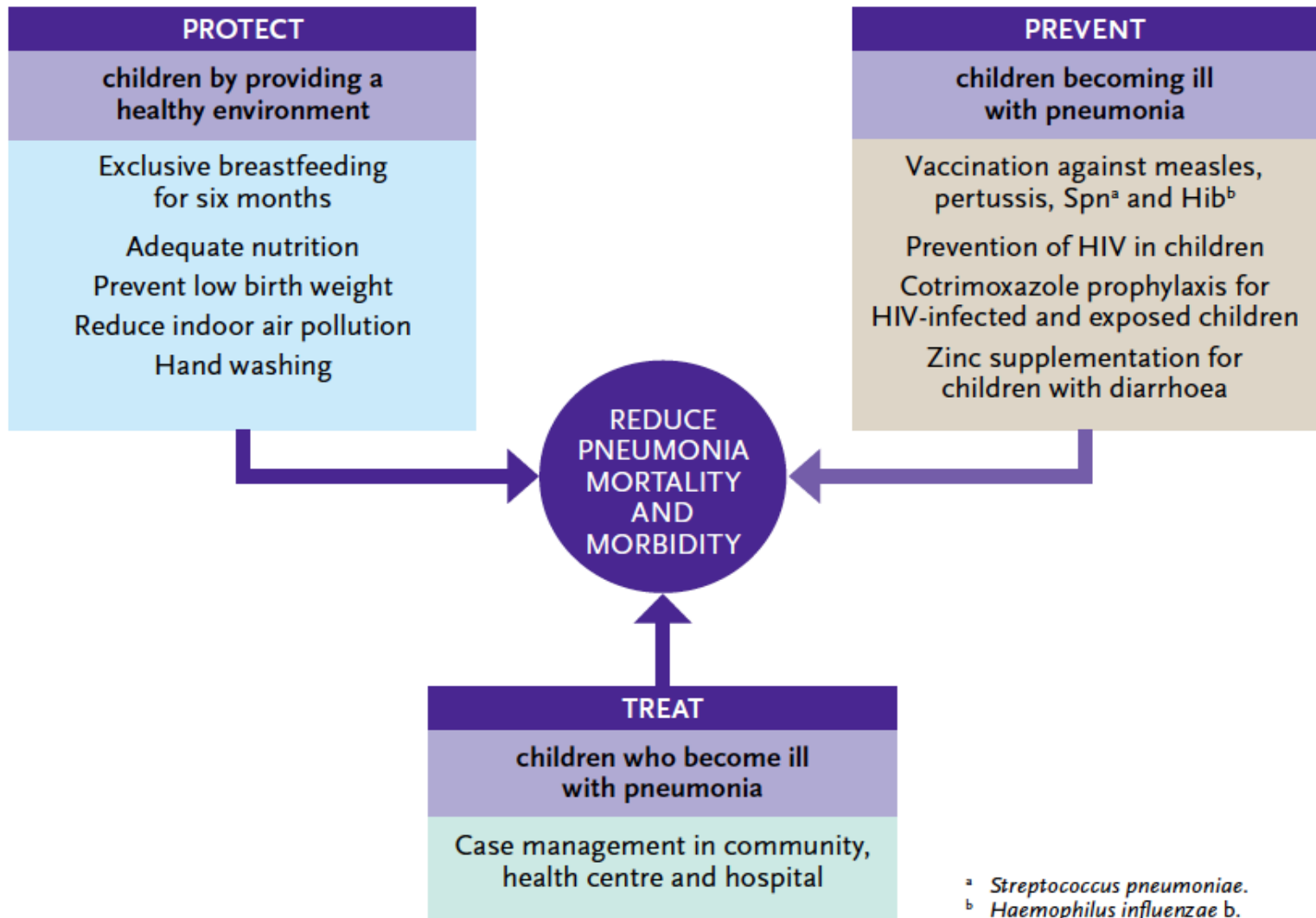
Cost to Implement the GAPP

执行GAPP的费用



- The cost of implementing the GAPP interventions to protect (breastfeeding), prevent (vaccinations) and treat (case management) in the 68 high child mortality 'countdown to 2015' countries will be US\$ 39 billion for the 2010-2015 period 在68个儿童死亡高发的“2015倒计时”国家中执行GAPP干预，包括保护（母乳喂养）、预防（疫苗）和治疗（个案管理）的费用将达390亿美元（2010-2015年）

- **Fully one-half of the costs are needed for scaling up these interventions in China (US\$ 13 billion)** 全部费用的一半需要花在中国（130亿美元）以促进干预的实施



With accelerated use of key interventions, 67% of child pneumonia deaths will be averted by 2015

随着加快主要干预措施的应用，至2015年将避免67%的儿童肺炎死亡

Protection 保护

- **Exclusive breastfeeding:** no formula, food or water for first 6 months of life
母乳喂养： 出生后6个月不使用配方奶粉、其他食物或水
- Ensure adequate **nutrition**
确保合适营养
- Prevent **low-birth weight**
预防低出生体重
- Reduce **indoor air pollution**
减少室内空气污染
- Increase **handwashing**
增加洗手



Treatment: Strategies for Preventing Pneumonia Deaths

治疗：预防肺炎死亡的策略

- Access to care is **limited** in many countries:

在许多国家获得健康护理**受限**

- Only 1 in 5 caregivers know pneumonia signs
5位健康护理者中仅一位了解肺炎征象
- Only 54% of children with pneumonia are taken to provider who can appropriately treat them
仅54%的儿童肺炎患者转诊至专业人员
- Only 19% of children with pneumonia receive an antibiotic
仅19%的儿童肺炎患者接受抗生素

- Community health workers can **improve** access:

社区健康工作者可以**改善**获得途径

- Community case management reduces pneumonia deaths by 36% –42%, meta-analysis suggests
荟萃分析提示社区患者管理减少肺炎死亡达36%-42%

2 Vaccine-Preventable forms of Pneumonia Account for 50% of Deaths

2种疫苗可预防的肺炎致死占50%

- *Streptococcus pneumoniae* (pneumococcus)

肺炎链球菌

- Caused about 520,000 deaths in children under 5 worldwide in 2008

2008年全球5岁以下儿童致死病例约520,000

- *Haemophilus influenzae* type b (Hib)

B型流感嗜血杆菌

- Caused about 260,000 deaths in children under 5 worldwide in 2008

2008年全球5岁以下儿童致死病例260,000

Prevention: Immunization

预防: 接种免疫

- **Hib conjugate vaccine Hib高价疫苗**

- Recommended by WHO in 2006 (2006年WHO推荐)
- Several formulations including 5-antigen combination vaccines (Hib, DTP, Hepatitis B)

多个配方, 包括5种抗原的复合疫苗(b型流感嗜血杆菌疫苗, 白百破, 乙肝)

- **Pneumococcal conjugate vaccine (PCV) 肺炎链球菌共价疫苗**

- Recommended by WHO in 2007 (2007年WHO推荐)
- 7-, 10- and 13-valent formulations licensed, supply increasing
7价、10价和13价疫苗已经注册, 供应量增加

- **PCV13 expected to cover ~75% of invasive serotypes in Asia**

PCV 13预计可覆盖亚洲地区~75%的侵入性血清型

- **Prevention is critical in low resource settings, countries should plan now for PCV introduction 在资源有限的条件下预防至关重要, 国家应该现在就引入PCV计划免疫**

- Increase cold chain capacity 增加冷链储存能力
- Secure donor funding 确保捐赠者基金
- Develop introduction plans 发展引入计划

Vaccines for Pneumonia: Current Status

肺炎免疫：现状

Successes 成功

- **Hib vaccine:** widespread introduction 全球引入Hib疫苗
- **PCV:** Rolling out now in many developing countries with funding assistance from the AMC 已经通过AMC的基金辅助在诸多发展中国家逐步开展PCV

Challenges 挑战

- Limitations in GAVI Alliance funding GAVI同盟基金的有限性
- Systemic immunization program weaknesses 系统计划免疫的弱点
- Lack of surveillance capacity to support vaccine introduction and sustain use 支持疫苗引进和持续使用的监测能力的缺乏
- Large-country introductions 大国的引入



GAVI同盟基金的有限性

Global Initiatives Accelerating Vaccine

Introduction

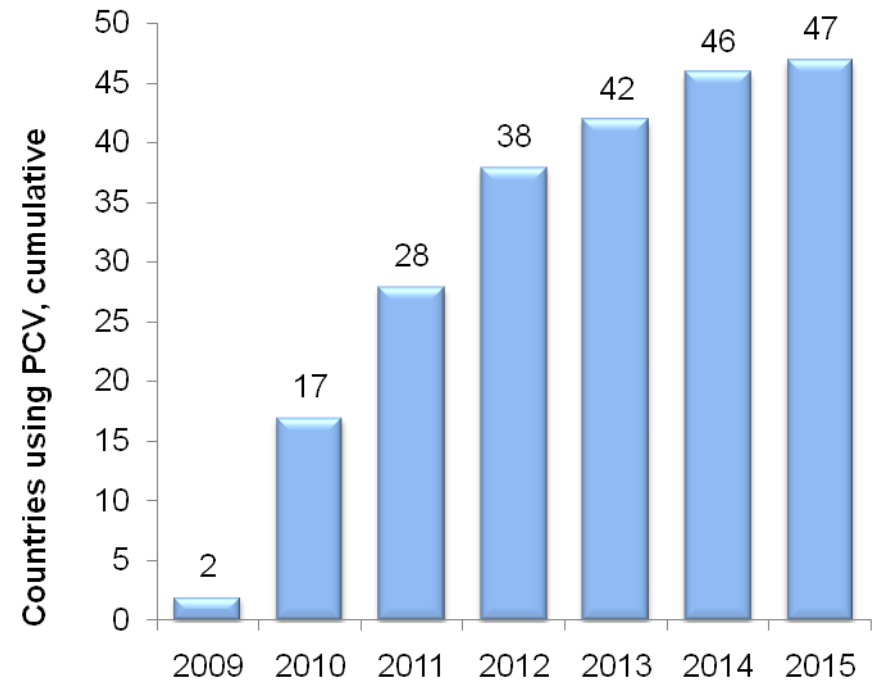
全球倡议：加快疫苗引进

- **Hib Initiative:** nearly finished, 61/72 GAVI countries using Hib vaccines **Hib倡议：**接近完成，72个GAVI中61个国家使用Hib疫苗

- **GAVI:** funding for lowest income countries, 1/4 are in Asia; 19 countries are slated for PCV introduction with GAVI support in 2011-2012 **GAVI：**向最低收入国家（1/4在亚洲地区）提供资金；2011-2012年19国列入GAVI支持疫苗引入名单

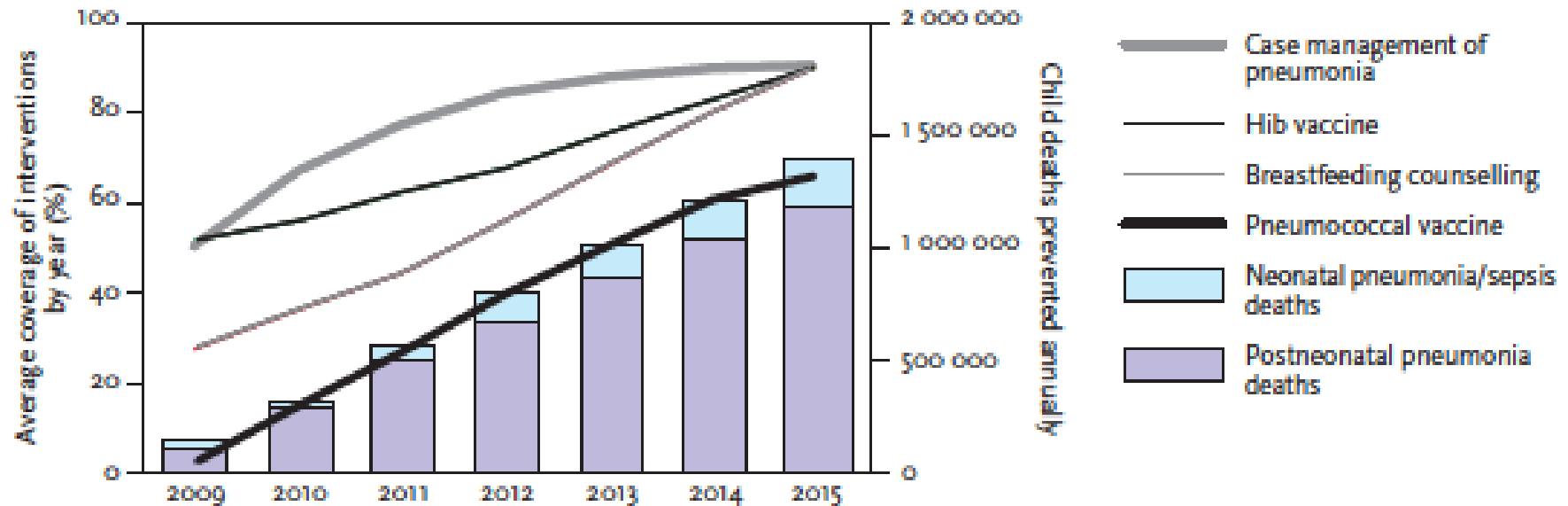
- **Accelerated Vaccine Introduction (AVI):** focuses on PCV and rotavirus vaccines, includes WHO, UNICEF, technical experts (JHU, PATH, CDC) **加速疫苗引入(AVI)：**重点是PCV和轮状病毒疫苗，包括WHO、UNICEF和技术专家

AVI Strategic Demand Forecast: PCV in 47 countries by 2015 AVI策略需求预测：2015年47国的PCV



Impact of Proven Interventions – If Scale Up Is Accomplished

可靠干预的影响---如果增量完成



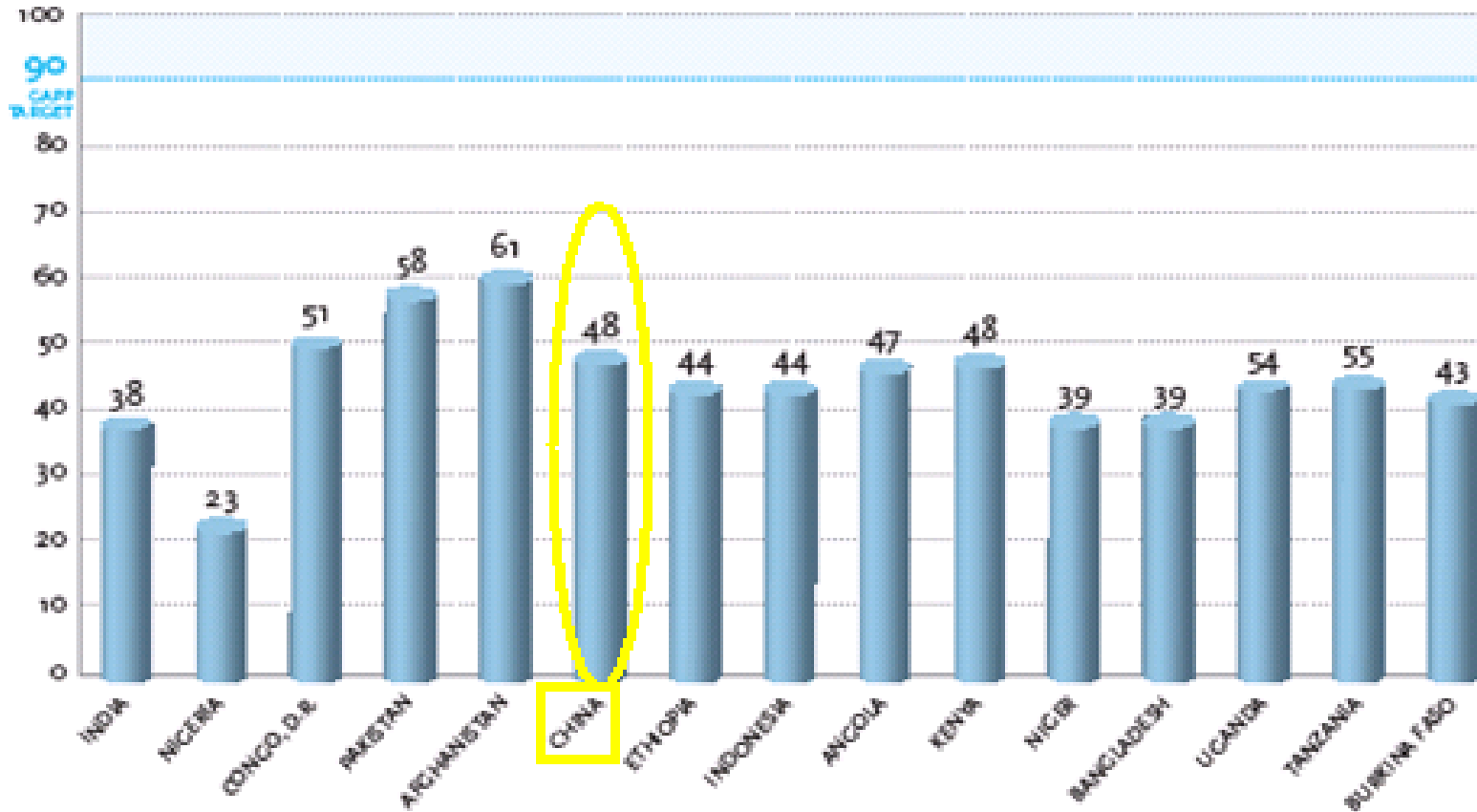
Source: WHO

- The impact of scaling up essential interventions for pneumonia was calculated using the Lives Saved Tool (LiST) – a tool that has been developed by the Futures Institute in collaboration with the Child Health Epidemiology Reference Group (CHERG). Deaths averted is estimated as the difference between a scenario where coverage is scaled up to on average 90% in the 68 countries, compared to a scenario where coverage remains at constant levels.
- UNICEF. *Countdown to 2015. Tracking progress in maternal, neonatal and child survival: the 2008 report*. New York, UNICEF, 2008.

The Pneumonia Report Card

肺炎报告卡

TOTAL SCORE
PROGRESS OF COUNTRIES WITH MOST PNEUMONIA DEATHS ON EFFORTS
TO PREVENT, TREAT AND PROTECT AGAINST PNEUMONIA



Progress is Being Made, But China Currently Falls Short of GAPP Targets

中国虽然取得进步，但是目前尚落后于GAPP目标

- **China is included among the 15 countries that represent 3/4 of all global pneumonia deaths**
中国位列代表全球3/4肺炎死亡的15国之一
- **Pneumonia intervention coverage in China is 48%**
中国肺炎干预覆盖48%
- **Progress is being made toward achieving the 90% GAPP target**
正在朝达到GAPP目标90%的方向努力
 - Measles and pertussis vaccine coverage were more than 90%
麻疹和百日咳覆盖超过90%
- **But there is room for improvement**
仍有改善空间
 - Only 28% of infants less than 6 months are exclusively breastfed in China
仅28%<6个月的婴儿只接受母乳喂养
 - Hib & pneumococcal vaccines not yet routine
Hib和肺炎链球菌疫苗尚未列入常规
 - Indoor air pollution reduction also important
in some rural areas部分乡村地区减少室内空气污染依旧重要

Calling for Action

让我们行动起来

- **World Health Assembly resolution, May 2010**

- **2010年5月世界卫生组织大会决议**

- Calls for all countries to implement interventions recommended in the Global Action Plan for the Prevention and Control of Pneumonia

号召所有国家执行由全球预防和控制肺炎行动计划推荐的干预措施

- Directs WHO to strengthen human resources, convene stakeholders to mobilize resources for vaccination and track progress

指导WHO加强人力资源，召集利益相关者以动员资源用以接种免疫和追踪进展



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