Vaccines: The Week in Review
4 July 2011
Center for Vaccine Ethics & Policy (CVEP)
http://centerforvaccineethicsandpolicy.wordpress.com/
A program of
- Center for Bioethics, University of Pennsylvania
http://www.bioethics.upenn.edu/
- The Wistar Institute Vaccine Center
http://www.wistar.org/vaccinecenter/default.html
- Children's Hospital of Philadelphia, Vaccine Education Center
http://www.chop.edu/consumer/jsp/microsite/microsite.jsp

This weekly summary targets news and events in global vaccines ethics and policy gathered from key governmental, NGO and industry sources, key journals and other sources. This summary supports ongoing initiatives of the Center for Vaccine Ethics & Policy, and is not intended to be exhaustive in its coverage. Vaccines: The Week in Review is now also posted in pdf form and as a set of blog posts at http://centerforvaccineethicsandpolicy.wordpress.com/. This blog allows full-texting searching of some 1,600 items.

Comments and suggestions should be directed to
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The Biotechnology Industry Organization (BIO) announced that it honored Paul A. Offit, MD, with the 2011 Biotech Humanitarian Award. Dr. Offit is Chief of the Division of Infectious Diseases and the Director of the Vaccine Education Center at The Children's Hospital of Philadelphia. Jim Greenwood, president and CEO of BIO, said, "BIO is honored to present Paul Offit with the 2011 Biotech Humanitarian Award. His personal endeavors in developing one of only two rotavirus vaccines available today, his dedication to bringing awareness to the benefits of vaccinating children and his work at The Children's Hospital of Philadelphia, can be credited with saving countless lives every day. Through his innovative science, exceptional work as an advocate and ability to communicate complicated concepts in a direct and easy-to-understand manner, Dr. Offit epitomizes what we look for in a biotech humanitarian."
http://www.businesswire.com/news/home/20110629005991/en/Dr.-Paul-Offit-Receives-2011-Biotech-Humanitarian
Download the podcast http://www.bio.org/podcasts/20110630_offit.mp3

GAVI announced that the governments of Central African Republic, Benin and Cameroon will introduce GAVI-funded pneumococcal vaccines in the coming weeks. In the past seven months, Nicaragua, Guyana, Yemen, Kenya, Sierra Leone, Mali, DR Congo and Honduras have introduced the pneumococcal vaccines. http://www.gavialliance.org/media_centre/press_releases/pneumococcal_rollouts.php

The Global Fund announced that Lutheran World Relief and The Lutheran Church—Missouri Synod forged "a unique partnership to mobilize Lutherans in the United States in the fight against malaria in Africa." The new Lutheran Malaria Initiative "aims to raise a total of US$45 million towards the global goal of eliminating malaria deaths in Africa by 2015, with up to US$12 million of the amounts raised through the campaign to flow through the Global Fund to support malaria programs in Africa. Professor Michel Kazatchkine, Executive Director of the Global Fund, commented, "Faith-based organizations are already critical providers of rural health care in many parts of the developing world. We are pleased to partner with the Lutheran Malaria Initiative and are looking forward to jointly continue the fight against malaria." The Global Fund noted that the Lutheran initiative comes in addition to the United Methodist Church pledge of US$28 million to the Global Fund last September 2010, with both partnerships initiated with the support of the United Nations Foundation. http://www.theglobalfund.org/en/mediacenter/pressreleases/2011-06-30_Lutheran_World_Relief_and_Lutheran_Church_Announce_US$45_Million_to_Fight_Malaria_in_Africa/

WHO GLOBAL MEETING ON IMPLEMENTING NEW AND UNDER-UTILIZED VACCINES

[30/06/2011 from Hemanthi Dassanayake-Nicolas, WHO HQ; GIN, June 2011]
The fifth WHO Global Meeting on Implementing New and Under-utilized Vaccines was organized by WHO/HQ and held in Montreux, Switzerland from 22-24 June 2011 with over 125 participants including representatives from Ministries of Health from 18 countries, WHO, UNICEF (HQ, Regional and Country offices), partner agencies including AMP, The Bill and Melinda Gates Foundation, CDC, Clinton Health Access Initiative, GAVI Secretariat, JSI (MCHIP), NORAD, PATH, Sabin Institute, SIVAC, and USAID, as well as participants from universities, NGOs, manufacturers, and independent consultants. The overall theme of the NUVI meeting was "Sustaining the gains of new vaccine introduction" with the objectives to review and discuss key issues in new and under-utilized vaccine introduction among immunization partners, regions and countries. The meeting had plenary sessions to discuss the progress with the Global NUVI Plan of Action, updates from GAVI on NUVI Financing, and lessons learned from new vaccines introduction to date The meeting also hosted six workshops on the following areas: Prioritization of vaccines at the country level; Communication for NUVI; Vaccine Supply & Pricing; Delivery Strategies for Typhoid, JE, Rubella and HPV vaccines; Immunization Schedules; and Human Resources for Immunization. The main priorities to be undertaken by the different partner institutions in the coming year were identified, the

main ones being to continue to support fully informed decision making on the introduction of new vaccines, and the theme conclusion being to further work towards government ownership of the national immunization programme, to engage in strengthening routine immunization, to work on demand creation and community engagement, to maintain the momentum with donors and focus on critical messages that "we can deliver", and that further support be provided to vaccine introduction in lower middle-income countries.
http://www.who.int/entity/immunization/GIN_June_2011.pdf

WHO released WHO IVB 11.03: manual for the establishment of national and other secondary standards for vaccines. "Aimed primarily at staff of national control laboratories and vaccine manufacturers, this document contains guidance on the principles of the preparation of national or other secondary biological standards, and details the issues which should be considered in the preparation and calibration of such standards. http://www.who.int/immunization/documents/who_ivb_11.03/en/index.html http://whqlibdoc.who.int/hq/2011/WHO_IVB_11.03_eng.pdf

The **MMWR Weekly for July 1, 2011** / Vol. 60 / No. 25 includes:
- Update on Vaccine-Derived Polioviruses --- Worldwide, July 2009--March 2011
- Notes from the Field : Multiple Cases of Measles After Exposure During Air Travel --- Australia and New Zealand, January 2011

The **Weekly Epidemiological Record (WER) for 1 July 2011**, vol. 86, 27 (pp 277–288) includes: Vaccine-derived polioviruses detected worldwide, July 2009–March 2011 http://www.who.int/entity/wer/2011/wer8627.pdf

Twitter Watch
A selection of items of interest this week from a variety of twitter feeds. This capture is highly selective and by no means intended to be exhaustive.

whadvocacy WorldHealth Advocacy
by GlobalHealth
@WHOBulletin #globalhealth projections: by 2060 #NCDs will account for more deaths than CDs by more than 5:1 http://bit.ly/jS5ieF

GAVISeth Seth Berkley
Thank you all for the wonderful comments and support in my transition from @IAVI and IAVISeth to @GAVIAlliance and @GAVISeth

GAVIAlliance GAVI Alliance

Exciting news! 3 more African countries have introduced #vaccines to combat pneumonia, w/ #GAVI's support: http://ht.ly/5uNyU #GlobalHealth

HarvardHSPH HarvardPublicHealth
Global cost of chronic disease could hit as high as $35 trillion if left unchecked now http://ht.ly/5tXnI #publichealth

CDCgov CDC.gov
RT @CDC_eHealth New web graphics available to support CDC Vaccines for Preteens & Teens campaign. Add to your site. go.usa.gov/Z4i

MalariaVaccine PATH MVI
We're live-tweeting the malaria R&D funding study report launch happening now in London. More about the report: http://bit.ly/kfZrb8

Journal Watch

[Editor's Note]
Vaccines: The Week in Review continues its weekly scanning of key journals to identify and cite articles, commentary and editorials, books reviews and other content supporting our focus on vaccine ethics and policy. ***Journal Watch*** **is not intended to be exhaustive, but indicative of themes and issues the Center is actively tracking.** We selectively provide full text of some editorial and comment articles that are specifically relevant to our work. Successful access to some of the links provided may require subscription or other access arrangement unique to the publisher. If you would like to suggest other journal titles to include in this service, please contact David Curry at: david.r.curry@centerforvaccineethicsandpolicy.org

Annals of Internal Medicine
June 21, 2011; 154 (12)
http://www.annals.org/content/current
[Reviewed earlier; No relevant content]

British Medical Bulletin
Volume 98 Issue 1 June 2011
http://bmb.oxfordjournals.org/content/current
[Reviewed earlier; No relevant content]

British Medical Journal
2 July 2011 Volume 343, Issue 7813
http://www.bmj.com/content/current
[No relevant content]

Clinical Infectious Diseases
Volume 53 Issue 2 July 15, 2011
http://www.journals.uchicago.edu/toc/cid/current
[Reviewed last week]

Cost Effectiveness and Resource Allocation
(accessed 4 July 2011)
http://www.resource-allocation.com/
[No relevant content]

Emerging Infectious Diseases
Volume 17, Number 7–July 2011
http://www.cdc.gov/ncidod/EID/index.htm
Synopsis
Understanding the Cholera Epidemic, Haiti
R. Piarroux et al.
Abstract
After onset of a cholera epidemic in Haiti in mid-October 2010, a team of researchers from France and Haiti implemented field investigations and built a database of daily cases to facilitate identification of communes most affected. Several models were used to identify spatiotemporal clusters, assess relative risk associated with the epidemic's spread, and investigate causes of its rapid expansion in Artibonite Department. Spatiotemporal analyses highlighted 5 significant clusters ($p<0.001$): 1 near Mirebalais (October 16–19) next to a United Nations camp with deficient sanitation, 1 along the Artibonite River (October 20–28), and 3 caused by the centrifugal epidemic spread during November. The regression model indicated that cholera more severely affected communes in the coastal plain (risk ratio 4.91) along the Artibonite River downstream of Mirebalais (risk ratio 4.60). Our findings strongly suggest that contamination of the Artibonite and 1 of its tributaries downstream from a military camp triggered the epidemic.
Research
Transmission of Influenza on International Flights, May 2009
A.R. Foxwell et al.
Summary
Air travel is one of the fastest ways to spread infectious diseases around the globe; the rapid spread of pandemic flu in 2009 was a prime example. Preventing the spread of infection among air passengers involves contacting those who sat near symptomatic passengers. However, the definition of "near" varies according to how infectious the virus is and how much the passengers and crew move around. It also depends on the length of the flight and how good the air circulation is. A study of flights to Australia found that for flu, the risk zone is smaller than previously thought. On long flights, risk was higher for those sitting in a smaller square zone around a symptomatic passenger (2 seats to either side and 2 seats in front and behind) than in the larger linear zone previously used (2 rows on either side). Narrowing the zone, and thus the number of potentially exposed passengers, may speed the contact process so exposed passengers can get preventive health care sooner.

Commentary
Implications of the Introduction of Cholera to Haiti
Scott F. Dowell and Christopher R. Braden
Author affiliation: Centers for Disease Control and Prevention, Atlanta, Georgia, USA

Health Affairs
June 2011; Volume 30, Issue 6
Strategies For The 'Decade Of Vaccines'
http://content.healthaffairs.org/content/current
[Reviewed earlier]

Health Economics, Policy and Law
Volume 6 - Issue 03 - 2011 http://journals.cambridge.org/action/displayIssue?jid=HEP&tab=currentissue
[Reviewed earlier]

Human Vaccines
Volume 7, Issue 7 July 2011
http://www.landesbioscience.com/journals/vaccines/toc/volume/7/issue/7/
Meeting Report
Next generation vaccines
Volume 7, Issue 7 July 2011
Eva M. Riedmann

In February this year, about 100 delegates gathered for three days in Vienna (Austria) for the Next Generation Vaccines conference. The meeting held in the Vienna Hilton Hotel from 23rd–25th February 2011 had a strong focus on biotech and industry. The conference organizer Jacob Fleming managed to put together a versatile program ranging from the future generation of vaccines to manufacturing, vaccine distribution and delivery, to regulatory and public health issues. Carefully selected top industry experts presented first-hand experience and shared solutions for overcoming the latest challenges in the field of vaccinology. The program also included several case study presentations on novel vaccine candidates in different stages of development. An interactive pre-conference workshop as well as interactive panel discussions during the meeting allowed all delegates to gain new knowledge and become involved in lively discussions on timely, interesting and sometimes controversial topics related to vaccines.

Review
Informed consent in vaccination in India: Medicolegal aspects
Volume 7, Issue 7 July 2011
Meena Rajput and Luv Sharma

The doctrine of informed consent forms an integral part of any doctor-patient relationship. It serves both ways as it develops trust and confidence in the patient for the doctor after being told about all that is to be done; conversely the doctor can carry out planned medical interventions in a more serene manner, being confident of being protected by this doctrine if anything untoward occurs. Informed consent gives a blanket shield against compensation and criminal negligence charges filed by patients if

the doctor has not deviated from standard practices of treatment or intervention or if no evidence of mal intention is forthcoming. Informed consent is applicable in most of the treatment modalities in which any intervention/invasive procedure is to be done or if any risk of complication is well known or documented. Surprisingly, even when serious life threatening complications are not only reported but on a steady rise due to vaccines, informed consent in vaccination is neither in vogue nor practice. Even in the United States, there is no federal requirement for informed consent before vaccination1, even though National Childhood Vaccine Injury Act and the Vaccine Compensation Amendments are in place2. This paper attempts to present an overall comment on the necessity of informed consent before any vaccination especially in the Indian context in the backdrop of the beginning of vaccine compensation claims and litigation against the complications of vaccination in India.

Short Report

Economic evaluation of a vaccine for the prevention of herpes zoster and post-herpetic neuralgia in older adults in Switzerland

Volume 7, Issue 7 July 2011

Thomas D. Szucs, Reto W. Kressig, Manto Papageorgiou, Werner Kempf, Jean-Pierre Michel, Anton Fendl and Xavier Bresse

Background: A life-attenuated vaccine aimed at preventing herpes zoster (HZ) and its main complication, post-herpetic neuralgia (PHN), will soon be available in Europe. The study's objective was to assess the clinical and economic impact of a vaccination program for adults aged 70-79 years in Switzerland. Results: A vaccination strategy compared to a no-vaccination resulted in lifetime incremental cost-effectiveness ratios (ICERs) of 25,538 CHF (23,646 USD) per QALY gained, 6,625 CHF (6,134 USD) per HZ case avoided, and 15,487 CHF (14,340 USD) per PHN3 case avoided under the third-party payer perspective. Sensitivity analyses showed that the model was most sensitive to the discount rates, HZ epidemiological data and vaccine price used. Methods: A Markov model, simulating the natural history of HZ and PHN and the lifetime effects of vaccination, previously developed for the UK was adapted to the Swiss context. The model includes several health states including good health, HZ, PHN, and death. HZ and PHN states reflected pain severity. Conclusion: The model predicts clinical and economic benefits of vaccination in the form of fewer HZ and PHN cases and reductions in healthcare resource use. ICERs were within the commonly accepted thresholds in Switzerland, indicating that a HZ vaccination program would be considered a cost-effective strategy in the Swiss setting.

Research Paper

Estimating potential demand and supply of dengue vaccine in Brazil

Volume 7, Issue 7 July 2011

Ananda Amarasinghe and Richard T. Mahoney

Dengue is endemic in Brazil. Several dengue vaccine candidates, including one at the Butantan Institute in Sao Paulo, are being evaluated in clinical trials and may be licensed in several years. This study estimates the potential doses of dengue vaccine needed in Brazil under different scenarios in the first 5 years after vaccine introduction. Estimates were based on 2015-2022 country population projections. An estimated country population of 200-209 million with an annual 3.3-3.5 million cohort in the 12 to 23 month age group was included in the analysis. Computations were made for vaccines requiring one, two and three doses. A total of 7.8-62.9 million doses would be needed for only routine vaccination of 12-23 months cohort in first five years with different

vaccination schedules. A combination of country-wide routine 12-23 month-old vaccination plus catch-up vaccination of individuals up to 40 years age is an appropriate strategy to control dengue. For this combination strategy, 129-425 million doses would be needed in the first five years after introduction. If vaccination is not provided to areas with low incidence of dengue, an estimated 108-360 million doses would be needed. This study provides a range of vaccine uptake estimates under different scenarios based on disease epidemiology. Actual demand and uptake will depend on the country vaccine introduction policy and strategies, vaccine supply capacity, cost, and vaccine profile. We consider one option based on the availability of vaccine from different sources. A more advanced vaccine uptake model based on estimates of vaccine impact under various scenarios should be developed.

Commentary

Beyond epitopes: Future and application of computational vaccinology

Volume 7, Issue 7 July 2011

Johannes Söllner

Vaccine research has significantly changed face within the last decade. Newly developed vaccines usually comprise defined subunits and often next generation adjuvants. On the downside, as in many areas ultimately of interest to clinical development, basic research does only slowly translate to bedside therapy. Part of the reason can be found in regulatory processes. On the other hand new technologies such as NGS (Next Generation Sequencing), Systems Biology, recently unimagined computing and storage power and suitable information technologies allow new perspectives and approaches to the field, enlarging the gap between possible and approved even more. Computational vaccinology is an aid to vaccine developers to help bridge this gap, but naturally only if it is accepted as tool and made use of. The aim of this commentary is to point out recent developments and trends and show how this can invigorate vaccine development. It is felt necessary to make a case for rational vaccine design augmented by computational vaccinology for the community to harness the full potential of emerging and already burgeoning technologies and concepts such as Next Generation Sequencing and Systems Biology.

JAMA

June 22/29, 2011, Vol 305, No. 24, pp 2493-2592

http://jama.ama-assn.org/current.dtl

[Reviewed last week]

Journal of Infectious Diseases

Volume 204 Issue 2 July 15, 2011

http://www.journals.uchicago.edu/toc/jid/current

[Reviewed earlier]

Supplement:

Global Progress Toward Measles Eradication and Prevention of Rubella and Congenital Rubella Syndrome

Volume 204 suppl 1 July 1, 2011

The extensive supplement is organized into the following sections:

- INTRODUCTION

- PUBLIC HEALTH IMPORTANCE OF MEASLES AND RUBELLA
- FEASIBILITY OF MEASLES ERADICATION
- ECONOMIC STUDIES
- MEASLES VACCINE SAFETY AND EFFECTIVENESS
- REGIONAL AND COUNTRY EXPERIENCES
- MOLECULAR EPIDEMIOLOGY AND LABORATORY ASPECTS OF MEASLES AND RUBELLA SURVEILLANCE

The Lancet
Jul 02, 2011 Volume 378 Number 9785 Pages 1 - 98
http://www.thelancet.com/journals/lancet/issue/current

Editorial

A new era for global tuberculosis control?

The Lancet

Preview

In this week's Lancet we publish a Seminar on tuberculosis, a disease that remains a major cause of death worldwide. Although tuberculosis is curable and preventable, long treatment durations, multidrug-resistant strains, a deadly association with HIV, and an inextricable link with poverty all mean that the disease presents an enormous challenge for countries to tackle. Although there has been commendable progress in case detection and aversion of deaths by treatment, in recent years the rates of decline in tuberculosis incidence have not been falling fast enough to meet global targets.

Comment

Group B streptococcal vaccine for resource-poor countries

Stephanie J Schrag, for the Global Group B Streptococcal Vaccine Working Group

Preview

Neonatal deaths, which occur mostly in resource-poor countries during the first week of life, constitute 41% of the 8·8 million deaths in children aged less than 5 years worldwide.1 Sepsis and pneumonia cause about a third of neonatal deaths. Maternal immunisation—the prevention cornerstone of neonatal tetanus and influenza programmes—has untapped potential to protect neonates from other infectious diseases. Group B streptococcal vaccines are uniquely suited to maternal immunisation in view of the substantial perinatal morbidity and mortality, particularly in the first 48 h of life.

Seminar

Tuberculosis

Stephen D Lawn, Alimuddin I Zumla

Preview

Tuberculosis results in an estimated 1·7 million deaths each year and the worldwide number of new cases (more than 9 million) is higher than at any other time in history. 22 low-income and middle-income countries account for more than 80% of the active cases in the world. Due to the devastating effect of HIV on susceptibility to tuberculosis, sub-Saharan Africa has been disproportionately affected and accounts for four of every five cases of HIV-associated tuberculosis. In many regions highly endemic for tuberculosis, diagnosis continues to rely on century-old sputum microscopy; there is no vaccine with adequate effectiveness and tuberculosis treatment regimens are protracted and have a risk of toxic effects.

The Lancet Infectious Disease
Jul 2011 Volume 11 Number 7 Pages 489 - 578
http://www.thelancet.com/journals/laninf/issue/current
[Reviewed last week]

Medical Decision Making (MDM)
May/June 2011; 31 (3)
http://mdm.sagepub.com/content/current
[Reviewed earlier]

Nature
Volume 474 Number 7353 pp541-672 30 June 2011
http://www.nature.com/nature/current_issue.html
[No relevant content]

Nature Medicine
June 2011, Volume 17 No 6
http://www.nature.com/nm/index.html
[Reviewed earlier]

New England Journal of Medicine
June 30, 2011 Vol. 364 No. 26
http://content.nejm.org/current.shtml
Perspectives
Comparative Effectiveness Research and Patients with Multiple Chronic Conditions
M.E. Tinetti and S.A. Studenski
[No abstract]

The Pediatric Infectious Disease Journal
July 2011 - Volume 30 - Issue 7 pp: A9-A10,545-632,e109-e129
http://journals.lww.com/pidj/pages/currenttoc.aspx
[Reviewed earlier; No relevant content]

Pediatrics
July 2011, VOLUME 128 / ISSUE 1
http://pediatrics.aappublications.org/current.shtml
Articles
Underimmunization in Ohio's Amish: Parental Fears Are a Greater Obstacle Than Access to Care

Olivia K. Wenger, Mark D. McManus, John R. Bower, and Diane L. Langkamp
Pediatrics 2011; 128:79-85
Abstract
OBJECTIVE: Holmes County, Ohio, one of the largest Amish communities in the world, has persistently low immunization rates. Studies of other Amish communities have revealed that parents do not immunize their children because of lack of access to immunizations. Our study explored reasons that Amish parents in the previously uninvestigated Holmes County population exempt themselves from immunizations.
METHODS: In January 2007, questionnaires for assessing attitudes regarding immunizations were mailed to a random sampling of 1000 Amish parents in Holmes County.
RESULTS: Thirty-seven percent of the parents responded. Among the 359 respondents, 68% stated that all of their children had received at least 1 immunization, and 17% reported that some of their children had received at least 1 immunization. Only 14% of the parents reported that none of their children had received immunizations. Eighty-six percent of the parents who completely exempted their children from vaccines stated that the main reason they do not vaccinate their children is concern over adverse effects. Many parents indicated that they allow their children to receive only some vaccines because of concern about the way certain vaccines are produced.
CONCLUSIONS: The reasons that Amish parents resist immunizations mirror reasons that non-Amish parents resist immunizations. Even in America's closed religious communities, the major barrier to vaccination is concern over adverse effects of vaccinations. If 85% of Amish parents surveyed accept some immunizations, they are a dynamic group that may be influenced to accept preventative care. Underimmunization in the Amish population must be approached with emphasis on changing parental perceptions of vaccines in addition to ensuring access to vaccines.

Pharmacoeconomics
July 1, 2011 - Volume 29 - Issue 7 pp: 549-635
http://adisonline.com/pharmacoeconomics/pages/currenttoc.aspx
[Reviewed earlier]

PLoS One
[Accessed 4 July 2011]
http://www.plosone.org/article/browse.action;jsessionid=577FD8B9E1F322DAA533C413369CD6F3.ambra01?field=date
Evolution of Scaling Emergence in Large-Scale Spatial Epidemic Spreading
Lin Wang, Xiang Li, Yi-Qing Zhang, Yan Zhang, Kan Zhang Research Article, published 01 Jul 2011
doi:10.1371/journal.pone.0021197
Abstract
Background
Zipf's law and Heaps' law are two representatives of the scaling concepts, which play a significant role in the study of complexity science. The coexistence of the Zipf's law and the Heaps' law motivates different understandings on the dependence between these two scalings, which has still hardly been clarified.

Methodology/Principal Findings
In this article, we observe an evolution process of the scalings: the Zipf's law and the Heaps' law are naturally shaped to coexist at the initial time, while the crossover comes with the emergence of their inconsistency at the larger time before reaching a stable state, where the Heaps' law still exists with the disappearance of strict Zipf's law. Such findings are illustrated with a scenario of large-scale spatial epidemic spreading, and the empirical results of pandemic disease support a universal analysis of the relation between the two laws regardless of the biological details of disease. Employing the United States domestic air transportation and demographic data to construct a metapopulation model for simulating the pandemic spread at the U.S. country level, we uncover that the broad heterogeneity of the infrastructure plays a key role in the evolution of scaling emergence.
Conclusions/Significance
The analyses of large-scale spatial epidemic spreading help understand the temporal evolution of scalings, indicating the coexistence of the Zipf's law and the Heaps' law depends on the collective dynamics of epidemic processes, and the heterogeneity of epidemic spread indicates the significance of performing targeted containment strategies at the early time of a pandemic disease.

PLoS Medicine
(Accessed 26 June 2011: database unavailable)
http://www.plosmedicine.org/article/browse.action?field=date
Scaling Up Global Health Interventions: A Proposed Framework for Success
Gavin Yamey Essay, published 28 Jun 2011
doi:10.1371/journal.pmed.1001049
Summary Points
- The rise in international aid to fund large-scale global health programs over the last decade has catalyzed interest in improving the science of scale-up.
- This Essay draws upon key themes in the emerging science of large-scale change in global health to propose a framework for explaining successful scale-up.
- Success factors for scaling up were identified from interviews with implementation experts and from the published literature.
- These factors include the following: choosing a simple intervention widely agreed to be valuable, strong leadership and governance, active engagement of a range of implementers and of the target community, tailoring the scale-up approach to the local situation, and incorporating research into implementation.

Science
1 July 2011 vol 333, issue 6038, pages 1-124
http://www.sciencemag.org/current.dtl
EDITORIAL:
AIDS: Let Science Inform Policy
Anthony S. Fauci
Science 1 July 2011: 13.
Summary

Thirty years have passed since the first cases of acquired immune deficiency syndrome (AIDS) were reported by the U.S. Centers for Disease Control and Prevention. How does this anniversary compare to the 20th or the 10th? The differences are considerable, because we now have an unprecedented opportunity, based on solid scientific data, to control and ultimately end the AIDS pandemic.

Policy Forum

Aids

Turning the Tide Against HIV

Robin J. Shattock, Mitchell Warren, Sheena McCormack, and Catherine A. Hankins
Science 1 July 2011: 42-43.

Summary

Although the annual number of new HIV infections (incidence) declined from a peak of 3.5 million in 1996 to 2.6 million in 2009, the total number living with HIV continues to rise as more people live longer. While 6.6 million people with HIV are now on antiretroviral treatment (ART), 9 million are waiting to receive it, with two people newly infected for every person starting ART (1). Twenty million more people are predicted to acquire HIV by 2031, which will increase treatment costs up to $35 billion a year (2). This raises issues of sustainability. Thus, reducing HIV incidence is critical to keeping alive the promise of universal access to HIV prevention, treatment, care, and support.

Science Translational Medicine

29 June 2011 vol 3, issue 89
http://stm.sciencemag.org/content/current

Commentaries

Innovation

The Fiber of Modern Society

Elazer R. Edelman and
Martin B. Leon
29 June 2011: 89cm14

In a series of articles, diverse professionals engage in a critical dialogue on innovation.

Innovation

Repaving the Road to Biomedical Innovation Through Academia

Andrew R. Marks
29 June 2011: 89cm15

New funding models that support high-risk research in academia will spur innovation.

Innovation

How to Revive Breakthrough Innovation in the Pharmaceutical Industry

Bernard H. Munos and
William W. Chin
29 June 2011: 89cm16

Pharmaceutical firms must reengage in high-risk discovery research and only take genuine breakthroughs to the clinic.

Tropical Medicine & International Health

July 2011 Volume 16, Issue 7 Pages 773–903
http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1365-3156/currentissue

[Reviewed earlier]

Vaccine
Volume 29, Issue 31 pp. 4875-5086 (12 July 2011)
http://www.sciencedirect.com/science/journal/0264410X

Short Communications

Evidence of an effect of BCG revaccination on incidence of tuberculosis in school-aged children in Brazil: Second report of the BCG-REVAC cluster-randomised trial

Pages 4875-4877

Mauricio L. Barreto, Susan M. Pereira, Daniel Pilger, Alvaro A. Cruz, Sergio S. Cunha, Clemax Sant'Anna, Maria Y. Ichihara, Bernd Genser, Laura C. R

Abstract
BCG revaccination is still used in some tuberculosis endemic countries. Until now, the little evidence available suggested that BCG revaccination confers very limited additional protection, although there was no information on whether protection depends on the setting and age of revaccination, or if protection increases with time since vaccination. Here we report on an extended follow up of the BCG-REVAC trial, a cluster randomised trial conducted in the Brazilian cities Salvador and Manaus including over 200,000 children aged 7–14 years aimed to evaluate the efficacy of BCG revaccination in children who had received neonatal BCG vaccination. With the extended follow-up (9 years) and the additional cases accrued we now have enough power to report vaccine efficacy separately for the two cities (with different distances from Equator and presumably different prevalence of non-tuberculosis mycobacteria), and by age at vaccination and clinical form. The overall vaccine efficacy was 12% (−2 to 24%) as compared to 9% (−16 to 29%) for the 5-year follow up. Vaccine efficacy was higher in Salvador (19%, 3 to 33%) than in Manaus (1%, −27 to 27%) with the highest vaccine efficacy in children from Salvador aged <11 years at revaccination (33%, 3 to 54%). The findings are in line with the hypothesis that BCG vaccination offers higher efficacy in low NTMb prevalence, and show that revaccination with BCG can offer weak protection in selected subgroups.

Regular Papers

Monitoring vaccine safety using the Vaccine Safety Datalink: Utilizing immunization registries for pandemic influenza

Pages 4891-4896

Natalie L. McCarthy, Julianne Gee, Eric Weintraub, James G. Donahue, James D. Nordin, Matthew F. Daley, Allison Naleway, Michelle Henninger, Roger Baxter, Bradley Crane, Laurie Aukes, Nicole Wagner, Sarah Fisher, Steven J. Jacobsen, Lina Sy, James Baggs

Abstract
Mass vaccination campaigns during which new vaccines may be administered to many millions of people in a short period of time call for timely and accurate post-licensure surveillance to monitor vaccine safety. To address the need for timely H1N1 influenza vaccine safety information during the 2009–2010 H1N1 influenza pandemic, the Vaccine Safety Datalink (VSD) project assessed the feasibility and potential mechanisms for utilizing data from state and local immunization registries to capture vaccinations that would not otherwise be captured by the data systems of the participating VSD managed care organizations (MCOs). Three of the eight VSD sites were able to capture H1N1

immunization data electronically from the state and local registries, and one site was able to capture the immunizations through a paper-based system; however, the remaining four sites encountered various obstacles that prevented capture of such data. Additional work will be required at these sites to overcome the barriers, which included privacy and confidentiality laws, time constraints brought on by the pandemic, as well as data quality concerns.

Cost-effectiveness analysis of the 10- and 13-valent pneumococcal conjugate vaccines in Argentina

Pages 4963-4972

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Abstract

Objective

Since the 10-valent pneumococcal conjugate vaccine (PCV-10) and 13-valent pneumococcal conjugate vaccine (PCV-13) were recently licensed for use in Argentina, both vaccines were evaluated to estimate the costs, health benefits and cost-effectiveness of adding a PCV to the routine child immunization schedule.

Methodology

The integrated TRIVAC vaccine cost-effectiveness model from Pan American Health Organization's ProVac Initiative (Version 1.0.65) was used to assess the health outcomes of 20 successive cohorts from birth to 5 years of age. PCV-10 and PCV-13 were each compared to a scenario assuming no PCV vaccination. A 3 + 1 (three doses + booster) schedule and a vaccination price of US$ 20.75 per dose was assumed in the base case for both vaccines.

Results

Introduction of PCV-13 rather than PCV-10 would increase the number of life years gained (LYG) by at least 10%. The number of LYG (and LYG after adjustment for DALY morbidity weights) was 56,882 (64,252) for PCV-10 compared to 65,038 (71,628) for PCV-13. From the health system perspective, the cost per DALY averted was US$ 8973 and US$ 10,948 for PCV-10 and PCV-13 respectively, and US$ 8546 and US$ 10,510 respectively, after incorporating costs saved by households. When PCV13 was compared to PCV10 directly, the additional benefits of PCV-13 was conferred at a cost of US$ 28,147 per DALY averted. Cost-effectiveness was influenced mainly by vaccine price, serotype replacement, pneumonia mortality and discount rate.

Conclusion

Routine vaccination against S. pneumoniae in Argentina would be cost-effective with either PCV-10 or PCV-13. PCV-13, with higher coverage of local serotypes, would prevent more cases of pneumonia, invasive pneumococcal disease, sequelae and deaths with a higher number of LYG and DALYs averted, but PCV-10, due its higher impact in the prevention of AOM, would save more costs to the healthcare system.

A model to evaluate mass vaccination against pneumococcus as a countermeasure against pandemic influenza

Pages 5065-5077

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Abstract

A mathematical model has been developed for the purpose of evaluating vaccination against pneumococcus as a countermeasure against pandemic influenza. As the

characteristics of a future pandemic cannot be known in advance, three distinct pandemic scenarios were considered, corresponding to a 1918-like pandemic, a 1957/1968-like pandemic and a 2009-like pandemic.

Model estimates for each of these pandemic scenarios are presented for two options of vaccination programme; universal vaccination of the entire UK population and vaccination only of those people considered to be at heightened risk of developing influenza complications. We find that the benefits of each option (in terms of estimated number of deaths and hospital admissions avoided and the courses of antibiotics saved) are high in a 1918-like pandemic and very small in a 2009-like pandemic. Given that the decision regarding deployment of the counter measure would occur prior to knowledge of the flu-strain characteristics being available, we also present the weighted average of the outcomes from the three pandemic scenarios. Based on the historical occurrence of pandemics over the last 100 years, the weighted average of outcomes is an estimated 1400 deaths prevented by the universal vaccination option and 400 deaths saved by the targeted vaccination option (at a cost of approximately 400 million and 50 million courses of vaccine respectively).

Finally, the longer term implications of using PPV as a countermeasure against pandemic influenza have been considered by estimating the expected number of courses of vaccine bought and the expected number of deaths and hospital admissions prevented over time under each policy.

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