Center for Vaccine Ethics and Policy
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Vaccines: The Week in Review
6 April 2013
Center for Vaccine Ethics & Policy (CVEP)

This weekly summary targets news, events, announcements, articles and research in the global vaccine ethics and policy space and is aggregated from key governmental, NGO, international organization and industry sources, key peer-reviewed journals, and other media channels. This summary proceeds from the broad base of themes and issues monitored by the Center for Vaccine Ethics & Policy in its work: it is not intended to be exhaustive in its coverage. Vaccines: The Week in Review is also posted in pdf form and as a set of blog posts at http://centerforvaccineethicsandpolicy.wordpress.com/. This blog allows full-text searching of over 3,500 entries.

Comments and suggestions should be directed to
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WHO: Global Alert and Response (GAR) – *Disease Outbreak News*

http://www.who.int/csr/don/2013_03_12/en/index.html

Human infection with influenza A(H7N9) virus in China – update at 6 April 2013

As of 6 April 2013 (16:45 CET), the Chinese health authorities notified WHO of an additional two laboratory-confirmed cases of human infection with influenza A(H7N9) virus.
Both of these cases are from Shanghai. The first patient is a 74-year-old man, who became ill on 28 March 2013, and is now in critical condition. The other is a 66-year-old man who became ill on 29 March 2013 and is considered a mild case.

To date, a total of 18 cases have been laboratory confirmed with influenza A(H7N9) virus in China, including six deaths, ten severe cases and two mild cases.

More than 530 close contacts of the confirmed cases are being closely monitored. In Jiangsu, investigation is ongoing into a contact of an earlier confirmed case who developed symptoms of illness.

The Chinese government is actively investigating this event and has heightened disease surveillance. Retrospective testing of recently reported cases with severe respiratory infection may uncover additional cases that were previously unrecognized. An inter-government task force has been formally established, with the National Health and Family Planning Commission leading the coordination along with the Ministry of Agriculture and other key ministries. The animal health sector has intensified investigations into the possible sources and reservoirs of the virus.

WHO is in contact with national authorities and is following the event closely. The WHO-coordinated international response is also focusing on work with WHO Collaborating Centres for Reference and Research on Influenza and other partners to ensure that information is available and that materials are developed for diagnosis and treatment and vaccine development. No

vaccine is currently available for this subtype of the influenza virus. Preliminary test results provided by the WHO Collaborating Centre in China suggest that the virus is susceptible to the neuraminidase inhibitors (oseltamivir and zanamivir).

At this time there is no evidence of ongoing human-to-human transmission.

WHO does not advise special screening at points of entry with regard to this event, nor does it recommend that any travel or trade restrictions be applied.

WHO: Frequently Asked Questions on human infection with influenza A(H7N9) virus, China – Update as of 5 April 2013

Note that this document supersedes the previous version. Updates will be posted as new information becomes available.

1. What is the influenza A(H7N9) virus?

Influenza A H7 viruses are a group of influenza viruses that normally circulate among birds. The influenza A(H7N9) virus is one subgroup among the larger group of H7 viruses. Although some H7 viruses (H7N2, H7N3 and H7N7) have occasionally been found to infect humans, no human infections with H7N9 viruses have been reported until recent reports from China.

2. What are the main symptoms of human infection with influenza A(H7N9) virus?

Thus far, most patients with this infection have had severe pneumonia. Symptoms include fever, cough and shortness of breath. However, information is still limited about the full spectrum of disease that infection with influenza A(H7N9) virus might cause.

3. How many human cases of influenza A(H7N9) virus have been reported in China to date?

New cases that are reported are now being compiled and posted daily. The most current information on cases can be found in Disease Outbreak News.

4. Why is this virus infecting humans now?

We do not know the answer to this question yet, because we do not know the source of exposure for these human infections. However, analysis of the genes of these viruses suggests that although they have evolved from avian (bird) viruses, they show signs of adaption to growth in mammalian species. These adaptations include an ability to bind to mammalian cells, and to grow at temperatures close to the normal body temperature of mammals (which is lower than that of birds).

5. What is known about previous human infections with H7 influenza viruses globally?

From 1996 to 2012, human infections with H7 influenza viruses (H7N2, H7N3, and H7N7) were reported in the Netherlands, Italy, Canada, United States of America, Mexico and the United Kingdom. Most of these infections occurred in association with poultry outbreaks. The infections mainly resulted in conjunctivitis and mild upper respiratory symptoms, with the exception of one death, which occurred in the Netherlands. Until now, no human infections with H7 influenza viruses have been reported in China.

Complete FAQ at:
http://www.who.int/influenza/human_animal_interface/faq_H7N9/en/index.html

CDC: Telebriefing on H7N9 Influenza Cases

Transcript: http://www.cdc.gov/media/releases/2013/t0405_h7n9_iinfluenza.html

VaxInnate Corporation was awarded a grant to fund the development of a recombinant vaccine for the prevention of dengue by the U.S. National Institute of

Allergy and Infectious Diseases (NIAID). Dengue is a mosquito-borne disease that kills an estimated 25,000 people annually. The grant provides funding of $2.2 million over a period of three years to develop a recombinant tetravalent dengue vaccine using VaxInnate's proprietary technology. The technology involves "genetically fusing vaccine antigens to the bacterial protein flagellin, a potent stimulator of the innate immune system, which dramatically improves the potency, manufacturing capacity and cost-effectiveness of vaccines."
Full media release of April 04, 2013:
http://www.businesswire.com/news/home/20130404005347/en/VaxInnate-Awarded-U.S.-Government-Grant-Develop-Dengue

Update: Polio this week - *As of 3 April 2013*
Global Polio Eradication Initiative
http://www.polioeradication.org/Dataandmonitoring/Poliothisweek.aspx
[Editor's extract and bolded text]
- The report on polio eradication to the upcoming World Health Assembly (WHA) in May has now been finalized. It provides an overview of the latest global epidemiological situation, reviews the impact of the national emergency action plans in the remaining endemic countries, and summaries the key elements of the new Polio Eradication and Endgame Strategic Plan 2013-2018 that is currently being finalized. The report is available at
http://www.polioeradication.org/Resourcelibrary/ReportstoWHOgoverningbodies.aspx

[Editor's Note: Please see coverage of a special issue of *Risk Analysis* on poliovirus eradication below in *Journal Watch*, and a *Washington Post* editorial on eradication in *Media/Policy Watch,* also below]

WHO - Humanitarian Health Action
http://www.who.int/hac/en/index.html
Civil unrest leads to widespread looting of healthcare facilities in the Central African Republic [undated; posted since 6 April 2013]]
The protracted armed conflict in the Central African Republic has intensified since December and culminated in a coup d'etat on 24 March. Due to the insecurity since the Séléka armed coalition took control of the capital, healthcare delivery to the general population of Bangui is heavily affected. There have been reports of widespread looting of healthcare facilities, warehouses and offices (including WHO). WHO has internally classified the situation in the Central African Republic as a Grade 2 emergency due to the consequences of the civil unrest.

Global Vaccine Action Plan
- pdf print version (132 pages)
http://www.unicef.org/videoaudio/PDFs/GVAP_single_pages_PRINT.pdf
- Summary of interventions on the Global Vaccine Action Plan (GVAP) and the WHO Executive Board (EB) (Agenda item 9.1, report EB 132/18)

http://centerforvaccineethicsandpolicy.wordpress.com/2013/04/06/global-vaccine-action-plan-april-2013/

Reports/Research/Analysis/ Conferences/Meetings/Book Watch

Vaccines: The Week in Review has expanded its coverage of new reports, books, research and analysis published independent of the journal channel covered in Journal Watch below. Our interests span immunization and vaccines, as well as global public health, health governance, and associated themes. If you would like to suggest content to be included in this service, please contact David Curry at: david.r.curry@centerforvaccineethicsandpolicy.org

UNDP: *2013 Human Development Report*

UN Development Programme
April 2013
Overview

The 21st century is witnessing a profound shift in global dynamics, driven by the fast-rising new powers of the developing world. China has overtaken Japan as the world's second biggest economy, lifting hundreds of millions of people out of poverty in the process. India is reshaping its future with new entrepreneurial creativity and social policy innovation. Brazil is raising its living standards by expanding international relationships and antipoverty programmes that are emulated worldwide.

But the "Rise of the South" is a much larger phenomenon. Indonesia, Mexico, South Africa, Thailand, Turkey and other developing countries are becoming leading actors on the world stage. The 2013 Human Development Report identifies more than 40 developing countries that have done better than expected in human development in recent decades, with their progress accelerating markedly over the past 10 years.

Read the report
Download media materials
See the launch video
Explore the data

16th Annual Conference on Vaccine Research

National Foundation for Infectious Diseases
22-24 April 2013
The Annual Conference on Vaccine Research (ACVR) provides high-quality, current reports of scientific progress and best practices featured in both invited presentations and submitted oral abstracts and posters. The ACVR brings together the diverse disciplines involved in the research and development of vaccines and associated technologies for disease control through immunization. By drawing upon an international audience of scientists and researchers, healthcare professionals and trainees, veterinarians, vaccine manufacturers, and public health officials, the conference is designed to encourage the exchange of ideas across a broad range of disciplines.
http://www.cvent.com/events/16th-annual-conference-on-vaccine-research/event-summary-db97bedd5ee041eeb09d971650f76be0.aspx

IVAC: VIMS Report: Global Vaccine Introduction
A report on current global access to new childhood vaccines
March, 2013
International Vaccine Access Center (IVAC), Johns Hopkins Bloomberg School of Public Health
www.jhsph.edu/ivac
EXECUTIVE SUMMARY
The following report displays data and figures on the introduction status of Hib vaccine, pneumococcal conjugate vaccine (PCV) and rotavirus vaccine both globally and in 73 GAVI eligible countries. It uses information stored in the Vaccine Information Management System (VIMS) online database maintained by IVAC at the Johns Hopkins Bloomberg School of Public Health and supported by the GAVI Alliance. The images and text below describe: how many countries have introduced each vaccine or plan to in the future; global and GAVI rates of coverage and access; projected introduction dates for GAVI eligible countries; historical trends of the rate of introduction globally; and the introduction status of every country individually. The report concludes with a more detailed description of VIMS and its potential uses and can found at: http://www.jhsph.edu/ivac/index.html - [http://www.jhsph.edu/research/centers-and-institutes/ivac/vims/IVAC-VIMS-Report-2013-03.pdf] A PowerPoint presentation with graphics can be found in the VIMS database. To gain access to VIMS, please email vims@jhsph.edu

CFR: *Enter the Dragon and the Elephant: China's and India's Participation in Global Health Governance*
IIGG Working Paper
Council on Foreign Relations Press
April 2013 – 22 pages
Overview
Yanzhong Huang examines China's and India's participation in three dimensions of global health governance (GHG): health-related foreign assistance, the development and implementation of global health rules, and the ideational foundations of their participation. Overall, both countries are increasingly active in participating in GHG, but they not only fail to shoulder significantly more responsibilities in GHG but also fail to offer a viable, sustainable alternative to the existing governance paradigm. Future directions and effectiveness of their participation will ultimately be determined by the dynamics of the ongoing global power shift and the two countries' ability to address domestic health challenges.
http://www.cfr.org/asia/enter-dragon-elephant-chinas-indias-participation-global-health-governance/p30332

Journal Watch
Vaccines: The Week in Review continues its weekly scanning of key peer-reviewed 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

American Journal of Infection Control
Vol 41 | No. 4 | April 2013 | Pages 285-388
http://www.ajicjournal.org/current
[Reviewed earlier]

American Journal of Public Health
Volume 103, Issue 4 (April 2013)
http://ajph.aphapublications.org/toc/ajph/current
[Reviewed earlier]

Annals of Internal Medicine
2 April 2013, Vol. 158. No. 7
http://www.annals.org/content/current
[No relevant content]

BMC Public Health
(Accessed 6 April 2013)
http://www.biomedcentral.com/bmcpublichealth/content
[No new relevant content]

British Medical Bulletin
Volume 104 Issue 1 December 2012
http://bmb.oxfordjournals.org/content/current
[Reviewed earlier; No relevant content]

British Medical Journal
06 April 2013 (Vol 346, Issue 7902)
http://www.bmj.com/content/346/7902
Analysis
What should follow the millennium development goals?
BMJ 2013; 346 doi: http://dx.doi.org/10.1136/bmj.f1193 (Published 28 March 2013
http://www.bmj.com/content/346/bmj.f1193
Charles Kenny
Extract

Debate on what should replace the millennium development goals when their target date of 2015 is reached is hotting up. Charles Kenny comments on lessons learnt from their success and failure and looks at the suggestions for the post-2015 development agenda
The millennium development goals were an offshoot of the United Nations Millennium Declaration agreed by world leaders at the UN General Assembly in 2000.1 The eight goals that were subsequently adopted in 2001 set targets for progress to reduce poverty and improve outcomes in nutrition, education, health, equality, the environment, and global partnerships by 2015 (box). With that end date fast approaching debate on what should follow them is mounting, and later this year the UN secretary general will set out a draft agenda based on recent consultations. As discussion continues it is important to consider the successes and failures of the goals learnt from the lessons these provide, and look at the desirability and feasibility of new goals that have been suggested…

Analysis

Commentary: new development goals must focus on social determinants of health

BMJ 2013; 346 doi: http://dx.doi.org/10.1136/bmj.f1893 (Published 28 March 2013)
http://www.bmj.com/content/346/bmj.f1893

David Legge, David Sanders

Extract

Although the millennium development goals (MDGs) addressed some of the starkest manifestations of the contemporary global health crisis, they failed to confront the underlying structures that maintain the crisis, including globalisation. In reflecting on the post-2015 development agenda,1 we need to challenge some key assumptions about the genesis and effect of the current goals.

Much of the discourse around the MDGs since 2000 has suggested that attainment would be secured by creating a global partnership for development (goal 8) and would require "more of the same," including increased development assistance. An alternative interpretation is that both the goals and the increased development assistance since 2000 were motivated, at least in part, by the need to shore up the legitimacy of what was …

Bulletin of the World Health Organization
Volume 91, Number 4, April 2013, 237-312
http://www.who.int/bulletin/volumes/91/4/en/index.html

The human qualities needed to complete the global eradication of polio

Dermot Maher

Abstract

Although the 99% decrease seen in global polio incidence between 1988 and 2000 represented remarkable progress towards polio eradication, tackling the last 1% of polio has proved tantalizingly difficult. Pockets of endemic transmission currently persist both on the border between Afghanistan and Pakistan and in northern Nigeria. These pockets have permitted the reinfection of countries that were previously polio-free. Global strategic plans for polio eradication set out the activities, resources and financing needed to overcome the managerial, technical and security challenges faced by those tasked with the interruption of poliovirus transmission. However, polio eradication also depends on the less tangible but equally important human qualities of energy, realism, articulacy, determination, imagination, collaboration, adaptability, tactical awareness, innovation, openness and nimbleness (the initial letters of which give the acronym "ERADICATION"). By paying attention to these human qualities, the stakeholders involved may be more likely to achieve global polio eradication.

http://www.who.int/entity/bulletin/volumes/91/4/12-111831/en/index.html

Ethical considerations for vaccination programmes in acute humanitarian emergencies

Keymanthri Moodley, Kate Hardie, Michael J Selgelid, Ronald J Waldman, Peter Strebel, Helen Rees & David N Durrheim

doi: 10.2471/BLT.12.113480

Abstract

Humanitarian emergencies result in a breakdown of critical health-care services and often make vulnerable communities dependent on external agencies for care. In resource-constrained settings, this may occur against a backdrop of extreme poverty, malnutrition, insecurity, low literacy and poor infrastructure. Under these circumstances, providing food, water and shelter and limiting communicable disease outbreaks become primary concerns. Where effective and safe vaccines are available to mitigate the risk of disease outbreaks, their potential deployment is a key consideration in meeting emergency health needs. Ethical considerations are crucial when deciding on vaccine deployment. Allocation of vaccines in short supply, target groups, delivery strategies, surveillance and research during acute humanitarian emergencies all involve ethical considerations that often arise from the tension between individual and common good. The authors lay out the ethical issues that policy-makers need to bear in mind when considering the deployment of mass vaccination during humanitarian emergencies, including beneficence (duty of care and the rule of rescue), non-maleficence, autonomy and consent, and distributive and procedural justice.

http://www.who.int/entity/bulletin/volumes/91/4/12-111831/en/index.html

Clinical Therapeutics

Vol 35 | No. 3 | March 2013 | Pages 199-350

http://www.clinicaltherapeutics.com/current

[Reviewed earlier]

Cost Effectiveness and Resource Allocation

(Accessed 6 April 2013)

http://www.resource-allocation.com/

[No new relevant content]

Current Opinion in Infectious Diseases.

April 2013 - Volume 26 - Issue 2 pp: vii-vii,107-211

http://journals.lww.com/co-infectiousdiseases/pages/currenttoc.aspx

[No relevant content]

Development in Practice

Volume 23, Issue 1, 2013

http://www.tandfonline.com/toc/cdip20/current

[Reviewed earlier]

Emerging Infectious Diseases
Volume 19, Number 4—April 2013
http://www.cdc.gov/ncidod/EID/index.htm
[Reviewed earlier]

Eurosurveillance
Volume 18, Issue 14, 04 April 2013
http://www.eurosurveillance.org/Public/Articles/Archives.aspx?PublicationId=11678
[No relevant content]

Forum for Development Studies
Volume 40, Issue 1, 2013
http://www.tandfonline.com/toc/sfds20/current
[Reviewed earlier]

Global Health Governance
Volume VI, Issue 1: Fall 2012
– December 31, 2012
[Reviewed earlier]

Globalization and Health
[Accessed 6 April 2013]
http://www.globalizationandhealth.com/
[No new relevant content]

Health Affairs
March 2013; Volume 32, Issue 3
http://content.healthaffairs.org/content/current
Theme: Promoting Health & Wellness
[Reviewed earlier; No specific relevant content on vaccines/immunization]

Health and Human Rights
Vol 14, No 2 (2012)
http://hhrjournal.org/index.php/hhr
[Reviewed earlier]

Health Economics, Policy and Law
Volume 8 - Issue 02 - April 2013
http://journals.cambridge.org/action/displayIssue?jid=HEP&tab=currentissue
[Reviewed earlier]

Health Policy and Planning
Volume 28 Issue 2 March 2013
http://heapol.oxfordjournals.org/content/current
[Reviewed earlier; No relevant content]

Human Vaccines & Immunotherapeutics (formerly Human Vaccines)
Volume 9, Issue 4 April 2013
http://www.landesbioscience.com/journals/vaccines/toc/volume/9/issue/4/
Issue Theme: Novel Vaccines
RESEARCH PAPERS
Childhood varicella-zoster virus vaccination in Belgium: Cost-effective only in the long run or without exogenous boosting?
Joke Bilcke, Albert Jan van Hoek and Philippe Beutels
http://dx.doi.org/10.4161/hv.23334
Abstract:
Aim: To assess the effectiveness and cost-effectiveness of a universal childhood varicella-zoster vaccination programme in Belgium (1) using the most recent Belgian data on varicella-zoster burden, (2) exploring different options for the timing of the second dose, (3) obtaining results with and without exogenous natural boosting, and (4) investigating the possible additional benefit of zoster booster vaccination for adults at age 50 or 60 years.
Methods: An extensively studied and improved dynamic model is used to estimate primary and breakthrough chickenpox and zoster cases over time. For a range of vaccination options, we compared the direct costs (health care payer perspective) and health outcomes (including Quality-Adjusted Life-Years (QALYs) lost) associated with chickenpox and herpes zoster. Estimates of social contact patterns, health care use, costs and QALY losses are almost exclusively based on Belgian databases and surveys.
Results and Conclusions: If exogenous natural boosting exists, a net loss in QALYs is expected for several decades after implementing a universal chickenpox vaccination programme, due to an increase in zoster mainly in persons aged 50-80 years. This result holds also for scenarios that minimise or counteract the expected increase in zoster incidence (e.g. additional booster vaccinations in adults). However, if the boosting hypothesis is not true or if costs and QALYs are cumulated over at least 33 to more than 100 years after vaccination (depending on the assumptions made), different options for universal 2-dose vaccination against chickenpox in Belgium would be cost-effective at a vaccine price of €43/dose or lower.
A comparative analysis of the epidemiological impact and disease cost-savings of HPV vaccines in France
Xavier Bresse, Marjorie Adam, Nathalie Largeron, Stephane Roze and Rémi Marty
http://dx.doi.org/10.4161/hv.22994
Open Access Article
Abstract:
The aim was to compare the epidemiological and economic impact of 16/18 bivalent and 6/11/16/18 quadrivalent HPV vaccination in France, considering differences in licensed outcomes, protection against non-vaccine HPV types and prevention of HPV-6/11-related diseases.
The differential impact of the two vaccines was evaluated using a published model adapted to the French setting. The target population was females aged 14–23 y and the time horizon was

100 y. A total of eight different scenarios compared vaccination impact in terms of reduction in HPV-16/18-associated carcinomas (cervical, vulvar, vaginal, anal, penile and head and neck), HPV-6/11-related genital warts and recurrent respiratory papillomatosis, and incremental reduction in cervical cancer due to potential cross-protection.

Quadrivalent vaccine was associated with total discounted cost savings ranging from EUR 544–1,020 million vs. EUR 177–538 million with the bivalent vaccination (100-y time horizon). Genital wart prevention thanks to quadrivalent HPV vaccination accounted for EUR 306–380 million savings (37–56% of costs saved). In contrast, the maximal assumed cross-protection against cervical cancer resulted in EUR 13–33 million savings (4%). Prevention of vulvar, vaginal and anal cancers accounted for additional EUR 71–89 million savings (13%).

In France, the quadrivalent HPV vaccination would result in significant incremental epidemiological and economic benefits vs. the bivalent vaccination, driven primarily by prevention of genital. The present analysis is the first in the French setting to consider the impact of HPV vaccination on all HPV diseases and non-vaccine types.

Key issues for estimating the impact and cost-effectiveness of seasonal influenza vaccination strategies

Mark Jit, Anthony T. Newall and Philippe Beutels

http://dx.doi.org/10.4161/hv.23637

Abstract:

Many countries have considered or are considering modifying their seasonal influenza immunization policies. Estimating the impact of such changes requires understanding the existing clinical and economic burden of influenza, as well as the potential impact of different vaccination options. Previous studies suggest that vaccinating clinical risk groups, health care workers, children and the elderly may be cost-effective. However, challenges in such estimation include: (1) potential cases are not usually virologically tested; (2) cases have non-specific symptoms and are rarely reported to surveillance systems; (3) endpoints for influenza proxies (such as influenza-like illness) need to be matched to case definitions for treatment costs, (4) disease burden estimates vary from year to year with strain transmissibility, virulence and prior immunity, (5) methods to estimate productivity losses due to influenza vary, (6) vaccine efficacy estimates from trials differ due to variation in subtype prevalence, vaccine match and case ascertainment, and (7) indirect (herd) protection from vaccination depends on setting-specific variables that are difficult to directly measure. Given the importance of knowing the impact of changes to influenza policy, such complexities need careful treatment using tools such as population-based trial designs, meta-analyses, time-series analyses and transmission dynamic models.

SHORT REPORT

Human papillomavirus vaccine uptake among 9–17 year old males in the United States: The National Health Interview Survey, 2010

Tabassum H. Laz, Mahbubur Rahman and Abbey B. Berenson

http://dx.doi.org/10.4161/hv.23190☐ Open Access Article

Abstract:

In 2009, a quadrivalent HPV vaccine was approved and "permissively" recommended for US males aged 9 to 26 y to protect against genital warts. The purpose of this study was to examine parental awareness and HPV vaccine uptake among 9–17 y old males during the first year following this recommendation. Data from the 2010 National Health Interview Survey (NHIS) were obtained to assess vaccination status (n = 2973) of this age group. Univariate logistic regression analysis was performed to examine correlates of parental awareness and uptake of the HPV vaccine. Overall, 55% of parents with sons were aware of the HPV vaccine. The

likelihood of parental awareness was lower among minorities and adolescents with low family incomes, and higher among adolescents with insurance, higher parental education, and those who had a well-child check up and dental examination in the past year than their counterparts. Only 2.0% and 0.5% of 9–17 y old males initiated (≥ 1 dose) and completed (≥ 3 doses) the vaccine series, respectively. Adolescents with a Hispanic origin (odds ratio (OR) 2.03, 95% confidence interval (CI) 1.09–3.78), low family income (OR 2.89, 95% CI 1.48 -5.57), and history of influenza vaccination in the past year (OR 1.89, 95% CI 1.11 -3.22) were more likely than their counterparts to initiate the HPV vaccine. On the other hand, adolescents with private insurance (OR 0.44, 95% CI 0.20 -0.94) and those who had college educated parents (OR 0.45, 95% CI 0.22 -0.89) were less likely to initiate the vaccine. This study showed that very few adolescent males received any doses of HPV vaccine during the first year following its recommendation for this gender. Thus, interventional programs are needed to improve vaccine uptake among adolescent males.

COMMENTARIES

Vaccination for typhoid fever in Sub-Saharan Africa

Rachel B. Slayton, Kashmira A. Date and Eric D. Mintz

http://dx.doi.org/10.4161/hv.23007

Abstract:

New data on the epidemiologic, clinical and microbiologic aspects of typhoid fever in sub-Saharan Africa call for new strategies and new resources to bring the regional epidemic under control. Areas with endemic disease at rates approaching those in south Asia have been identified; large, prolonged and severe outbreaks are occurring more frequently; and resistance to antimicrobial agents, including fluoroquinolones is increasing. Surveillance for typhoid fever is hampered by the lack of laboratory resources for rapid diagnosis, culture confirmation and antimicrobial susceptibility testing. Nonetheless, in 2010, typhoid fever was estimated to cause 725 incident cases and 7 deaths per 100,000 person years in sub-Saharan Africa. Efforts for prevention and outbreak control are challenged by limited access to safe drinking water and sanitation and by a lack of resources to initiate typhoid immunization. A comprehensive approach to typhoid fever prevention including laboratory and epidemiologic capacity building, investments in water, sanitation and hygiene and reconsideration of the role of currently available vaccines could significantly reduce the disease burden. Targeted vaccination using currently available typhoid vaccines should be considered as a short- to intermediate-term risk reduction strategy for high-risk groups across sub-Saharan Africa.

COMMENTARIES

Effects of exercise on vaccine-induced immune responses

Kate M. Edwards and Robert Booy

http://dx.doi.org/10.4161/hv.23365

Abstract:

The role of exercise in health is well known; here we discuss the specific role of exercise in vaccination responses. Chronic exercise or high levels of physical activity have been shown to be related to improved vaccination responses in older adults, illustrating improved immune function, and conferring potentially significant public health benefit. Acute exercise has recently been examined as a potential adjuvant to vaccination; its promise for clinical use warrants further investigation, given current data.

RESEARCH PAPERS

Determinants of influenza vaccination uptake among Italian healthcare workers

Pamela Barbadoro, Anna Marigliano, Elena Di Tondo, Carlos Chiatti, Francesco Di Stanislao, Marcello M. D'Errico and Emilia Prospero
http://dx.doi.org/10.4161/hv.22997
Abstract:

We analyzed seasonal influenza vaccination coverage among the Italian healthcare workers (HCW) in order to identify socio-demographic and clinical determinants of vaccination.

We used data from the survey "Health and health care use in Italy," which comprised interviews of 5,336 HCWs For each respondent, information on socioeconomic, health conditions, self-perceived health and smoking status were obtained. After bivariate analysis, we used multilevel regression models to assess determinants of immunization. Overall 20.8% of HCWs (95%CI 19.7–21.9) reported being vaccinated against seasonal influenza.

After controlling for potential confounders, multilevel regression revealed that older workers have a higher likelihood of vaccine uptake (OR = 6.07; 95% CI 4.72–7.79). Conversely, higher education was associated with lower vaccine uptake (OR = 0.65; 95% IC 0.50–0.83). Those suffering from diabetes (OR = 2.07; 95% CI 1.19–1.69), COPD (OR = 1.95; 95% CI 1.31–2.89) and cardiovascular diseases (OR = 1.48 95% CI 1.11–1.96) were more likely to be vaccinated. Likewise, smokers, or former smokers receive more frequently the vaccination (OR = 1.40; 95% CI 1.15–1.70; OR = 1.54; 95% CI 1.24–1.91, respectively) compared with never-smokers as well as those HCWs reporting fair or poor perceived health status (ORs of 1.68, 95% CI 1.30–2.18).

Vaccine coverage among HCWs in Italy remains low, especially among those with no comorbidities and being younger than 44 y old. This behavior not only raises questions regarding healthcare organization, infection control in healthcare settings and clinical costs, but also brings up ethical issues concerning physicians who seem not to be very concerned about the impact of the flu on themselves, as well as on their patients. Influenza vaccination campaigns will only be effective if HCWs understand their role in influenza transmission and prevention, and realize the importance of vaccination as a preventive measure.

SPECIAL FOCUS MEETING REPORTS - World Vaccine Congress 2012

Challenges and impact of conducting vaccine trials in Asia and Africa: New Technologies in Emerging Markets, October 16th-18th 2012; World Vaccine Congress, Lyon

Sonali Kochhar
http://dx.doi.org/10.4161/hv.23405
Abstract:

Immunization is one of the most beneficial and cost-effective disease prevention measures. There are global efforts to develop new vaccines for disease control. The vaccine clinical trials must be conducted in the countries where they will be used. This has led to vaccine trials being conducted across Asia and Africa where there is a high burden of infectious diseases. The setup and successful conduct of International standard GCP vaccine trials across trial centers located in resource constrained settings are challenging. The challenges, ethical considerations and impact of the implementation of clinical trials in low-resource settings are highlighted here to help vaccine development programs successfully conduct such trials.

Infectious Diseases of Poverty

http://www.idpjournal.com/content
[Accessed 6 April 2013]
[No new relevant content]

International Journal of Epidemiology
Volume 42 Issue 1 February 2013
http://ije.oxfordjournals.org/content/current
[Reviewed earlier]

International Journal of Infectious Diseases
Vol 17 | No. 4 | April 2013
http://www.ijidonline.com/current
[Reviewed earlier; No relevant content]

JAMA
April 03, 2013, Vol 309, No. 13
http://jama.ama-assn.org/current.dtl
Viewpoint | ONLINE FIRST
Ushering in a New Era of Open Science Through Data Sharing The Wall Must Come Down
Joseph S. Ross, MD, MHS; Harlan M. Krumholz, MD, SM
JAMA. 2013;309(13):1355-1356. doi:10.1001/jama.2013.1299.
http://jama.jamanetwork.com/article.aspx?articleid=1668313
Excerpt
It may appear that the clinical research enterprise is functioning well, even thriving. Nearly 30 000 trials globally are recruiting patients,1 and results from 75 trials are published daily in biomedical journals.2 However, there is a crisis, with an attendant opportunity, that requires change. A wall surrounds much of these clinical research data, sequestering knowledge, impeding the free flow of information, and obscuring a clear view of the totality of evidence relevant to many research questions and clinical decisions…
Original Contribution
Effect of an Investigational Vaccine for Preventing Staphylococcus aureus Infections After Cardiothoracic Surgery: A Randomized Trial
Vance G. Fowler, MD, MHS; Keith B. Allen, MD; Edson D. Moreira, MD, MPH, PhD; Moustafa Moustafa, MD; Frank Isgro, MD; Helen W. Boucher, MD; G. Ralph Corey, MD; Yehuda Carmeli, MD; Robert Betts, MD; Jonathan S. Hartzel, PhD; Ivan S. F. Chan, PhD; Tessie B. McNeely, PhD; Nicholas A. Kartsonis, MD; Dalya Guris, MD; Matthew T. Onorato, BS; Steven S. Smugar, MD; Mark J. DiNubile, MD; Ajoke Sobanjo-ter Meulen, MD, MSc
JAMA. 2013;309(13):1368-1378. doi:10.1001/jama.2013.3010.
http://jama.jamanetwork.com/article.aspx?articleid=1674236
ABSTRACT
Importance Infections due to Staphylococcus aureus are serious complications of cardiothoracic surgery. A novel vaccine candidate (V710) containing the highly conserved S aureus iron surface determinant B is immunogenic and generally well tolerated in volunteers.

Objective To evaluate the efficacy and safety of preoperative vaccination in preventing serious postoperative S aureus infection in patients undergoing cardiothoracic surgery.

Design, Setting, and Participants Double-blind, randomized, event-driven trial conducted between December 2007 and August 2011 among 8031 patients aged 18 years or older who

were scheduled for full median sternotomy within 14 to 60 days of vaccination at 165 sites in 26 countries.

Intervention Participants were randomly assigned to receive a single 0.5-mL intramuscular injection of either V710 vaccine, 60 µg (n = 4015), or placebo (n = 4016).

Main Outcome Measures The primary efficacy end point was prevention of S aureus bacteremia and/or deep sternal wound infection (including mediastinitis) through postoperative day 90. Secondary end points included all S aureus surgical site and invasive infections through postoperative day 90. Three interim analyses with futility assessments were planned.

Results The independent data monitoring committee recommended termination of the study after the second interim analysis because of safety concerns and low efficacy. At the end of the study, the V710 vaccine was not significantly more efficacious than placebo in preventing either the primary end points (22/3528 V710 vaccine recipients [2.6 per 100 person-years] vs 27/3517 placebo recipients [3.2 per 100 person-years]; relative risk, 0.81; 95% CI, 0.44-1.48; P = .58) or secondary end points despite eliciting robust antibody responses. Compared with placebo, the V710 vaccine was associated with more adverse experiences during the first 14 days after vaccination (1219/3958 vaccine recipients [30.8%; 95% CI, 29.4%-32.3%] and 866/3967 placebo recipients [21.8%; 95% CI, 20.6%-23.1%], including 797 [20.1%; 95% CI, 18.9%-21.4%] and 378 [9.5%; 95% CI, 8.6%-10.5%] with injection site reactions and 66 [1.7%; 95% CI, 1.3%-2.1%] and 51 [1.3%; 95% CI, 1.0%-1.7%] with serious adverse events, respectively) and a significantly higher rate of multiorgan failure during the entire study (31 vs 17 events; 0.9 [95% CI, 0.6-1.2] vs 0.5 [95% CI, 0.3-0.8] events per 100 person-years; P = .04). Although the overall incidence of vaccine-related serious adverse events (1 in each group) and the all-cause mortality rate (201/3958 vs 177/3967; 5.7 [95% CI, 4.9-6.5] vs 5.0 [95% CI, 4.3-5.7] deaths per 100 person-years; P = .20) were not statistically different between groups, the mortality rate in patients with staphylococcal infections was significantly higher among V710 vaccine than placebo recipients (15/73 vs 4/96; 23.0 [95% CI, 12.9-37.9] vs 4.2 [95% CI, 1.2-10.8] per 100 person-years; difference, 18.8 [95% CI, 8.0-34.1] per 100 person-years).

Conclusions and Relevance Among patients undergoing cardiothoracic surgery with median sternotomy, the use of a vaccine against S aureus compared with placebo did not reduce the rate of serious postoperative S aureus infections and was associated with increased mortality among patients who developed S aureus infections. These findings do not support the use of the V710 vaccine for patients undergoing surgical interventions.

Trial Registration clinicaltrials.gov Identifier: NCT00518687

JAMA Pediatrics
April 2013, Vol 167, No. 4
http://archpedi.jamanetwork.com/issue.aspx
[No relevant content]

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Volume 38, Issue 2, April 2013
http://link.springer.com/journal/10900/38/2/page/1
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Volume 27 issue 2 - Published: 2013
http://www.emeraldinsight.com/journals.htm?issn=1477-7266&show=latest
[Reviewed earlier; No relevant content]

Journal of Infectious Diseases
Volume 207 Issue 9 May 1, 2013
http://www.journals.uchicago.edu/toc/jid/current
[Reviewed earlier; No relevant content]

Journal of Global Infectious Diseases (JGID)
January-March 2013 Volume 5 | Issue 1 Page Nos. 1-36
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[Reviewed earlier; No relevant content]

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April 2013, Volume 39, Issue 4
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[Reviewed earlier]

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April 2013; 62 (Pt 4)
http://jmm.sgmjournals.org/content/current
[Reviewed earlier]

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Volume 2 Issue 1 March 2013
http://jpids.oxfordjournals.org/content/current
[Reviewed earlier]

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April 2013, Vol. 162, No. 4
http://www.jpeds.com/
[Reviewed earlier]

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April 2013, volume 87, issue 8
http://jvi.asm.org/content/current
[Reviewed earlier; No relevant content]

The Lancet

Apr 06, 2013 Volume 381 Number 9873 p1157 - 1246
http://www.thelancet.com/journals/lancet/issue/current

Health in Europe

Health services for children in western Europe

Ingrid Wolfe, Matthew Thompson, Peter Gill, Giorgio Tamburlini, Mitch Blair, Ann van den Bruel, Jochen Ehrich, Massimo Pettoello-Mantovani, Staffan Janson, Marina Karanikolos, Martin McKee

Summary

Western European health systems are not keeping pace with changes in child health needs. Non-communicable diseases are increasingly common causes of childhood illness and death. Countries are responding to changing needs by adapting child health services in different ways and useful insights can be gained through comparison, especially because some have better outcomes, or have made more progress, than others. Although overall child health has improved throughout Europe, wide inequities remain. Health services and social and cultural determinants contribute to differences in health outcomes. Improvement of child health and reduction of suffering are achievable goals. Development of systems more responsive to evolving child health needs is likely to necessitate reconfiguring of health services as part of a whole-systems approach to improvement of health. Chronic care services and first-contact care systems are important aspects. The Swedish and Dutch experiences of development of integrated systems emphasise the importance of supportive policies backed by adequate funding. France, the UK, Italy, and Germany offer further insights into chronic care services in different health systems. First-contact care models and the outcomes they deliver are highly variable. Comparisons between systems are challenging. Important issues emerging include the organisation of first-contact models, professional training, arrangements for provision of out-of-hours services, and task-sharing between doctors and nurses. Flexible first-contact models in which child health professionals work closely together could offer a way to balance the need to provide expertise with ready access. Strategies to improve child health and health services in Europe necessitate a whole-systems approach in three interdependent systems—practice (chronic care models, first-contact care, competency standards for child health professionals), plans (child health indicator sets, reliable systems for capture and analysis of data, scale-up of child health research, anticipation of future child health needs), and policy (translation of high-level goals into actionable policies, open and transparent accountability structures, political commitment to delivery of improvements in child health and equity throughout Europe).

Migration and health in an increasingly diverse Europe

Bernd Rechel, Philipa Mladovsky, David Ingleby, Johan P Mackenbach, Martin McKee

Summary

The share of migrants in European populations is substantial and growing, despite a slowdown in immigration after the global economic crisis. This paper describes key aspects of migration and health in Europe, including the scale of international migration, available data for migrant health, barriers to accessing health services, ways of improving health service provision to migrants, and migrant health policies that have been adopted across Europe. Improvement of migrant health and provision of access for migrants to appropriate health services is not without challenges, but knowledge about what steps need to be taken to achieve these aims is increasing.

The Lancet Infectious Diseases

Apr 2013 Volume 13 Number 4 p277 - 376
http://www.thelancet.com/journals/laninf/issue/current

[Reviewed earlier]

Medical Decision Making (MDM)
April 2013; 33 (3)
http://mdm.sagepub.com/content/current
Special Issue: Health Technology Assessment to Inform Policy
[Reviewed earlier]

The Milbank Quarterly
A Multidisciplinary Journal of Population Health and Health Policy
March 2013 Volume 91, Issue 1 Pages 1–218
http://onlinelibrary.wiley.com/doi/10.1111/milq.2013.91.issue-1/issuetoc
[Reviewed earlier]

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March 2013 - Volume 20 / Number 03
http://www.afhsc.mil/viewMSMR?file=2013/v20_n02.pdf#Page=01
Mid-season influenza vaccine effectiveness for the 2012-2013 influenza season

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Volume 496 Number 7443 pp5-132 4 April 2013
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[No relevant content]

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April 2013, Volume 14 No 4 pp307-413
http://www.nature.com/ni/journal/v14/n4/index.html
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Nature Medicine
April 2013, Volume 19 No 4 pp379-505
http://www.nature.com/nm/journal/v19/n4/index.html
Community Corner
Bettering BCG: a tough task for a TB vaccine?
Nature Medicine 19, 410–411 (2013)
doi:10.1038/nm.3153
Published online 04 April 2013
[Authors unlisted on Excerpt page]
Excerpt
Despite the existence of the BCG (Bacille Calmette-Guerin) vaccine, tuberculosis remains a substantial global health problem. One issue with BCG is that although it effectively protects

against disseminated tuberculosis in young children, it shows only variable protection against pulmonary tuberculosis. Thus, there is an ongoing quest for new tuberculosis vaccines that…

Nature Reviews Immunology
April 2013 Vol 13 No 4
http://www.nature.com/nri/journal/v13/n4/index.html
[No relevant content]

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April 4, 2013 Vol. 368 No. 14
http://www.nejm.org/toc/nejm/medical-journal
[No relevant content]

OMICS: A Journal of Integrative Biology
March 2013, 17(3)
http://online.liebertpub.com/toc/omi/17/3
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Revista Panamericana de Salud Pública/Pan American Journal of Public Health (RPSP/PAJPH)
February 2013 Vol. 33, No. 2
http://new.paho.org/journal/index.php?option=com_content&task=view&id=120&Itemid=221
Special Section on Equity in Health Systems
[Articles on equity themes in the region, and specifically in Brazil, Chile, Columbia, Jamaica, Mexico and Peru]

The Pediatric Infectious Disease Journal
April 2013 - Volume 32 - Issue 4 pp: A15-A16,307-429,e128-e181
http://journals.lww.com/pidj/pages/currenttoc.aspx
[Reviewed earlier]

Pediatrics
April 2013, VOLUME 131 / ISSUE 4
http://pediatrics.aappublications.org/current.shtml
Monthly Feature
Global Burden of Childhood Diarrhea and Pneumonia: What Can and Should Be Done?
Zulfiqar A. Bhutta, MBBS, FRCP, FRCPCH, FAAP, PhD and Jai Kumar Das, MB, BS, MBA
Introductory Commentary
Although significant success has occurred in combating the huge number of young children who die each year of common preventable and treatable infectious diseases, many millions still die because of the lack of simple and inexpensive interventions. Dr Bhutta has focused his global

health discussion on the massive potential gains by specific targeted efforts on decreasing 2 leading causes, pneumonia and diarrhea. The costs to young lives and the detrimental societal effects of these 2 infectious diseases alone are immense. Dr Bhutta also appropriately points out that greater political will and collaboration among nations will speed up progress in achieving child survival targets as agreed upon in the established Millennium Development Goals. Clearly, pediatricians everywhere should take a strong leadership role in pressing this agenda.
—Jay E. Berkelhamer, MD, FAAP; Editor, Global Health Monthly Feature
Extract
Children represent the future of any nation, and it is a societal responsibility to ensure their health, growth, and development. A major goal among the Millennium Development Goals (MDGs) agreed upon by 190 countries at the Millennium Summit in September 2000 was MDG4 with the specific target of reducing under 5 child deaths by two-thirds, from the 1990 baseline, by the year 2015.
Despite considerable progress over the last decade and an average reduction in child mortality of over 2.5 million deaths annually, the rate of reduction is still too slow in many countries to enable them to reach their MDG4 targets.1 In 2011, ~6.9 million children under 5 years old died, recording a decrease of 5.1 million from the estimated child mortality in 1990.2 The highest rates of child mortality continue to be concentrated in sub-Saharan Africa and South Asia (83%) and with wide variations in the coverage of interventions and high birth rates, this gap may continue to widen. These inequities …
http://pediatrics.aappublications.org/content/131/4/634.extract

Waning Immunity to Pertussis Following 5 Doses of DTaP
Sara Y. Tartof, Melissa Lewis, Cynthia Kenyon, Karen White, Andrew Osborn, Juventila Liko, Elizabeth Zell, Stacey Martin, Nancy E. Messonnier, Thomas A. Clark, and Tami H. Skoff
Pediatrics 2013; 131:e1047-e1052
http://pediatrics.aappublications.org/content/131/4/e1047.abstract
Abstract
OBJECTIVE: To assess the risk of pertussis by time since vaccination in children in Minnesota and Oregon who received 5 doses of acellular pertussis vaccines (DTaP).
METHODS: These cohort analyses included Minnesota and Oregon children born between 1998 and 2003 who had 5 DTaP doses recorded in state Immunization Information Systems. Immunization records and statewide pertussis surveillance data were combined. Incidence rates and risk ratios for pertussis were calculated for the 6 years after receipt of the fifth DTaP dose.
RESULTS: The cohorts included 224 378 Minnesota children and 179 011 from Oregon; 458 and 89 pertussis cases were identified in Minnesota and Oregon, respectively. Pertussis incidence rates rose each year of follow-up: 15.6/100 000 (95% confidence interval [CI]: 11.1–21.4) at year 1 to 138.4/100 000 (CI: 113.3–166.9) at year 6 (Minnesota); 6.2/100 000 (CI: 3.3–10.6) in year 1 to 24.4/100 000 (CI: 15.0–37.8) in year 6 (Oregon). Risk ratios increased from 1.9 (CI: 1.3–2.9) in year 2 to 8.9 (CI: 6.0–13.0) in year 6 (Minnesota) and from 1.3 (CI: 0.6–2.8) in year 2 to 4.0 (CI: 1.9–8.4) in year 6 (Oregon).
CONCLUSIONS: This evaluation reports steady increase in risk of pertussis in the years after completion of the 5-dose DTaP series. This rise is likely attributable in part to waning immunity from DTaP vaccines. Continuing to monitor disease burden and vaccine effectiveness in fully vaccinated children in coming years will be important to assess ongoing risk as additional cohorts vaccinated solely with acellular pertussis vaccines are introduced.

Effect of Rotavirus Vaccine on Diarrhea Mortality in Different Socioeconomic Regions of Mexico

Paul A. Gastañaduy, Edgar Sánchez-Uribe, Marcelino Esparza-Aguilar, Rishi Desai, Umesh D. Parashar, Manish Patel, and Vesta Richardson
Pediatrics 2013; 131:e1115-e1120
http://pediatrics.aappublications.org/content/131/4/e1115.abstract
Abstract
OBJECTIVE: In Mexico, declines in childhood diarrhea deaths have been documented during 2008–2010 after rotavirus vaccine introduction in 2007. Because of concerns about variation in rotavirus vaccine efficacy by socioeconomic status, we compared reductions in diarrhea mortality in the lesser developed southern region versus the more developed northern and central regions of Mexico.
METHODS: We obtained data from national vital statistics on diarrhea deaths among children aged <5 years from 2002 through 2011. We compared region-specific diarrhea mortality before (2003–2006) and after (2009–2011) vaccine introduction. Regional vaccine coverage was estimated from administrative data, and socioeconomic status was assessed by using the Human Development Index.
RESULTS: In northern, central, and southern Mexico, the 2007 Human Development Index was 0.84, 0.82, and 0.77, respectively, and by 2010 an estimated 99%, 84%, and 89% of children aged <12 months had completed rotavirus vaccination. Diarrhea mortality among children <5 years old declined from 8.3, 17.9, and 28.5 deaths per 100 000 children during 2003–2006 to 4.5, 8.1, and 16.2 in 2009–2011 in northern, central, and southern Mexico, respectively, corresponding to rate reductions of 45%, 55%, and 43%. No significant differences were observed in rate reductions between regions (P > .8).
CONCLUSIONS: After introduction of rotavirus vaccination, marked and sustained declines in diarrhea deaths were seen among children in all regions of Mexico, including in the least developed southern region with the highest baseline diarrhea mortality. This finding indicates equitable vaccine delivery to children with varying risk of mortality and reaffirms the beneficial effects of rotavirus vaccination against fatal diarrheal disease.

Cost-effectiveness of Augmenting Universal Hepatitis B Vaccination With Immunoglobin Treatment

Solomon Chih-Cheng Chen, Mehlika Toy, Jennifer M. Yeh, Jung-Der Wang, and Stephen Resch
Pediatrics 2013; 131:e1135-e1143
http://pediatrics.aappublications.org/content/131/4/e1135.abstract
Abstract
OBJECTIVE: To compare the cost-effectiveness of hepatitis B virus (HBV) control strategies combining universal vaccination with hepatitis B immunoglobulin (HBIG) treatment for neonates of carrier mothers.
METHODS: Drawing on Taiwan's experience, we developed a decision-analytic model to estimate the clinical and economic outcomes for 4 strategies: (1) strategy V—universal vaccination; (2) strategy S—V plus screening for hepatitis B surface antigen (HBsAg) and HBIG treatment for HBsAg-positive mothers' neonates; (3) strategy E—V plus screening for hepatitis B e-antigen (HBeAg), HBIG for HBeAg-positive mothers' neonates; (4) strategy S&E—V plus screening for HBsAg then HBeAg, HBIG for all HBeAg-positive, and some HBeAg-negative/HBsAg-positive mothers' neonates.
RESULTS: Strategy S averted the most infections, followed by S&E, E, and V. In most cases, the more effective strategies were also more costly. The willingness-to-pay (WTP) above which strategy S was cost-effective rose as carrier rate declined and was <$4000 per infection averted for carrier rates >5%. The WTP below which strategy V was optimal also increased as carrier

rate declined, from $1400 at 30% carrier rate to $3100 at 5% carrier rate. Strategies involving E were optimal for an intermediate range of WTP that narrowed as carrier rate declined. CONCLUSIONS: HBIG treatment for neonates of HBsAg carrier mothers is likely to be a cost-effective addition to universal vaccination, particularly in settings with adequate health care infrastructure. Targeting HBIG to neonates of higher risk HBeAg-positive mothers may be preferred where WTP is moderate. However, in very resource-limited settings, universal vaccination alone is optimal.

Reasons for Not Vaccinating Adolescents: National Immunization Survey of Teens, 2008–2010

Paul M. Darden, David M. Thompson, James R. Roberts, Jessica J. Hale, Charlene Pope, Monique Naifeh, and Robert M. Jacobson
Pediatrics 2013; 131:645-651
http://pediatrics.aappublications.org/content/131/4/645.abstract

Abstract
OBJECTIVE: To determine the reasons adolescents are not vaccinated for specific vaccines and how these reasons have changed over time.
METHODS: We analyzed the 2008–2010 National Immunization Survey of Teens examining reasons parents do not have their teens immunized. Parents whose teens were not up to date (Not-UTD) for Tdap/Td and MCV4 were asked the main reason they were not vaccinated. Parents of female teens Not-UTD for human papillomavirus vaccine (HPV) were asked their intent to give HPV, and those unlikely to get HPV were asked the main reason why not.
RESULTS: The most frequent reasons for not vaccinating were the same for Tdap/Td and MCV4, including "Not recommended" and "Not needed or not necessary." For HPV, the most frequent reasons included those for the other vaccines as well as 4 others, including "Not sexually active" and "Safety concerns/Side effects." "Safety concerns/Side effects" increased from 4.5% in 2008 to 7.7% in 2009 to 16.4% in 2010 and, in 2010, approaching the most common reason "Not Needed or Not Necessary" at 17.4% (95% CI: 15.7–19.1). Although parents report that health care professionals increasingly recommend all vaccines, including HPV, the intent to not vaccinate for HPV increased from 39.8% in 2008 to 43.9% in 2010 (OR for trend 1.08, 95% CI: 1.04–1.13).
CONCLUSIONS: Despite doctors increasingly recommending adolescent vaccines, parents increasingly intend not to vaccinate female teens with HPV. The concern about safety of HPV grew with each year. Addressing specific and growing parental concerns about HPV will require different considerations than those for the other vaccines.

Pharmaceutics
Volume 5, Issue 1 (March 2013)
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Volume 31, Issue 4, April 2013
http://link.springer.com/journal/40273/31/4/page/1
[Reviewed earlier]

PLoS One
[Accessed 6 April 2013]
http://www.plosone.org/
Did Advances in Global Surveillance and Notification Systems Make a Difference in the 2009 H1N1 Pandemic?–A Retrospective Analysis
Ying Zhang, Hugo Lopez-Gatell, Celia M. Alpuche-Aranda, Michael A. Stoto
Research Article | published 03 Apr 2013 | PLOS ONE 10.1371/journal.pone.0059893
Abstract
Background
The 2009 H1N1 outbreak provides an opportunity to identify strengths and weaknesses of disease surveillance and notification systems that have been implemented in the past decade.
Methods
Drawing on a systematic review of the scientific literature, official documents, websites, and news reports, we constructed a timeline differentiating three kinds of events: (1) the emergence and spread of the pH1N1 virus, (2) local health officials' awareness and understanding of the outbreak, and (3) notifications about the events and their implications. We then conducted a "critical event" analysis of the surveillance process to ascertain when health officials became aware of the epidemiologic facts of the unfolding pandemic and whether advances in surveillance notification systems hastened detection.
Results
This analysis revealed three critical events. First, medical personnel identified pH1N1in California children because of an experimental surveillance program, leading to a novel viral strain being identified by CDC. Second, Mexican officials recognized that unconnected outbreaks represented a single phenomenon. Finally, the identification of a pH1N1 outbreak in a New York City high school was hastened by awareness of the emerging pandemic. Analysis of the timeline suggests that at best the global response could have been about one week earlier (which would not have stopped spread to other countries), and could have been much later.
Conclusions
This analysis shows that investments in global surveillance and notification systems made an important difference in the 2009 H1N1 pandemic. In particular, enhanced laboratory capacity in the U.S. and Canada led to earlier detection and characterization of the 2009 H1N1. This includes enhanced capacity at the federal, state, and local levels in the U.S., as well as a trilateral agreement enabling collaboration among U.S., Canada, and Mexico. In addition, improved global notification systems contributed by helping health officials understand the relevance and importance of their own information.

PLoS Medicine
(Accessed 6 April 2013)
http://www.plosmedicine.org/
Policy Forum
Big Data Opportunities for Global Infectious Disease Surveillance
Simon I. Hay, Dylan B. George, Catherine L. Moyes, John S. Brownstein
http://www.plosmedicine.org/article/info%3Adoi%2F10.1371%2Fjournal.pmed.1001413
Summary Points
- Systems to provide static spatially continuous maps of infectious disease risk and continually updated reports of infectious disease occurrence exist but to-date the two have never been combined.

- Novel online data sources, such as social media, combined with epidemiologically relevant environmental information are valuable new data sources that can assist the "real-time" updating of spatial maps.
- Advances in machine learning and the use of crowd sourcing open up the possibility of developing a continually updated atlas of infectious diseases.
- Freely available dynamic infectious disease risk maps would be valuable to a wide range of health professionals from policy makers prioritizing limited resources to individual clinicians.

PLoS Neglected Tropical Diseases
March 2013
http://www.plosntds.org/article/browseIssue.action
[Reviewed earlier]

PNAS - Proceedings of the National Academy of Sciences of the United States of America
(Accessed 6 April 2013)
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[No new relevant content]

Public Health Ethics
Volume 6 Issue 1 April 2013
http://phe.oxfordjournals.org/content/current
[Reviewed earlier]

Qualitative Health Research
May 2013; 23 (5)
http://qhr.sagepub.com/content/current
Implications of the Virginia Human Papillomavirus Vaccine Mandate for Parental Vaccine Acceptance
Margaret Jane Pitts, Kimberly Adams Tufts
http://qhr.sagepub.com/content/23/5/605.abstract
Abstract
In 2009, Virginia became the first state in the United States to enact a school vaccine mandate for the human papillomavirus (HPV), putting it at the forefront of the national HPV vaccine mandate controversy. It is critical to explore the public response and sensemaking where the mandate has already been enacted. Thus, we conducted 8 focus group discussions among 33 Virginia parents to explore how they conceptualized the virus and vaccine and their responses to the mandate. Findings suggest that many parents are skeptical of and reluctant to follow a state-mandated vaccine requirement, choosing instead to opt out of the vaccine until they decide the time is right for their daughter and/or until they feel confident in their knowledge about the virus, vaccine, and the impetus for the mandate. Study results can inform future legislation among states considering HPV-related mandates and aid in the development of health-promotion materials within the context of a state mandate.

Risk Analysis
April 2013 Volume 33, Issue 4 Pages 505–749
http://onlinelibrary.wiley.com/doi/10.1111/risa.2013.33.issue-4/issuetoc
Special Issue Theme: Poliovirus Eradication
Introduction
Modeling Poliovirus Risks and the Legacy of Polio Eradication (pages 505–515)
Kimberly M. Thompson
Article first published online: 28 MAR 2013 | DOI: 10.1111/risa.12030
This introduction to the special issue on modeling poliovirus risks provides context about historical efforts to manage polioviruses and reviews the insights from models developed to support risk management and policy development. Following an overview of the contents of the special issue, the introduction explores the road ahead and offers perspective on the legacy of polio eradication.
Original Research Articles
Preeradication Vaccine Policy Options for Poliovirus Infection and Disease Control (pages 516–543)
Kimberly M. Thompson, Mark A. Pallansch, Radboud J. Duintjer Tebbens, Steve G. Wassilak, Jong-Hoon Kim and Stephen L. Cochi
Article first published online: 5 MAR 2013 | DOI: 10.1111/risa.12019
Abstract
With the circulation of wild poliovirus (WPV) types 1 and 3 continuing more than a decade after the original goal of eradicating all three types of WPVs by 2000, policymakers consider many immunization options as they strive to stop transmission in the remaining endemic and outbreak areas and prevent reintroductions of live polioviruses into nonendemic areas. While polio vaccination choices may appear simple, our analysis of current options shows remarkable complexity. We offer important context for current and future polio vaccine decisions and policy analyses by developing decision trees that clearly identify potential options currently used by countries as they evaluate national polio vaccine choices. Based on a comprehensive review of the literature we (1) identify the current vaccination options that national health leaders consider for polio vaccination, (2) characterize current practices and factors that appear to influence national and international choices, and (3) assess the evidence of vaccine effectiveness considering sources of variability between countries and uncertainties associated with limitations of the data. With low numbers of cases occurring globally, the management of polio risks might seem like a relatively low priority, but stopping live poliovirus circulation requires making proactive and intentional choices to manage population immunity in the remaining endemic areas and to prevent reestablishment in nonendemic areas. Our analysis shows remarkable variability in the current national polio vaccine product choices and schedules, with combination vaccine options containing inactivated poliovirus vaccine and different formulations of oral poliovirus vaccine making choices increasingly difficult for national health leaders.
Expert Review on Poliovirus Immunity and Transmission (pages 544–605)
Radboud J. Duintjer Tebbens, Mark A. Pallansch, Konstantin M. Chumakov, Neal A. Halsey, Tapani Hovi, Philip D. Minor, John F. Modlin, Peter A. Patriarca, Roland W. Sutter, Peter F. Wright, Steven G. F. Wassilak, Stephen L. Cochi, Jong-Hoon Kim and Kimberly M. Thompson
Article first published online: 15 JUL 2012 | DOI: 10.1111/j.1539-6924.2012.01864.x
Abstract

Successfully managing risks to achieve wild polioviruses (WPVs) eradication and address the complexities of oral poliovirus vaccine (OPV) cessation to stop all cases of paralytic poliomyelitis depends strongly on our collective understanding of poliovirus immunity and transmission. With increased shifting from OPV to inactivated poliovirus vaccine (IPV), numerous risk management choices motivate the need to understand the tradeoffs and uncertainties and to develop models to help inform decisions. The U.S. Centers for Disease Control and Prevention hosted a meeting of international experts in April 2010 to review the available literature relevant to poliovirus immunity and transmission. This expert review evaluates 66 OPV challenge studies and other evidence to support the development of quantitative models of poliovirus transmission and potential outbreaks. This review focuses on characterization of immunity as a function of exposure history in terms of susceptibility to excretion, duration of excretion, and concentration of excreted virus. We also discuss the evidence of waning of host immunity to poliovirus transmission, the relationship between the concentration of poliovirus excreted and infectiousness, the importance of different transmission routes, and the differences in transmissibility between OPV and WPV. We discuss the limitations of the available evidence for use in polio risk models, and conclude that despite the relatively large number of studies on immunity, very limited data exist to directly support quantification of model inputs related to transmission. Given the limitations in the evidence, we identify the need for expert input to derive quantitative model inputs from the existing data.

Review and Assessment of Poliovirus Immunity and Transmission: Synthesis of Knowledge Gaps and Identification of Research Needs (pages 606–646)

Radboud J. Duintjer Tebbens, Mark A. Pallansch, Konstantin M. Chumakov, Neal A. Halsey, Tapani Hovi, Philip D. Minor, John F. Modlin, Peter A. Patriarca, Roland W. Sutter, Peter F. Wright, Steven G.F. Wassilak, Stephen L. Cochi, Jong-Hoon Kim and Kimberly M. Thompson

Article first published online: 28 MAR 2013 | DOI: 10.1111/risa.12031

Abstract

With the intensifying global efforts to eradicate wild polioviruses, policymakers face complex decisions related to achieving eradication and managing post eradication risks. These decisions and the expanding use of inactivated poliovirus vaccine (IPV) trigger renewed interest in poliovirus immunity, particularly the role of mucosal immunity in the transmission of polioviruses. Sustained high population immunity to poliovirus transmission represents a key prerequisite to eradication, but poliovirus immunity and transmission remain poorly understood despite decades of studies. In April 2010, the U.S. Centers for Disease Control and Prevention convened an international group of experts on poliovirus immunology and virology to review the literature relevant for modeling poliovirus transmission, develop a consensus about related uncertainties, and identify research needs. This article synthesizes the quantitative assessments and research needs identified during the process. Limitations in the evidence from oral poliovirus vaccine (OPV) challenge studies and other relevant data led to differences in expert assessments, indicating the need for additional data, particularly in several priority areas for research: (1) the ability of IPV-induced immunity to prevent or reduce excretion and affect transmission, (2) the impact of waning immunity on the probability and extent of poliovirus excretion, (3) the relationship between the concentration of poliovirus excreted and infectiousness to others in different settings, and (4) the relative role of fecal-oral versus oropharyngeal transmission. This assessment of current knowledge supports the immediate conduct of additional studies to address the gaps.

Modeling Population Immunity to Support Efforts to End the Transmission of Live Polioviruses (pages 647–663)

Kimberly M. Thompson, Mark A. Pallansch, Radboud J. Duintjer Tebbens, Steve G. Wassilak and Stephen L. Cochi
Article first published online: 17 SEP 2012 | DOI: 10.1111/j.1539-6924.2012.01891.x
Abstract
Eradication of wild poliovirus (WPV) types 1 and 3, prevention and cessation of circulating vaccine-derived polioviruses, and achievement and maintenance of a world free of paralytic polio cases requires active risk management by focusing on population immunity and coordinated cessation of oral poliovirus vaccine (OPV). We suggest the need for a complementary and different conceptual approach to achieve eradication compared to the current case-based approach using surveillance for acute flaccid paralysis (AFP) to identify symptomatic poliovirus infections. Specifically, we describe a modeling approach to characterize overall population immunity to poliovirus transmission. The approach deals with the realities that exposure to live polioviruses (e.g., WPV, OPV) and/or vaccination with inactivated poliovirus vaccine provides protection from paralytic polio (i.e., disease), but does not eliminate the potential for reinfection or asymptomatic participation in poliovirus transmission, which may increase with time because of waning immunity. The AFP surveillance system provides evidence of symptomatic poliovirus infections detected, which indicate immunity gaps after outbreaks occur, and this system represents an appropriate focus for controlling disease outbreaks. We describe a conceptual dynamic model to characterize population immunity to poliovirus transmission that helps identify risks created by immunity gaps before outbreaks occur, which provides an opportunity for national and global policymakers to manage the risk of poliovirus and prevent outbreaks before they occur. We suggest that dynamically modeling risk represents an essential tool as the number of cases approaches zero.
World Health Organization Regional Assessments of the Risks of Poliovirus Outbreaks (pages 664–679)
Sara A. Lowther, Sigrun Roesel, Patrick O'Connor, Mauricio Landaverde, George Oblapenko, Sergei Deshevoi, Goel Ajay, Ann Buff, Hala Safwat, Mbaye Salla, Rudi Tangermann, Nino Khetsuriani, Rebecca Martin and Steven Wassilak
Article first published online: 23 MAR 2013 | DOI: 10.1111/risa.12032
Abstract
While global polio eradication requires tremendous efforts in countries where wild polioviruses (WPVs) circulate, numerous outbreaks have occurred following WPV importation into previously polio-free countries. Countries that have interrupted endemic WPV transmission should continue to conduct routine risk assessments and implement mitigation activities to maintain their polio-free status as long as wild poliovirus circulates anywhere in the world. This article reviews the methods used by World Health Organization (WHO) regional offices to qualitatively assess risk of WPV outbreaks following an importation. We describe the strengths and weaknesses of various risk assessment approaches, and opportunities to harmonize approaches. These qualitative assessments broadly categorize risk as high, medium, or low using available national information related to susceptibility, the ability to rapidly detect WPV, and other population or program factors that influence transmission, which the regions characterize using polio vaccination coverage, surveillance data, and other indicators (e.g., sanitation), respectively. Data quality and adequacy represent a challenge in all regions. WHO regions differ with respect to the methods, processes, cut-off values, and weighting used, which limits comparisons of risk assessment results among regions. Ongoing evaluation of indicators within regions and further harmonization of methods between regions are needed to effectively plan risk mitigation activities in a setting of finite resources for funding and continued WPV circulation.

Oral Poliovirus Vaccine Evolution and Insights Relevant to Modeling the Risks of Circulating Vaccine-Derived Polioviruses (cVDPVs) (pages 680–702)

Radboud J. Duintjer Tebbens, Mark A. Pallansch, Jong-Hoon Kim, Cara C. Burns, Olen M. Kew, M. Steven Oberste, Ousmane M. Diop, Steven G.F. Wassilak, Stephen L. Cochi and Kimberly M. Thompson

Article first published online: 7 MAR 2013 | DOI: 10.1111/risa.12022

Abstract

The live, attenuated oral poliovirus vaccine (OPV) provides a powerful tool for controlling and stopping the transmission of wild polioviruses (WPVs), although the risks of vaccine-associated paralytic polio (VAPP) and circulating vaccine-derived poliovirus (cVDPV) outbreaks exist as long as OPV remains in use. Understanding the dynamics of cVDPV emergence and outbreaks as a function of population immunity and other risk factors may help to improve risk management and the development of strategies to respond to possible outbreaks. We performed a comprehensive review of the literature related to the process of OPV evolution and information available from actual experiences with cVDPV outbreaks. Only a relatively small fraction of poliovirus infections cause symptoms, which makes direct observation of the trajectory of OPV evolution within a population impractical and leads to significant uncertainty. Despite a large global surveillance system, the existing genetic sequence data largely provide information about transmitted virulent polioviruses that caused acute flaccid paralysis, and essentially no data track the changes that occur in OPV sequences as the viruses transmit largely asymptomatically through real populations with suboptimal immunity. We updated estimates of cVDPV risks based on actual experiences and identified the many limitations in the existing data on poliovirus transmission and immunity and OPV virus evolution that complicate modeling. Modelers should explore the space of potential model formulations and inputs consistent with the available evidence and future studies should seek to improve our understanding of the OPV virus evolution process to provide better information for policymakers working to manage cVDPV risks.

Characterizing Poliovirus Transmission and Evolution: Insights from Modeling Experiences with Wild and Vaccine-Related Polioviruses (pages 703–749)

Radboud J. Duintjer Tebbens, Mark A. Pallansch, Dominika A. Kalkowska, Steven G. F. Wassilak, Stephen L. Cochi and Kimberly M. Thompson

Article first published online: 22 MAR 2013 | DOI: 10.1111/risa.12044

Abstract

With national and global health policymakers facing numerous complex decisions related to achieving and maintaining polio eradication, we expanded our previously developed dynamic poliovirus transmission model using information from an expert literature review process and including additional immunity states and the evolution of oral poliovirus vaccine (OPV). The model explicitly considers serotype differences and distinguishes fecal-oral and oropharyngeal transmission. We evaluated the model by simulating diverse historical experiences with polioviruses, including one country that eliminated wild poliovirus using both OPV and inactivated poliovirus vaccine (IPV) (USA), three importation outbreaks of wild poliovirus (Albania, the Netherlands, Tajikistan), one situation in which no circulating vaccine-derived polioviruses (cVDPVs) emerge despite annual OPV use and cessation (Cuba), three cVDPV outbreaks (Haiti, Madura Island in Indonesia, northern Nigeria), one area of current endemic circulation of all three serotypes (northern Nigeria), and one area with recent endemic circulation and subsequent elimination of multiple serotypes (northern India). We find that when sufficient information about the conditions exists, the model can reproduce the general behavior of poliovirus transmission and outbreaks while maintaining consistency in the generic

model inputs. The assumption of spatially homogeneous mixing remains a significant limitation that affects the performance of the differential equation-based model when significant heterogeneities in immunity and mixing may exist. Further studies on OPV virus evolution and improved understanding of the mechanisms of mixing and transmission may help to better characterize poliovirus transmission in populations. Broad application of the model promises to offer insights in the context of global and national policy and economic models.

Science
5 April 2013 vol 340, issue 6128, pages 1-108
http://www.sciencemag.org/current.dtl
[No relevant content]

Science Translational Medicine
3 April 2013 vol 5, issue 179
http://stm.sciencemag.org/content/current
INNOVATION
Cell-Based Therapeutics: The Next Pillar of Medicine
Michael A. Fischbach, Jeffrey A. Bluestone, and Wendell A. Lim
3 April 2013: 179ps7
http://stm.sciencemag.org/content/5/179/179ps7.abstract
Abstract
Two decades ago, the pharmaceutical industry—long dominated by small-molecule drugs—was revolutionized by the advent of biologics. Today, biomedicine sits on the cusp of a new revolution: the use of microbial and human cells as versatile therapeutic engines. Here, we discuss the promise of this "third pillar" of therapeutics in the context of current scientific, regulatory, economic, and perceptual challenges. History suggests that the advent of cellular medicines will require the development of a foundational cellular engineering science that provides a systematic framework for safely and predictably altering and regulating cellular behaviors.

Social Science & Medicine
Volume 82, Pages 1-164 (April 2013)
http://www.sciencedirect.com/science/journal/02779536/82
[Reviewed earlier]

Vaccine
http://www.sciencedirect.com/science/journal/0264410X

Volume 31, Issue 18, Pages 2215-2322 (26 April 2013)
Qualitative responses to a national physician survey on HPV vaccination
Original Research Article
Pages 2267-2272
Susan T. Vadaparampil, Devin Murphy, Maria Rodriguez, Teri L. Malo, Gwendolyn P. Quinn
Abstract

Background
Independently offered comments on a physician survey may reveal new insight into physician recommendations for human papillomavirus (HPV) vaccination to their patients. The current study is a follow-up to a previous report of free-response comments and describes remarks from the second of two surveys regarding physicians' HPV vaccine recommendation practices. A secondary objective was to investigate comments specific to male HPV vaccination, which was FDA approved after the first survey was completed.
Methods
In 2011, a mailed survey assessing physicians' HPV-related knowledge, attitudes, and vaccination practices was conducted among a national sample of U.S. primary care physicians, including Family Physicians, Pediatricians, and Obstetricians/Gynecologists. Comments were analyzed using grounded theory and content analysis.
Findings
Of 928 completed surveys received, 134 participants provided comments, which were coded into four overall categories: 1) the survey process, 2) personal strategy for discussing HPV vaccine, 3) clinical practice guidelines preference, and 4) barriers to vaccine administration. Twenty-six comments were specific to males, with 17 physicians stating they did not recommend HPV vaccine to males. Physicians also cited the need for more information about HPV vaccine safety and efficacy for males.
Interpretation
Respondents used the open-ended portion of the survey to reemphasize issues that were most important to them and to offer insight about the vaccine and survey process.
Funding
This study was funded by a grant from the National Institutes of Health (R01AI076440-01).

Costs of, and reimbursement for, vaccines: A case study at the Board of Health Refugee Services in DeKalb county, Georgia

Original Research Article
Pages 2317-2322
Kenji Adachi, Margaret S. Coleman, Christopher de la Motte Hurst, Monica L. Vargas, Alawode Oladele, Michelle S. Weinberg
Abstract
Background
Approximately 70,000 refugees are resettled to the United States each year. Providing vaccination to arriving refugees is important to both reduce the health-related barriers to successful resettlement, and protect the health of communities where refugees resettle. It is crucial to understand the process and resources expended at the state/local and federal government levels to provide vaccinations to refugees resettling to the United States.
Objectives
We estimated costs associated with delivering vaccines to refugees at the Board of Health Refugee Services, DeKalb county, Georgia (DeKalb clinic).
Methods
Vaccination costs were estimated from two perspectives: the federal government and the DeKalb clinic. Data were collected at the DeKalb clinic regarding resources used for vaccination: staff numbers and roles; type and number of vaccine doses administered; and number of patients. Clinic costs included labor and facility-related overhead. The federal government incurred costs for vaccine purchases and reimbursements for vaccine administration.
Results

The DeKalb clinic average cost to administer the first dose of vaccine was $12.70, which is lower than Georgia Medicaid reimbursement ($14.81), but higher than the State of Georgia Refugee Health Program reimbursement ($8.00). Federal government incurred per-dose costs for vaccine products and administrative reimbursement were $42.45 (adults) and $46.74 (children).
Conclusions
The total costs to the DeKalb clinic for administering vaccines to refugees are covered, but with little surplus. Because the DeKalb clinic 'breaks even,' it is likely they will continue to vaccinate refugees as recommended by the Centers for Disease Control and Prevention and the Advisory Committee on Immunization Practices.

Vaccine
Volume 31, Issue 17, Pages 2109-2214 (19 April 2013)
Challenges in comparing the safety of different vaccination schedules
Original Research Article
Pages 2126-2129
Michael L. Jackson
Abstract
As vaccine hesitancy has increased in the United States, various authors have begun proposing alternatives to the Advisory Committee on Immunization Practices' recommended childhood immunization schedule. Because parents may believe the safety claims made by such authors, evaluations of the safety of alternative vaccination schedules are needed. However, comparing the safety of different vaccination schedules has numerous methodologic challenges. These challenges include defining vaccination history, defining safety, appropriately modeling interactions between vaccines, and appropriately handling age effects. Failure to properly address these challenges can result in biased results.
Cost effectiveness analysis of elementary school-located vaccination against influenza—Results from a randomized controlled trial
Original Research Article
Pages 2156-2164
Byung-Kwang Yoo, Sharon G. Humiston, Peter G. Szilagyi, Stanley J. Schaffer, Christine Long, Maureen Kolasa
Abstract
School-located vaccination against influenza (SLV-I) has been suggested to help meet the need for annual vaccination of large numbers of school-aged children with seasonal influenza vaccine. However, little is known about the cost and cost-effectiveness of SLV-I. We conducted a cost-analysis and a cost-effectiveness analysis based on a randomized controlled trial (RCT) of an SLV-I program implemented in Monroe County, New York during the 2009–2010 vaccination season. We hypothesized that SLV-I is more cost effective, or less-costly, compared to a conventional, office-located influenza vaccination delivery. First and second SLV-I clinics were offered in 21 intervention elementary schools (n = 9027 children) with standard of care (no SLV-I) in 11 control schools (n = 4534 children). The direct costs, to purchase and administer vaccines, were estimated from our RCT. The effectiveness measure, receipt of ≥1 dose of influenza vaccine, was 13.2 percentage points higher in SLV-I schools than control schools. The school costs ($9.16/dose in 2009 dollars) plus project costs ($23.00/dose) plus vendor costs excluding vaccine purchase ($19.89/dose) was higher in direct costs ($52.05/dose) than the previously reported mean/median cost [$38.23/$21.44 per dose] for providing influenza vaccination in pediatric practices. However SLV-I averted parent costs to visit medical practices

($35.08 per vaccine). Combining direct and averted costs through Monte Carlo Simulation, SLV-I costs were $19.26/dose in net costs, which is below practice-based influenza vaccination costs. The incremental cost-effectiveness ratio (ICER) was estimated to be $92.50 or $38.59 (also including averted parent costs). When additionally accounting for the costs averted by disease prevention (i.e., both reduced disease transmission to household members and reduced loss of productivity from caring for a sick child), the SLV-I model appears to be cost-saving to society, compared to "no vaccination". Our findings support the expanded implementation of SLV-I, but also the need to focus on efficient delivery to reduce direct costs.

Cincinnati pediatricians' measured and reported immunizing behavior for children during the national shortages of pneumococcal conjugate vaccine

Original Research Article

Pages 2177-2183

Gerry Fairbrother, Stephanie Donauer, Mary Allen Staat, Karen Broder, Shelia Salisbury, Ardythe L. Morrow, Meredith E. Tabangin, Mekibib Altaye, Michol Holloway, Benjamin Schwartz

Abstract

Background

The United States has experienced two shortages of heptavalent pneumococcal conjugate vaccine (PCV7). National guidelines called for deferring the third and fourth PCV7 doses from healthy children during these shortages. However, recommendations were not the same during the first and second shortages, and recommendations changed over time during each of the shortages as shortages worsened.

Objectives

To measure PCV7 immunizing behavior for healthy children during shortage and non-shortage periods and assess the accuracy of the physicians' reported immunizing behavior when compared to their actual immunizing behavior.

Methods

We reviewed medical records in 14 randomly selected practices to measure actual immunizing behavior during shortage and non-shortage periods. We surveyed pediatricians in the Greater Cincinnati area to ascertain reported immunizing behavior. Actual and reported immunizing behaviors were compared.

Results

2888 medical records were reviewed; surveys were obtained from 51 pediatricians (65% response rate). During periods of non-shortage, 74% of healthy children received their first two doses of PCV7 on time, whereas during periods of shortage, only 66% of healthy children received their first two doses of PCV7 on time. Compared with measured immunizing behavior from chart reviews, 54–76% of the pediatricians overestimated their compliance with guidelines to defer the fourth PCV7 dose while only 5–20% underestimated their compliance.

Conclusions

Physicians often overestimated the percentage of children whose vaccine doses they deferred during vaccine shortages. Despite these findings, physicians were able to maintain high coverage with the first two PCV7 doses among healthy children.

A survey on human papillomavirus awareness and acceptance of vaccination among nursing students in a tertiary hospital in Ankara, Turkey

Original Research Article

Pages 2191-2195

Özlem Uzunlar, Şebnem Özyer, Eralp Başer, Cihan Toğrul, Müjdegül Karaca, Tayfun Güngör

Abstract

Objective

The purpose of this study was to assess the awareness and knowledge regarding human papillomavirus (HPV), HPV related conditions and HPV vaccine among nursing students, and to identify their attitudes towards HPV vaccination.
Materials and methods
The study was carried out at a tertiary Women's Health Care Center in Ankara, Turkey. Self-administered questionnaires were filled out individually by the nursing students and by a control group including similar aged women. Data regarding demographic information, knowledge and awareness about HPV infection and HPV vaccine, attitudes towards vaccination, acceptance of HPV vaccine and assessment of HPV vaccination attitudes of the nurses with respect to the gender of their children was assessed and recorded.
Results
A total of 752 participants was included in the analysis. Five hundred and twenty (69.14%) of the participants were nursing students and the rest (n = 232; 30.8%) were control group. The mean ages of the nursing students and the control group were 19.4 (16–27) and 19.4 (16–25) years, respectively. Majority of the nursing students knew the causal relationship between HPV and cervical cancer. Seventy-eight percent of the nursing students and 22.4% of the control group stated that they had heard of HPV vaccine. While the rate of the willingness to be vaccinated was 33.7% in the nursing student group, it was only 13.4% in the control group.
Conclusion
The awareness and knowledge about HPV, its relation with cervical cancer and prevention of cervical cancer by HPV vaccine were favorable among nursing students at a tertiary hospital in Ankara, Turkey. However, although aware of the theoretical implications, they did not seem to apply it to practice, such as not having regular gynecologic examinations and Pap smears. Thus, further studies are needed to evaluate the factors that affect practical applications of health care professionals responsible for providing health education to the public.

Vaccine: Development and Therapy
(Accessed 6 April 2013)
http://www.dovepress.com/vaccine-development-and-therapy-journal
[No new relevant content]

Value in Health
Vol 16 | No. 2 | March-April 2013 | Pages 229-452
http://www.valueinhealthjournal.com/current
[Reviewed earlier]

From Google Scholar & other sources: Selected Journal Articles, Dissertations, Theses

The Cost-Effectiveness Analysis of a Quadrivalent Human Papillomavirus Vaccine (6/11/16/18) for Females in Japan
K Yamabe, PK Singhal, M Abe, EJ Dasbach… - Value in Health Regional …, 2013

Objective We assessed the epidemiological and economic impact of a quadrivalent human papillomavirus (HPV)(6/11/16/18) vaccine for females in preventing cervical cancer, cervical intraepithelial neoplasia grades 2 and 3 (CIN 2/3), cervical intraepithelial neoplasia grade ...

National Vaccine Prevention Plan (PNPV) 2012-2014 in the Italian Regions].
C Carlino, L Zaratti, G Lucciola, E Franco - Igiene e sanità pubblica, 2013
Seven years after the previous National Vaccines Plan (PNV) 2005-2007 the new PNPV 2012-2014 was ratified with the approval of both National and Regional Authorities in February 22, 2012. The implementation state of the new Plan at 31/12/2012 was ...

[HTML] **Challenges in the research and development of new human vaccines**
T Barbosa, M Barral-Netto - Brazilian Journal of Medical and Biological Research, 2013
... The literature tends to focus more often on vaccine research problems associated with specific
pathogens, but it is increasingly clear that there are common bottlenecks in vaccine research, which need to be solved in order to advance the development of the field as a whole. ...

Screening for Hepatitis B
D Tarrant, J Block, B McMahon - The Journal for Nurse Practitioners, 2013
... Keywords. chronic; disease management; hepatitis B; liver; liver cancer; screening. Chronic infection with the hepatitis B virus (HBV) remains a serious public health problem in the United States, despite the availability of an effective vaccine and universal infant vaccination. ...

[PDF] **Community knowledge, attitude and practice of childhood immunization in Southwest Nigeria: Data from a Paediatric Association of Nigeria town hall meeting.**
CI Esezobor, N Lagos, MR Balogun, M Mukhtar-Yola… - Niger J Paed, 2013
... Esangbedo DO Paediatrics Unit, Providence Hospital, Lagos, Nigeria Abstract Background: Vaccine preventable diseases account for 22% of under-five deaths in Nigeria and poor knowledge and attitude have been responsible for non-vaccination of children. ...

LIVE, ORAL VACCINE FOR PROTECTION AGAINST SHIGELLA DYSENTERIAE SEROTYPE 1
DJ Kopecko - US Patent 20,130,078,274, 2013
Abstract: The invention relates to Salmonella typhi Ty21a comprising core-linked Shigella dysenteriae serotype 1 O-specific polysaccharide (O-Ps) and DNA encoding O antigen biosynthesis, said DNA selected from the group consisting of: a) the DNA sequence set ...

Media/Policy Watch

Beginning in June 2012, *Vaccines: The Week in Review* expanded to alert readers to substantive news, analysis and opinion from the general media on vaccines, immunization, global; public health and related themes. *Media Watch* is not intended to be exhaustive, but indicative of themes and issues CVEP is actively tracking. This section will grow from an initial base of newspapers, magazines and blog sources, and is segregated from *Journal Watch* above which scans the peer-reviewed journal ecology.

We acknowledge the Western/Northern bias in this initial selection of titles and invite suggestions for expanded coverage. We are conservative in our outlook of adding news sources

which largely report on primary content we are already covering above. Many electronic media sources have tiered, fee-based subscription models for access. We will provide full-text where content is published without restriction, but most publications require registration and some subscription level.

The Atlantic
http://www.theatlantic.com/magazine/
Accessed 6 April 2013
[No new, unique, relevant content]

BBC
http://www.bbc.co.uk/
Accessed 6 April 2013
Swansea measles epidemic: Parents urged to vaccinate children [U.K.]
865 measles cases. Most of the more than 580 people affected in Wales are school-age children who have not had the MMR jab. Vaccine uptake in…

Brookings
http://www.brookings.edu/
Accessed 6 April 2013
[No new, unique, relevant content]

Economist
http://www.economist.com/
Accessed 6 April 2013
[No new, unique, relevant content]

Financial Times
http://www.ft.com
Accessed 6 April 2013
April 5, 2013
Shanghai bans trading of live poultry
...Control and Prevention said it has begun working with international agencies to prepare a vaccine if needed. It said commercial production of a vaccine would take five to six months and would reduce production of ordinary flu vaccines. The spread... By Jamil Anderlini in Wuhan
☐ April 5, 2013
US starts work on new bird flu vaccine
...of bird flu and has started work on a vaccine just in case it is needed. So far...may be necessary to start producing a vaccine. The infections in China mark the first...could be used by manufacturers to make a vaccine. Because the agency is using artificial...

Forbes
http://www.forbes.com/
Accessed 6 April 2013
[No new, unique, relevant content]

Foreign Affairs
http://www.foreignaffairs.com/

Accessed 6 April 2013
Essay
Own the Goals
By John W. McArthur
Since their inception in 2000, The Millennium Development Goals have revolutionized the global aid business, using specific targets to help mobilize and guide development efforts. They have encouraged world leaders to tackle multiple dimensions of poverty simultaneously and provided a standard for judging performance. As their 2015 expiration looms, the time has come to bank those successes and focus on what comes next.

Foreign Policy
http://www.foreignpolicy.com/
Accessed 6 April 2013
Is This a Pandemic Being Born?
1 April 2013
by Laurie Garrett
Here's how it would happen. Children playing along an urban river bank would spot hundreds of grotesque, bloated pig carcasses bobbing downstream. Hundreds of miles away, angry citizens would protest the rising stench from piles of dead ducks and swans, their rotting bodies collecting by the thousands along river banks. And three unrelated individuals would stagger into three different hospitals, gasping for air. Two would quickly die of severe pneumonia and the third would lay in critical condition in an intensive care unit for many days. Government officials would announce that a previously unknown virus had sickened three people, at least, and killed two of them. And while the world was left to wonder how the pigs, ducks, swans, and people might be connected, the World Health Organization would release deliberately terse statements, offering little insight…

The Guardian
http://www.guardiannews.com/
Accessed 6 April 2013
Global development
Battling Pakistan militants' ban on polio vaccines in North Waziristan
2 Apr 2013
IRIN, part of the Guardian development network
Parents and officials are going to dangerous lengths to immunise children after militants imposed a ban on polio vaccinations
…Battling Pakistan militants' ban on polio vaccines in North Waziristan … affiliated with the ban, and parents are travelling long distances to get their children vaccinated, in some cases smuggling the vaccine back home. Abdul Hassan* emerged recently from the district hospital in Bannu, just outside North Waziristan…
Global development
India makes inroads on polio as mosques spread the word | Esha Chhabra
2 Apr 2013
Health workers in Aligarh are overcoming cultural mistrust about polio immunisation by turning to local Muslim clerics for support. Esha Chhabra reports
… by a fellow Unicef health worker, she walks briskly in her billowing black burqa from house to house, the blue ice chest (which keeps the vaccine cool) in her colleague's hand. Having worked for the polio campaign for nine years, she knows these neighbourhoods…

The Huffington Post
http://www.huffingtonpost.com/
Accessed 6 April 2013
[No new, unique, relevant content]

Le Monde
http://www.lemonde.fr/
Accessed 6 April 2013
[No new, unique, relevant content]

New Yorker
http://www.newyorker.com/
Accessed 6 April 2013
[No new, unique, relevant content]

NPR/National Public Radio [U.S.]
Public Health
Accessed 6 April 2013
[No new, unique, relevant content]

New York Times
http://www.nytimes.com/
Accessed 6 April 2013
April 5, 2013
China Escalates Its Response to Outbreak of Avian Flu
http://www.nytimes.com/2013/04/06/world/asia/china-escalates-response-to-avian-flu-outbreak.html?_r=0

Reuters
http://www.reuters.com/
Accessed 6 April 2013
RPT-World experts debate case for new bird flu vaccine
Fri Apr 5, 2013 4:57am EDT
- Experts in daily talks on risks posed by new China virus
- Researchers analysing samples to find vaccine candidate
- Decision to make vaccine depends on whether H7N9 spreads
By Ben Hirschler and Kate Kelland
http://www.reuters.com/article/2013/04/05/health-birdflu-vaccine-repeat-idUSL5N0CR3DZ20130405

Wall Street Journal
http://online.wsj.com/home-page
Accessed 6 April 2013
[No new, unique, relevant content]

Washington Post
http://www.washingtonpost.com/

Accessed 6 April 2013

The Post's View

A promising and difficult plan to end polio

By Editorial Board, Published: April 3

THE WORLD witnessed only 223 polio cases last year, the lowest level in history and an impressive advance from the hundreds of thousands of children afflicted as recently as the 1980s. However, the eradication quest is not over, and the next steps look difficult. The Global Polio Eradication Initiative, an umbrella group, has unveiled a promising strategy over the next five years to reach zero cases, the elusive goal first set a quarter-century ago.

The polio virus is highly contagious, can spread rapidly and remains endemic in Pakistan, Afghanistan and Nigeria. In Pakistan, 15 health workers in the anti-polio campaign have been killed since July, and a World Health Organization official estimated that 240,000 children have missed vaccinations in the tribal areas because of security concerns. In Nigeria, killed this year. In both countries, the workers were killed by militants who hold wrongheaded notions that vaccinations are some kind of Western plot. In fact, the danger is not in the vaccination but in the virus, which affects the nervous system and can lead to paralysis, largely among children age 5 and younger. Any effort to conquer polio is going to have to fully protect those carrying out the vaccination campaigns.

Wiping out a disease is an extraordinary accomplishment; it has been done only once before, with smallpox. Yet as polio case numbers plunge, the task of complete eradication grows harder. The oral polio vaccine, which contains a live, weakened virus, has been key to the dramatic progress in reducing cases. But on very rare occasions, the virus strain in the oral vaccine has reverted to a paralytic one and begun to circulate. Earlier, it was a tolerable risk, but now it must be stopped. The new global strategy involves a switch to an inactivated vaccine that can attack the circulating virus. This requires a shot, not just an oral drop. While the oral dose costs about 20 cents apiece, the inactivated one costs a dollar or more. The switch to the inactivated virus is an important firewall against a further outbreak, but it won't be easy and must go hand in hand with strong, routine immunization to prevent the virus from returning.

The five-year strategy is estimated to cost $5.5 billion from varied sources, according to the eradication initiative, a partnership spearheaded by the WHO, Rotary International, the Centers for Disease Control and Prevention and UNICEF with support from the Bill & Melinda Gates Foundation. Instead of trying to raise money year to year, the new strategy calls for gathering up the total at the outset. This will be difficult in an era of budget austerity, but there have been some promising new private sources of funds, including $100 million recently pledged by New York Mayor and publishing magnate Michael Bloomberg.

Hopes for wiping out polio globally have been raised by the achievement of India, now free of the virus. But success is not assured and demands a fight to the finish.

http://www.washingtonpost.com/opinions/a-promising-and-difficult-plan-to-end-polio/2013/04/03/ce0953b0-9bdb-11e2-9bda-edd1a7fb557d_story.html

Twitter Watch (discontinued…to be re-evaluated in 90 days)

Editor's Note: We continue to follow the twitter feeds of a wide variety of organizations and institutions, but our observation is that twitter is functioning primarily (for our purposes) as a sentinel system, confirming availability of content we already capture for *Vaccines: The Week in Review*. We will continue to use twitter for this purpose and re-evaluate whether *Twitter Watch* can add important value to this weekly digest in 90 days.

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Vaccines: The Week in Review *is a service of the Center for Vaccines Ethics and Policy (CVEP) which is solely responsible for its content. Support for this service is provided by its governing institutions – Department of Medical Ethics, NYU Medical School; The Wistar Institute Vaccine Center and the Children's Hospital of Philadelphia Vaccine Education Center. Additional support is provided by PATH Vaccine Development Program and the International Vaccine Institute (IVI), and by vaccine industry leaders including GSK, Pfizer, and sanofi pasteur (list in formation), as well as the Developing Countries Vaccine Manufacturers Network (DCVMN). Support is also provided by a growing list of individuals who use this service to support their roles in public health, clinical practice, government, NGOs and other international institutions, academia and research organizations, and industry.*

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