Center for Vaccine Ethics and Policy
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Vaccines: The Week in Review
4 August 2012
Center for Vaccine Ethics & Policy (CVEP)

This weekly summary targets news, announcements, articles and events in global vaccines ethics and policy gathered 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, and 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 3,000 entries..

Comments and suggestions should be directed to
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WHO: Disease Outbreak News – Ebola Virus

3 August 2012

Ebola in Uganda – update

3 August 2012 -- Experts continue the fight to control the Ebola haemorrhagic outbreak in western Uganda. The outbreak, now in its second week, has claimed at least 16 lives out of 53 cases reported. Ebola is caused by one of the most virulent pathogens known to humankind. WHO is supporting the screening of patients, follow-up of contacts and surveillance, providing personal protection suits and essential equipment, as well as social mobilization and education activities.

29 July 2012

Ebola in Uganda

Transcript: CDC Telebriefing: Influenza A (H3N2) Variant Virus

August 3, 2012

Extract

"…This is Joe Bresee at the flu division at CDC. Today I'm going to give you a quick update on an increase in the number of cases of influenza A H3N2 variant virus because on August 3rd, today, CDC's FluView U.S. weekly influenza surveillance report, announced 12 new cases of H3N2 variant virus infection from three different states: Hawaii, Indiana and Ohio. The virus was first detected in humans late last summer, July of 2011 and since July 12th, 2011, there have been 29 total cases of H3N2 variant virus infection detected, including the 16 cases occurring in the last three weeks. Twenty-nine cases of infection with this H3N2 virus since the fall of 2011 is a significant increase in the number of detections for these types of virus we've seen in recent years. All 29

cases were infected with H3N2v viruses that contain the matrix or M gene from the influenza A H1 pandemic virus. This M gene may confirm increased transmissibility to and among humans compared with other variant influenza viruses…

"…So a summary of the recent cases. Each of the recent 16 H3N2 variant cases reported in the last few weeks reported contact with swine prior to their illness onset. In 15 of these cases contact occurred while attending or exhibiting swine at agricultural fairs. All cases have been laboratory confirmed at CDC. While no human-to-human spread has been identified in recent cases, limited transmission from person to person is thought to have occurred on three occasions in the fall and winter of 2011. Importantly, sustained efficient community transmission of this virus, H3N2v virus has not been detected to date. Clinical symptoms of the H3N2 virus infections have been generally consistent with symptoms associated with seasonal influenza virus, such as fever, cough, sore throat, muscle aches and headache. No hospitalizations or deaths have occurred from the 16 confirmed cases but three cases were hospitalized among those detected last year in 2011. All of those hospitalizations occurred among people with underlying diseases that put them at high risk for severe influenza infection. Of the 16 recent cases, 13 of the cases are among children and three are among adults. This is similar to the ages of the cases in 2011 and early 2012 that comprise the whole 29 and it actually is consistent with data from research studies that indicate that children may be more susceptible to the infection than adults…

"…CDC, along with state and local health departments and our colleagues in animal health will continue to monitor for these cases and provide information on how to prevent them. Because influenza viruses are always evolving, we will watch closely for signs that the virus has gained an increased capacity for efficient and sustained human-to-human transmission. Thus far we have not seen this type of transmission and therefore are not seeing features consistent with the earlier influenza pandemic. Even so, the H3N2 variant virus vaccine has been prepared or the candidate has been prepared in clinical trials are being planned for this year. So in summary, while sporadic cases of this variant virus have been observed for many years -- variant viruses have been observed for many years, we've detected cases of this variant virus with increasing frequency over the last year, particularly in the last month. We expect that additional cases of human infection with H3N2v virus will be identified either from contact with infected swine or through subsequent limited human-to-human spread, we also expect that some of the cases might be severe…"

GAVI reported that, "in the face of a severe humanitarian crisis, the government of Yemen will introduce rotavirus vaccine, supported by GAVI and its partners, with an aim to vaccinate the one million children born each year. Prof. Ahmad Qasim Al-A'nsi, Minister of Public Health and Population of Yemen, commented, "These tools are vital if we want to protect the children of Yemen from such deadly diseases. We aim to reach all children of Yemen especially in remote communities." http://www.gavialliance.org/library/news/press-releases/2012/yemen-introduces-rotavirus-vaccines/

NIAID Director Anthony Fauci, speaking at the annual meeting of the NIAID's Centers of Excellence for Influenza Research and Surveillance (CEIRS), reportedly said that a voluntary moratorium on H5N1 transmission experiments aimed should continue for the time being, but that scientists "should redouble their efforts to engage with the larger public to gain support for the vital but risky work." Dr. Fauci is quoted as saying "The flu scientific community can no longer be the only player in the discussion about this research. You will unquestionably lose the battle for public support for your research if you ignore this issue."
http://news.sciencemag.org/scienceinsider/2012/07/us-infectious-disease-chief-urge.html

UN Secretary-General Ban Ki-moon announced the members of a High-level Panel to advise on the global development agenda beyond 2015, the target date for the Millennium Development Goals. The panel includes 26 members representing government, civil society, and the private sector. Three co-Chairs will lead the panel: President Susilo Bambang Yudhoyono of Indonesia; President Ellen Johnson Sirleaf of Liberia; and Prime Minister David Cameron of the United Kingdom. The full list of Panel members is available below. The Secretary-General noted, "I have asked my High-level Panel to prepare a bold yet practical development vision to present to Member States next year. I look forward to the Panel's recommendations on a global post-2015 agenda with shared responsibilities for all countries and with the fight against poverty and sustainable development at its core." The Panel will hold its first meeting at the end of September and is expected to submit a report to the Secretary-General in the first half of 2013. Member States "have called for open, inclusive consultations involving civil society, the private sector, academia and research institutions from all regions, in addition to the United Nations system, to advance the development agenda beyond 2015."
http://www.un.org/News/Press/docs//2012/sga1364.doc.htm

IAVI (International AIDS Vaccine Initiative) announced the election of two new members to its Board of Directors: Alice P. Albright, Executive Vice President and Chief Operating Officer of the Export-Import Bank of the United States, and Dr. Purnima Mane, President and CEO of Pathfinder International. IAVI said "they join a diverse group of directors from 10 countries with backgrounds in finance, vaccinology, international development, academia and HIV treatment and prevention that oversees IAVI, evaluates its progress and shapes its long-term strategy." Margaret McGlynn, President and CEO of IAVI, commented, "I am pleased to welcome Alice and Purnima to IAVI's Board of Directors. They both bring to the organization a wealth of experience in global health and nonprofit management, and will no doubt provide strong strategic counsel to help guide IAVI in the coming years. A seasoned Board of Directors is essential to maintaining a successful global organization, and I am confident that Alice and Purnima will be vital members of this team."
http://www.businesswire.com/news/home/20120731006148/en/IAVI-Welcomes-Members-Board-Directors

The **Weekly Epidemiological Record (WER) for 3 August 2012**, vol. 87, 31/32 (pp. 289–304) includes: Cholera, 2011; WHO cholera information
http://www.who.int/entity/wer/2012/wer8731_32.pdf

Reports/Research/Analysis/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

No new relevant content.

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

Annals of Internal Medicine
17 July 2012, Vol. 157. No. 2
http://www.annals.org/content/current
[Reviewed earlier; No relevant content]

British Medical Bulletin
Volume 102 Issue 1 June 2012
http://bmb.oxfordjournals.org/content/current
[Reviewed earlier; No relevant content]

British Medical Journal
04 August 2012 (Vol 345, Issue 7868)
http://www.bmj.com/content/345/7868
Research

Cost effectiveness of vaccination against pandemic influenza in European countries: mathematical modelling analysis

BMJ 2012; 345 doi: 10.1136/bmj.e4445 (Published 12 July 2012)

Anna K Lugnér, researcher, Michiel van Boven, Robin de Vries, Maarten J Postma, Jacco Wallinga

Abstract

Objective

To investigate whether a single optimal vaccination strategy exists across countries to deal with a future influenza pandemic by comparing the cost effectiveness of different strategies in various pandemic scenarios for three European countries.

Design

Economic and epidemic modelling study.

Settings

General populations in Germany, the Netherlands, and the United Kingdom.

Data sources

Country specific patterns of social contact and demographic data.

Model

An age structured susceptible-exposed-infected-recovered transmission model that describes how an influenza A virus will spread in the populations of Germany, the Netherlands, and the United Kingdom.

Interventions

Comparison of four vaccination strategies: no vaccination, blanket vaccination, vaccination of elderly people (≥65 years), and vaccination of high transmitters (5-19 years). The four strategies were evaluated for scenarios in which a vaccine became available early or at the peak of the pandemic, and in which either everyone was initially susceptible or older age groups had pre-existing immunity.

Main outcome measure

Cost per quality adjusted life years (QALYs) gained.

Results

All vaccination strategies were cost effective (incremental cost per QALY gained, comparing intervention with non-intervention). In scenarios where the vaccine became available at the peak of the pandemic and there was pre-existing immunity among elderly people the incremental cost effectiveness ratios for vaccinating high transmitters were €7325 (£5815; $10 470) per QALY gained for Germany, €10 216 per QALY gained for the Netherlands, and €7280 per QALY gained for the United Kingdom. The most cost effective strategy not only differed across the pandemic scenarios but also between countries. Specifically, when the vaccine was available early in the pandemic and there was no pre-existing immunity, in Germany it would be most cost effective to vaccinate elderly people (€940 per QALY gained), whereas it would be most cost effective to vaccinate high transmitters in both the Netherlands (€525 per QALY gained) and the United Kingdom (€163 per QALY gained). This difference in optimal strategies was due to differences in the demographic characteristics of the countries: Germany has a significantly higher proportion of elderly people compared with the Netherlands and the United Kingdom.

Conclusions

No single vaccination strategy was most cost effective across countries. With aging populations, pre-existing immunity in particular could be of crucial importance for the cost effectiveness of options to mitigate a future influenza pandemic.

Bulletin of the World Health Organization
Volume 90, Number 8, August 2012, 557-632
http://www.who.int/bulletin/volumes/90/8/en/index.html

Editorials

Performance-based financing in low- and middle-income countries: still more questions than answers

- Atle Fretheim et al.

doi: 10.2471/BLT.12.106468

Extract

Performance-based financing is promoted as a promising strategy for improving health service delivery and helping to reach the Millennium Development Goals.1,2 But what is the evidence supporting its use?

Performance-based financing may be defined as "the transfer of money or material goods conditional on taking a measurable action or achieving a predetermined performance target".2 We recently conducted a Cochrane review of the available evidence on the effectiveness of performance-based financing in low- and middle-income countries.3 Nine studies, of which fewer than half had been published in scientific journals, fulfilled our inclusion criteria: one randomized controlled trial (RCT) and two interrupted time series conducted in Asia, and six controlled before–after studies conducted in Africa. Only two outcomes related to health care utilization – institutional deliveries and antenatal care – were assessed in more than one trial. Inconsistent results across studies made summarizing and interpreting the evidence difficult.

The most rigorous African study reported a moderate increase in institutional deliveries, from around 35% to 42% (i.e. 7 percentage points; 95% confidence interval, CI: 1–14).4 Findings from studies in Burundi,5 the Democratic Republic of the Congo6 and Rwanda7 showed disparate findings: one reported a significant increase in institutional deliveries, another found little or no change and the third showed a significant decrease. For these findings the risk of bias is high, partly because intervention and control areas were not randomly allocated and the same people who implemented the programmes also evaluated them. Two additional studies reporting on institutional deliveries were programme evaluations with a substantial risk of bias due to questionable data quality. The results on antenatal care attendance were also heterogeneous.

These findings clearly show that no general conclusion can be drawn regarding the likely impact of performance-based financing in low-and middle-income countries. For one thing, most of the studies found through the review were methodologically weak and had poor internal validity. Furthermore, since the impact of complex interventions such as performance-based financing depends largely on the context in which they are implemented, results may vary. Finally, the studies differed substantially in the way in which the performance-based financing scheme was designed and implemented…"

Sentinel versus population-based surveillance of pneumococcal conjugate vaccine effectiveness

Lee M Hampton, Elizabeth R Zell, Stephanie Schrag & Adam L Cohen

Abstract

Objective

To compare sentinel and population-based surveillance of the effect of seven-valent pneumococcal conjugate vaccine (PCV7), introduced in 2000, on the hospitalization of children aged under 5 years with invasive pneumococcal disease (IPD) in the United States of America.
Methods
Population surveillance data were used to identify children hospitalized between 1998 and 2006 with IPD caused by Streptococcus pneumoniae serotypes. The change from 1998 and 1999 (baseline) to 2006 in the number of hospitalized IPD cases recorded by sentinel surveillance systems involving single hospitals or groups of hospitals was compared with the change in the incidence of hospitalized IPD cases measured by population-based surveillance.
Findings
The change in incidence in the eight surveillance areas varied from −37 to −82% for IPD caused by any serotype and from −96 to −100% for IPD caused by serotypes contained in PCV7. All individual sentinel hospitals with more than three cases annually at baseline reported a decrease in cases by 2006. In addition, over 95% of sentinel systems with an average of more than 30 cases annually at baseline recorded a change by 2006 in the number of cases caused by any serotype that fell within the 95% confidence interval for the change in the incidence of hospitalized cases in the corresponding population surveillance area. The change in cases caused by PCV7 serotypes was accurately measured by 93% and 100% of sentinel systems with ≤ 20 and > 20 cases annually at baseline, respectively.
Conclusion
Sentinel surveillance can accurately measure the effect of PCV7 on the number of children hospitalized with IPD, provided sufficient cases are detected at baseline. Serotyping increases accuracy.

LESSONS FROM THE FIELD

Achieving high coverage in Rwanda's national human papillomavirus vaccination programme

Agnes Binagwaho, Claire M Wagner, Maurice Gatera, Corine Karema, Cameron T Nutt & Fidele Ngabo

Abstract
Problem
Virtually all women who have cervical cancer are infected with the human papillomavirus (HPV). Of the 275 000 women who die from cervical cancer every year, 88% live in developing countries. Two vaccines against the HPV have been approved. However, vaccine implementation in low-income countries tends to lag behind implementation in high-income countries by 15 to 20 years.
Approach
In 2011, Rwanda’s Ministry of Health partnered with Merck to offer the Gardasil HPV vaccine to all girls of appropriate age. The Ministry formed a “public–private community partnership” to ensure effective and equitable delivery.
Local setting
Thanks to a strong national focus on health systems strengthening, more than 90% of all Rwandan infants aged 12–23 months receive all basic immunizations recommended by the World Health Organization.
Relevant changes

In 2011, Rwanda's HPV vaccination programme achieved 93.23% coverage after the first three-dose course of vaccination among girls in grade six. This was made possible through school-based vaccination and community involvement in identifying girls absent from or not enrolled in school. A nationwide sensitization campaign preceded delivery of the first dose.
Lessons learnt
Through a series of innovative partnerships, Rwanda reduced the historical two-decade gap in vaccine introduction between high- and low-income countries to just five years. High coverage rates were achieved due to a delivery strategy that built on Rwanda's strong vaccination system and human resources framework. Following the GAVI Alliance's decision to begin financing HPV vaccination, Rwanda's example should motivate other countries to explore universal HPV vaccine coverage, although implementation must be tailored to the local context.

Cost Effectiveness and Resource Allocation
(Accessed 4 August 2012)
http://www.resource-allocation.com/
[No new relevant content]

Emerging Infectious Diseases
Volume 18, Number 8—August 2012
http://www.cdc.gov/ncidod/EID/index.htm
[Reviewed earlier]

Eurosurveillance
Volume 17, Issue 31, 02 August 2012
http://www.eurosurveillance.org/Public/Articles/Archives.aspx?PublicationId=11678
Rapid Communications
Did public health travel advice reach EURO 2012 football fans? A social network survey
by J Janiec, A Zielicka-Hardy, A Polkowska, J Rogalska, M Sadkowska-Todys
Perspectives
Infectious disease surveillance for the London 2012 Olympic and Paralympic Games
by E Severi, E Heinsbroek, C Watson, M Catchpole, HPA Olympics Surveillance Work Group
Surveillance and outbreak reports
A new surveillance system for undiagnosed serious infectious illness for the London 2012 Olympic and Paralympic Games
by E Heinsbroek, B Said, H Kirkbride, On behalf of the HPA USII Steering Group

Global Health Governance
Volume V, Issue 2: Spring 2012
[Reviewed earlier]

Globalization and Health
[Accessed 4 August 2012]
http://www.globalizationandhealth.com/
[No new relevant content]

Health Affairs
July 2012; Volume 31, Issue 7
http://content.healthaffairs.org/content/current
Theme: Assessing The President's Emergency Plan For AIDS Relief
[Reviewed earlier]

Health and Human Rights
Vol 14, No 1 (2012)
http://hhrjournal.org/index.php/hhr
[Reviewed earlier]

Health Economics, Policy and Law
Volume 7 - Issue 03 - July 2012
http://journals.cambridge.org/action/displayIssue?jid=HEP&tab=currentissue
[Reviewed earlier]

Health Policy and Planning
Volume 27 Issue 5 August 2012
http://heapol.oxfordjournals.org/content/current
[Reviewed earlier]

Human Vaccines & Immunotherapeutics (formerly Human Vaccines)
Volume 8, Issue 8 August 2012
http://www.landesbioscience.com/journals/vaccines/toc/volume/8/issue/7/
REVIEWS
New insights into rotavirus vaccines
Chiara Mameli, Valentina Fabiano and Gian Vincenzo Zuccotti
http://dx.doi.org/10.4161/hv.20295
Abstract:
Rotavirus vaccines have shown to be effective and well tolerated in clinical trials. However it's crucial to point out that immunization occurs in "real-word" conditions different from ideal clinical trial settings. Thus, the impact of rotavirus vaccines in terms of effectiveness and safety needs to be evaluated in real-world conditions. Post-licensure data regarding vaccine impact, effectiveness and safety under routine use are now available and provide a "real-world view". We reviewed published data about the impact of rotavirus vaccines in the post-licensure era.

Research Papers

Size of clinical trials and Introductory prices of prophylactic vaccine series

Steven H. Weinberg, Amy T. Butchart and Matthew M. Davis

http://dx.doi.org/10.4161/hv.20506

Abstract:

Costs of completing the recommended immunization schedule have increased over the last decade. Access to prophylactic vaccines may become limited due to financing obstacles within current delivery systems. Vaccine prices reflect research and development expenses incurred by vaccine manufacturers, including costs associated with evaluating candidate vaccines in human subjects. If the number of subjects in clinical trials is increasing over time and associated with vaccine price, this may help explain increases in prices of vaccine series. We examined whether: (A) the initial public- and private-sector prices for recommended prophylactic vaccine series licensed and recommended in the US increased from 2000–2011, (B) the number of human subjects per licensed vaccine increased during the time period, and (C) the number of human subjects was associated with the initial public–and private–sector prices of the vaccine series. In regression analyses of 13 vaccines, approval year was not significantly associated with the number of human subjects, initial public-sector prices, or initial private-sector prices. While the number of phase II subjects was not significantly associated with prices, the numbers of phase III and combined late phase (phases II + III) subjects were significantly associated with initial public- and private-sector series prices ($p < 0.05$). The association between number of subjects and initial prices demonstrated diminishing marginal increases in price with increasing numbers of subjects. These findings may help guide the number of subjects required by the FDA in clinical trials, in order to reduce expenses for manufacturers and thereby help mitigate increases in initial vaccine series prices.

Model-based projections of the population-level impact of hepatitis A vaccination in Mexico

Thierry Van Effelterre, Rodrigo De Antonio-Suarez, Adrian Cassidy, Luis Romano-Mazzotti and Cinzia Marano

http://dx.doi.org/10.4161/hv.20549

Abstract:

There are indications of a shift in the pattern of hepatitis A (HAV) in Mexico from high to intermediate endemicity, progressively increasing the mean age of infection and the proportion of cases which are symptomatic.

This study estimated the potential impact of universal infant HAV vaccination in Mexico with two doses of Havrix™ at 12 and 18 mo of age on all HAV infections and symptomatic HAV infections. We developed a dynamic transmission model that accounts for changes in demography and HAV epidemiology. It was calibrated using Mexican age-specific seroprevalence and symptomatic HAV incidence data.

With 70% first-dose coverage and 85% second-dose coverage, the calibrated model projected that HAV vaccination would reduce the incidence of all HAV infections (symptomatic and asymptomatic) after the first 25 y of vaccination by 71–76% (minimum and maximum for different transmission scenarios). The projected reduction in cumulative incidence of symptomatic HAV infections over the first 25 y of vaccination was 45–51%. With 90% first-dose coverage and 85% second-dose coverage, the projected reduction in incidence of all HAV infections was 85–93%, and the projected reduction in the cumulative incidence of symptomatic HAV infections was 61–67%, over

a 25-y time frame. Sensitivity analyses indicated that second-dose coverage is important under the conservative base-case assumptions made about the duration of vaccine protection.

The model indicated that universal infant HAV vaccination could substantially reduce the burden of HAV disease in Mexico.

COMMENTARIES

Military vaccines in today's environment

Connie S. Schmaljohn, Leonard A. Smith and Arthur M. Friedlander

Abstract:

The US military has a long and highly distinguished record of developing effective vaccines against pathogens that threaten the armed forces. Many of these vaccines have also been of significant benefit to civilian populations around the world. The current requirements for force protection include vaccines against endemic disease threats as well as against biological warfare or bioterrorism agents, to include novel or genetically engineered threats. The cost of vaccine development and the modern regulatory requirements for licensing vaccines have strained the ability of the program to maintain this broad mission. Without innovative vaccine technologies, streamlined regulatory strategies, and coordinating efforts for use in civilian populations where appropriate, the military vaccine development program is in jeopardy.

Cancer Commentary Series

SPECIAL FOCUS COMMENTARIES

Overview of the cancer vaccine field: Are we moving forward?

Alex Kudrin and Michael G. Hanna, Jr

http://dx.doi.org/10.4161/hv.20474

Abstract | Full Text | PDF

Biological heterogeneity of cancer: Implication to therapy

Isaiah J. Fidler

http://dx.doi.org/10.4161/hv.19643

Abstract | Full Text | PDF

Inter-tumor heterogeneity

Mike Cusnir and Ludmila Cavalcante

Abstract | Full Text

A tale of two pities: Autologous melanoma vaccines on the brink

David Berd

http://dx.doi.org/10.4161/hv.20923

Abstract | Full Text | PDF

Challenges in the development of an autologous heat shock protein based anti-tumor vaccine

Dirk J. Reitsma and Austin J. Combest

Abstract | Full Text

Immunotherapy with autologous tumor cell vaccines for treatment of occult disease in early stage colon cancer

Michael G. Hanna, Jr

http://dx.doi.org/10.4161/hv.20740

Abstract | Full Text | PDF

Open Access Article

Cancer Vaccines: Are We There Yet?

Michael G. Hanna, Jr
http://dx.doi.org/10.4161/hv.21660
Abstract:
For nearly two decades there has been an abundance of research and clinical development programs underway to develop active specific immunotherapies, to educate the patient's immune response, specifically the T-cell immunity and memory, to recognize and destroy tumor cells by cell-mediated cellular toxicity. While many of these technology platforms achieved promising results in preclinical and clinical phase I and II clinical trials, essentially all but one have failed to achieve FDA market approval as a therapeutic drug product.

International Journal of Infectious Diseases
Volume 16, Issue 8, Pages e573-e644 (August 2012)
http://www.sciencedirect.com/science/journal/12019712
Review
Meningococcal disease in the Middle East and North Africa: an important public health consideration that requires further attention
Review Article
Pages e574-e582
Mehmet Ceyhan, Sameh Anis, Latt Htun-Myint, Robert Pawinski, Montse Soriano-Gabarró, Andrew Vyse
Summary
This paper reviews the epidemiological data describing meningococcal disease in the Middle East and North Africa (MENA). While meningococcal disease remains an important cause of endemic and epidemic disease in many MENA countries, existing published epidemiological data appear limited, fragmented, and collected via disparate methodologies. Children aged 5 years and younger are predominantly affected, though outbreaks of the disease often affect older age groups. Whilst serogroup A remains a main cause of meningococcal disease in the region, cases of serogroup B, W-135, and Y have been increasingly reported over the last two decades in some countries. The Hajj pilgrimage is a key factor influencing outbreaks and transmission, and the use of vaccines has minimized the effects on the home countries of the pilgrims and has decreased global dissemination of disease. Wider use of available polyvalent meningococcal conjugate vaccines may provide broader protection against the range of serogroups causing disease or posing a threat in the region. In addition, strengthening regional surveillance systems and regularly publishing reports with reliable estimates of disease incidence, carriage, disease-related mortality, and sequelae may facilitate the development of appropriate interventions and public health strategies regarding meningococcal disease within the region.

JAMA
August 01, 2012, Vol 308, No. 5
http://jama.ama-assn.org/current.dtl
Research Letters | August 1, 2012
Number and Order of Whole Cell Pertussis Vaccines in Infancy and Disease Protection

Sarah L. Sheridan, BMed, MAppEpid; Robert S. Ware, PhD; Keith Grimwood, MB, ChB, MD; Stephen B. Lambert, MBBS, PhD
To the Editor: Due to their lower rate of adverse events, acellular pertussis vaccines (diphtheria-tetanus-acellular pertussis; DTaP) replaced whole cell vaccines (diphtheria-tetanus-whole cell pertussis; DTwP) in many developed countries during the 1990s. DTaP became available in Queensland, Australia, in 1996 and replaced DTwP for publicly funded primary course immunizations delivered at ages 2 months, 4 months, and 6 months in March 1999. This meant children born in 1998 could receive a primary course consisting of only DTwP, only DTaP, or a mixed schedule…

Journal of Health Organization and Management
Volume 26 issue 5 Published: 2012
http://www.emeraldinsight.com/journals.htm?issn=1477-7266&show=latest
[Reviewed earlier; No relevant content]

Journal of Infectious Diseases
Volume 206 Issue 4 August 15, 2012
http://www.journals.uchicago.edu/toc/jid/current
[Reviewed last week]

Journal of Global Infectious Diseases (JGID)
April-June 2012 Volume 4 | Issue 2 Page Nos. 99-138
http://www.jgid.org/currentissue.asp?sabs=n
[Reviewed earlier; No relevant content]

Journal of Medical Microbiology
August 2012; 61 (Pt 8)
http://jmm.sgmjournals.org/content/current
[No relevant content]

The Lancet
Aug 04, 2012 Volume 380 Number 9840 p447 - 536
http://www.thelancet.com/journals/lancet/issue/current
Editorial
Technologies for global health
The Lancet
Preview
"How good is a cure if only ten people can have it…or we haven't got the money to train doctors to use it properly?" So asks Nadia Fall, director of a new production of The Doctor's Dilemma, which revolves around rationing for a new treatment for tuberculosis. Access to beneficial health technology, including essential medicines and medical devices, for those most in need is a theme explored in this week's issue in The Lancet and Imperial College London's Commission on technologies for global health.

Comment

Polio vaccines and the eradication of poliomyelitis

Philip D Minor

Preview

In The Lancet, Kathleen O'Reilly and colleagues1 describe their findings from a case-control analysis of vaccination history data from children in Pakistan and Afghanistan, in which they estimated the clinical effectiveness of oral monovalent, bivalent, and trivalent poliovirus vaccines (OPVs) specifically related to type 1 poliomyelitis—a topic that might seem esoteric to those outside the poliomyelitis community. However, these results provide an example of the need to tailor immunisation programmes to epidemiological circumstances, particularly where the goal is eradication.

Articles

The effect of mass immunisation campaigns and new oral poliovirus vaccines on the incidence of poliomyelitis in Pakistan and Afghanistan, 2001–11: a retrospective analysis

Kathleen M O'Reilly, Elias Durry, Obaid ul Islam, Arshad Quddus, Ni'ma Abid, Tahir P Mir, Rudi H Tangermann, R Bruce Aylward, Nicholas C Grassly

Summary

Background

Pakistan and Afghanistan are two of the three remaining countries yet to interrupt wild-type poliovirus transmission. The increasing incidence of poliomyelitis in these countries during 2010—11 led the Executive Board of WHO in January, 2012, to declare polio eradication a "programmatic emergency for global public health". We aimed to establish why incidence is rising in these countries despite programme innovations including the introduction of new vaccines.

Methods

We did a matched case-control analysis based on a database of 46 977 children aged 0—14 years with onset of acute flaccid paralysis between Jan 1, 2001, and Dec 31, 2011. The vaccination history of children with poliomyelitis was compared with that of children with acute flaccid paralysis due to other causes to estimate the clinical effectiveness of oral poliovirus vaccines (OPVs) in Afghanistan and Pakistan by conditional logistic regression. We estimated vaccine coverage and serotype-specific vaccine-induced population immunity in children aged 0—2 years and assessed their association with the incidence of poliomyelitis over time in seven regions of Afghanistan and Pakistan.

Findings

Between Jan 1, 2001, and Dec 31, 2011, there were 883 cases of serotype 1 poliomyelitis (710 in Pakistan and 173 in Afghanistan) and 272 cases of poliomyelitis serotype 3 (216 in Pakistan and 56 in Afghanistan). The estimated clinical effectiveness of a dose of trivalent OPV against serotype 1 poliomyelitis was 12·5% (95% CI 5·6—18·8) compared with 34·5% (16·1—48·9) for monovalent OPV (p=0·007) and 23·4% (10·4—34·6) for bivalent OPV (p=0·067). Bivalent OPV was non-inferior compared with monovalent OPV (p=0·21). Vaccination coverage decreased during 2006—11 in the Federally Administered Tribal Areas (FATA), Balochistan, and Khyber Pakhtunkhwa in Pakistan and in southern Afghanistan. Although partially mitigated by the use of more effective vaccines, these decreases in coverage resulted in lower vaccine-induced population immunity to poliovirus serotype 1 in FATA and Balochistan and associated increases in the incidence of poliomyelitis.

Interpretation

The effectiveness of bivalent OPV is comparable with monovalent OPV and can therefore be used in eradicating serotype 1 poliomyelitis whilst minimising the risks of serotype 3 outbreaks. However, decreases in vaccination coverage in parts of Pakistan and southern Afghanistan have severely limited the effect of this vaccine.

Funding
Poliovirus Research subcommittee of WHO, Royal Society, and Medical Research Council.

The Lancet Commissions

Technologies for global health

Peter Howitt, Ara Darzi, Guang-Zhong Yang, Hutan Ashrafian, Rifat Atun, James Barlow, Alex Blakemore, Anthony MJ Bull, Josip Car, Lesong Conteh, Graham S Cooke, Nathan Ford, Simon AJ Gregson, Karen Kerr, Dominic King, Myutan Kulendran, Robert A Malkin, Azeem Majeed, Stephen Matlin, Robert Merrifield, Hugh A Penfold, Steven D Reid, Peter C Smith, Molly M Stevens, Michael R Templeton, Charles Vincent, Elizabeth Wilson

Collaboration between The Lancet and Imperial College London, UK, has resulted in a new Commission, which examines how medical technology should best be used to improve health in low- and middle-income countries. The report concludes that in many cases, medical technology—almost exclusively developed in rich countries—is simply inappropriate for use in poorer nations.

Executive summary

According to hospital inventories, an estimated 40% of healthcare equipment in developing countries is out of service, compared with less than 1% in high-income countries. The inappropriate deployment of medical technologies from wealthy countries plays a major part in this high failure rate.

Instead of relying on hand-me-down technologies from wealthier countries, which can be costly, inappropriate for local conditions, and even dangerous, the authors urge a renewed effort towards developing what they call "frugal technologies"—cost-effective technologies that are developed specifically to cope in local conditions. Examples of frugal technologies which have been developed to meet local needs include: the Jaipur foot, a rubber prosthetic for people who have lost their leg and foot below the knee; PATH's Uniject injection system, which allows once-only use of needles for injectable contraceptives; and the eRanger, a durable rural ambulance, based around a motorbike and stretcher sidecar (which can be modified to carry one or two people).

The report also advocates a wider understanding of what we mean by medical technologies, pointing out that technological improvement to sanitation and road conditions could also have a far-reaching impact on public health in many low- and middle-income countries. Furthermore, the authors argue that advances in technology need to be accompanied by innovation to have a significant effect on health—this includes the development of effective delivery mechanisms and novel approaches to financing.

The Imperial College London/ Lancet Commission

The Lancet Infectious Disease
Aug 2012 Volume 12 Number 8 p577 - 646
http://www.thelancet.com/journals/laninf/issue/current
[Reviewed earlier]

Medical Decision Making (MDM)
July–August 2012; 32 (4)
http://mdm.sagepub.com/content/current
Theme: Patients' Choices: Perceived Risk, Health State Values, and Decisions
Original Articles/Presenting Probabilities to Patients
[Reviewed earlier]

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June 2012 Volume 90, Issue 2 Pages 215–416
http://onlinelibrary.wiley.com/doi/10.1111/milq.2012.90.issue-2/issuetoc
[Reviewed earlier]

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Volume 488 Number 7409 pp5-124 2 August 2012
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[No relevant content]

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August 2012, Volume 13 No 8 pp705-795
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July 2012, Volume 18 No 7 pp989-1153
http://www.nature.com/nm/journal/v18/n7/index.html
[No relevant content]

Nature Reviews Immunology
August 2012 Vol 12 No 8
http://www.nature.com/nri/journal/v12/n7/index.html
The immunological life cycle of tuberculosis
Joel D. Ernst
p581 | doi:10.1038/nri3259
Here, Joel Ernst proposes that there are distinct stages in the immune response to Mycobacterium tuberculosis that form an 'immunological life cycle'. The description of this framework can help the understanding and study of immunity to tuberculosis in humans and animal models.

Immune responses to Mycobacterium tuberculosis are only partially effective; they drive the bacteria into a latent state, but rarely eliminate them. Unfortunately, the latent state of M. tuberculosis is reversible, and reactivation tuberculosis is the source of most transmission. Studies in animal models and in humans have not yet yielded a comprehensive picture of the mechanisms or correlates of immunity to M. tuberculosis

infection, or of why immunity fails to eradicate the pathogen. This Review proposes that there are distinct stages in the immune response to M. tuberculosis that form an 'immunological life cycle'. It is hoped that this thesis will provide a framework for investigation to understand immunity to M. tuberculosis and to guide tuberculosis vaccine discovery and development.

Recent progress in mucosal vaccine development: potential and limitations

Nils Lycke

p592 | doi:10.1038/nri3251

This Review summarizes the past, current and future directions for the development of mucosal vaccines, with a particular focus on the importance of the formulation, the route of administration and the choice of adjuvant for the induction of protective mucosal immunity.

Most pathogens access the body through the mucosal membranes. Therefore, effective vaccines that protect at these sites are much needed. However, despite early success with the live attenuated oral polio vaccine over 50 years ago, only a few new mucosal vaccines have been subsequently launched. This is partly due to problems with developing safe and effective mucosal adjuvants. In the past decade, however, the successful development of live attenuated mucosal vaccines against influenza virus and rotavirus infections has boosted interest in this field, and great expectations for new mucosal vaccines lie ahead. Here, I discuss the expanding knowledge and strategies used in the development of mucosal vaccines.

Opinion: Towards an HIV cure: a global scientific strategy

Steven G. Deeks[1], Brigitte Autran, Ben Berkhout, Monsef Benkirane, Scott Cairns, Nicolas Chomont, Tae-Wook Chun, Melissa Churchill, Michele Di Mascio, Christine Katlama, Alain Lafeuillade, Alan Landay, Michael Lederman, Sharon R. Lewin, Frank Maldarelli, David Margolis, Martin Markowitz, Javier Martinez-Picado, James I. Mullins, John Mellors, Santiago Moreno, Una O'Doherty, Sarah Palmer, Marie-Capucine Penicaud, Matija Peterlin, Guido Poli, Jean-Pierre Routy, Christine Rouzioux, Guido Silvestri, Mario Stevenson, Amalio Telenti, Carine Van Lint, Eric Verdin, Ann Woolfrey, John Zaia & Françoise Barré-Sinoussi for The International AIDS Society Scientific Working Group on HIV Cure[2]

Abstract

Given the limitations of antiretroviral therapy and recent advances in our understanding of HIV persistence during effective treatment, there is a growing recognition that a cure for HIV infection is both needed and feasible. The International AIDS Society convened a group of international experts to develop a scientific strategy for research towards an HIV cure. Several priorities for basic, translational and clinical research were identified. This Opinion article summarizes the group's recommended key goals for the international community.

New England Journal of Medicine

August 2, 2012 Vol. 367 No. 5

http://content.nejm.org/current.shtml

Antiretroviral Prophylaxis for HIV Prevention in Heterosexual Men and Women

J.M. Baeten and Others

Free Full Text

Abstract
Background
Antiretroviral preexposure prophylaxis is a promising approach for preventing human immunodeficiency virus type 1 (HIV-1) infection in heterosexual populations.
Full Text of Background...
Methods
We conducted a randomized trial of oral antiretroviral therapy for use as preexposure prophylaxis among HIV-1–serodiscordant heterosexual couples from Kenya and Uganda. The HIV-1–seronegative partner in each couple was randomly assigned to one of three study regimens — once-daily tenofovir (TDF), combination tenofovir–emtricitabine (TDF–FTC), or matching placebo — and followed monthly for up to 36 months. At enrollment, the HIV-1–seropositive partners were not eligible for antiretroviral therapy, according to national guidelines. All couples received standard HIV-1 treatment and prevention services.
Full Text of Methods...
Results
We enrolled 4758 couples, of whom 4747 were followed: 1584 randomly assigned to TDF, 1579 to TDF–FTC, and 1584 to placebo. For 62% of the couples followed, the HIV-1–seronegative partner was male. Among HIV-1–seropositive participants, the median CD4 count was 495 cells per cubic millimeter (interquartile range, 375 to 662). A total of 82 HIV-1 infections occurred in seronegative participants during the study, 17 in the TDF group (incidence, 0.65 per 100 person-years), 13 in the TDF–FTC group (incidence, 0.50 per 100 person-years), and 52 in the placebo group (incidence, 1.99 per 100 person-years), indicating a relative reduction of 67% in the incidence of HIV-1 with TDF (95% confidence interval [CI], 44 to 81; P<0.001) and of 75% with TDF–FTC (95% CI, 55 to 87; P<0.001). Protective effects of TDF–FTC and TDF alone against HIV-1 were not significantly different (P=0.23), and both study medications significantly reduced the HIV-1 incidence among both men and women. The rate of serious adverse events was similar across the study groups. Eight participants receiving active treatment were found to have been infected with HIV-1 at baseline, and among these eight, antiretroviral resistance developed in two during the study.
Conclusions
Oral TDF and TDF–FTC both protect against HIV-1 infection in heterosexual men and women. (Funded by the Bill and Melinda Gates Foundation; Partners PrEP ClinicalTrials.gov number, NCT00557245.)
Full Text of Discussion...
Preexposure Prophylaxis for HIV Infection among African Women
L. Van Damme and Others
Free Full Text
Antiretroviral Preexposure Prophylaxis for Heterosexual HIV Transmission in Botswana
M.C. Thigpen and Others
Free Full Text
Clinical Decisions
Editorial
Preexposure Prophylaxis for HIV Prevention
Preexposure Prophylaxis for HIV — Where Do We Go from Here?
Myron S. Cohen, M.D., and Lindsey R. Baden, M.D.

N Engl J Med 2012; 367:459-461August 2, 2012

OMICS: A Journal of Integrative Biology
July – August 2012, 16(7-8)
http://online.liebertpub.com/toc/omi/16/6
[No relevant content]

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August 2012 - Volume 31 - Issue 8 pp: A7-A8,795-887,e99-e140
http://journals.lww.com/pidj/pages/currenttoc.aspx
[No relevant content]

Pediatrics
August 2012, VOLUME 130 / ISSUE 2
http://pediatrics.aappublications.org/current.shtml
Articles
Vaccine-Type Human Papillomavirus and Evidence of Herd Protection After Vaccine Introduction
Jessica A. Kahn, Darron R. Brown, Lili Ding, Lea E. Widdice, Marcia L. Shew, Susan Glynn, and David I. Bernstein
Pediatrics 2012; 130:e249-e256
Abstract
OBJECTIVES: The aims of this study were to compare prevalence rates of human papillomavirus (HPV) in young women before and after HPV vaccine introduction to determine the following: (1) whether vaccine-type HPV infection decreased, (2) whether there was evidence of herd protection, and (3) whether there was evidence for type-replacement (increased prevalence of nonvaccine-type HPV).
METHODS: Young women 13 to 26 years of age who had had sexual contact were recruited from 2 primary care clinics in 2006–2007 for a prevaccination surveillance study (N = 368, none were vaccinated) and 2009–2010 for a postvaccination surveillance study (N = 409, 59% were vaccinated). Participants completed a questionnaire and were tested for cervicovaginal HPV DNA. HPV prevalence rates were compared in the pre- versus postsurveillance studies by using $\chi 2$ tests. Propensity score weighting was used to balance differences in covariates between the 2 surveillance studies.
RESULTS: The mean age was ~19 years for both groups of participants and most were African American and non-Hispanic. After propensity score weighting, the prevalence rate for vaccine-type HPV decreased substantially (31.7%–13.4%, $P < .0001$). The decrease in vaccine-type HPV not only occurred among vaccinated (31.8%–9.9%, $P < .0001$) but also among unvaccinated (30.2%–15.4%, $P < .0001$) postsurveillance study participants. Nonvaccine-type HPV increased (60.7%–75.9%, $P < .0001$) for vaccinated postsurveillance study participants.
CONCLUSIONS: Four years after licensing of the quadrivalent HPV vaccine, there was a substantial decrease in vaccine-type HPV prevalence and evidence of herd protection in

this community. The increase in nonvaccine-type HPV in vaccinated participants should be interpreted with caution but warrants further study.

Duration of Protection of Pentavalent Rotavirus Vaccination in Nicaragua

Manish Patel, Cristina Pedreira, Lucia Helena De Oliveira, Jazmina Umaña, Jacqueline Tate, Ben Lopman, Edmundo Sanchez, Martha Reyes, Juan Mercado, Alcides Gonzalez, Maria Celina Perez, Angel Balmaceda, Jon Andrus, and Umesh Parashar

Pediatrics 2012; 130:e365-e372

Abstract

OBJECTIVE: To evaluate the duration of protection of pentavaent rotavirus vaccine (RV5) against rotavirus hospitalizations in Nicaragua, a developing country in Central America.

METHODS: We conducted a case-control study at 4 hospitals from 2007 through 2010, including 1016 children hospitalized with laboratory-confirmed rotavirus diarrhea, 4930 controls with nonrotavirus diarrhea (ie, "test-negative"), and 5627 controls without diarrhea. All cases and controls were aged ≥6 months and born after August 2006. Outcomes included odds of antecedent vaccination between case-patients and controls, and effectiveness of vaccination (1 – adjusted odds ratio [OR] × 100). Duration of protection was assessed by comparing effectiveness among children aged <1 year compared with ≥1 year.

RESULTS: Indicators of socioeconomic conditions and nonrotavirus vaccination (oral polio vaccine and diphtheria/tetanus/pertussis/hepatitis A/hepatitis B) for test-negative controls were more comparable to the rotavirus case-patients than nondiarrhea controls. RV5 vaccination was associated with a significantly lower risk of rotavirus hospitalization by using test-negative controls (OR: 0.55; 95% confidence interval [CI]: 0.41–0.74) and nondiarrhea controls (OR: 0.30; 95% CI: 0.22–0.40). Risk of rotavirus hospitalization was twofold lower among RV5 vaccinated children aged <1 year (OR: 0.36; 95% CI: 0.22–0.57) compared with RV5 vaccinated children aged ≥1 year (OR: 0.70; 95% CI: 0.47–1.05).

CONCLUSIONS: RV5 provided good protection against severe rotavirus disease in Nicaragua during the first year of life, when most severe and fatal rotavirus disease in developing countries occurs. However, the decline in protection with age warrants monitoring of disease among older children and consideration of a booster dose evaluation at the end of infancy.

Special Articles

USPSTF Perspective on Evidence-Based Preventive Recommendations for Children

Bernadette Mazurek Melnyk, David C. Grossman, Roger Chou, Iris Mabry-Hernandez, Wanda Nicholson, Thomas G. DeWitt, Adelita G. Cantu, Glenn Flores, and for the US Preventive Services Task Force

Pediatrics 2012; 130:e399-e407

Abstract

The development and use of evidence-based recommendations for preventive care by primary care providers caring for children is an ongoing challenge. This issue is further complicated by the fact that a higher proportion of recommendations by the US Preventive Services Task Force (USPSTF) for pediatric preventive services in comparison with adult services have insufficient evidence to recommend for or against the service. One important root cause for this problem is the relative lack of high quality screening and counseling studies in pediatric primary care settings. The paucity of studies limits

the development of additional evidence-based guidelines to enhance best practices for pediatric and adolescent conditions. In this article, we describe the following: (1) evidence-based primary care preventive services as a strategy for addressing important pediatric morbidities, (2) the process of making evidence-based screening recommendations by the USPSTF, (3) the current library of USPSTF recommendations for children and adolescents, and (4) factors influencing the use of USPSTF recommendations and other evidence-based guidelines by clinicians. Strategies to accelerate the implementation of evidence-based services and areas of need for future research to fill key gaps in evidence-based recommendations and guidelines are highlighted.

Pharmacoeconomics
August 1, 2012 - Volume 30 - Issue 8 pp: 633-747,e1-e15
http://adisonline.com/pharmacoeconomics/pages/currenttoc.aspx
[Reviewed earlier]

PLoS One
[Accessed 4 August 2012]
http://www.plosone.org/article/browse.action;jsessionid=577FD8B9E1F322DAA533C413369CD6F3.ambra01?field=date

Pandemic Influenza (A/H1N1) Vaccine Uptake among French Private General Practitioners: A Cross Sectional Study in 2010

Pierre Verger, Rémi Flicoteaux, Michael Schwarzinger, Luis Sagaon-Teyssier, Patrick Peretti-Watel, Odile Launay, Remy Sebbah, Jean-Paul Moatti
PLoS ONE: Research Article, published 03 Aug 2012 10.1371/journal.pone.0041837
Abstract
Background
In July, 2009, French health authorities, like those in many other countries, decided to embark on a mass vaccination campaign against the pandemic A(H1N1) influenza. Private general practitioners (GPs) were not involved in this campaign. We studied GPs' pandemic vaccine (pvaccine) uptake, quantified the relative contribution of its potential explanatory factors and studied whether their own vaccination choice was correlated with their recommendations to patients about pvaccination.
Methodology/Principal Findings
In this cross-sectional telephone survey, professional investigators interviewed an existing panel of randomly selected private GPs (N = 1431; response rate at inclusion in the panel: 36.8%; participation rate in the survey: 100%). The main outcome variable was GPs' own pvaccine uptake. We used an averaging multi-model approach to quantify the relative contribution of factors associated with their vaccination. The pvaccine uptake rate was 61% (95%CI = 58.3–63.3). Four independent factors contributed the most to this rate (partial Nagelkerke's R2): history of previous vaccination against seasonal influenza (14.5%), perception of risks and efficacy of the pvaccine (10.8%), opinions regarding the organization of the vaccination campaign (7.1%), and perception of the pandemic's severity (5.2%). Overall, 71.3% (95%CI = 69.0–73.6) of the participants recommended pvaccination to young adults at risk and 40.1% (95%CI = 37.6–42.7) to other young adults. GPs' own pvaccination was strongly predictive of their

recommendation to both young adults at risk (OR = 9.6; 95%CI = 7.2–12.6) and those not at risk (OR = 8.5; 95%CI = 6.4–11.4).
Conclusions/Significance
These results suggest that around 60% of French private GPs followed French authorities' recommendations about vaccination of health care professionals against the A(H1N1) influenza. They pinpoint priority levers for improving preparedness for future influenza pandemics. Besides encouraging GPs' own uptake of regular vaccination against seasonal influenza, providing GPs with clear information about the risks and efficacy of any new pvaccine and involving them in the organization of any future vaccine campaign may improve their pvaccine uptake.

An Assessment of the Screening Method to Evaluate Vaccine Effectiveness: The Case of 7-Valent Pneumococcal Conjugate Vaccine in the United States

Adam L. Cohen, Thomas Taylor, Monica M. Farley, William Schaffner, Lindsey J. Lesher, Kenneth A. Gershman, Nancy M. Bennett, Arthur Reingold, Ann Thomas, Joan Baumbach, Lee H. Harrison, Susan Petit, Bernard Beall, Elizabeth Zell, Matthew Moore
PLoS ONE: Research Article, published 01 Aug 2012 10.1371/journal.pone.0041785
Abstract
The screening method, which employs readily available data, is an inexpensive and quick means of estimating vaccine effectiveness (VE). We compared estimates of effectiveness of heptavalent pneumococcal conjugate vaccine (PCV7) against invasive pneumococcal disease (IPD) using the screening and case-control methods. Cases were children aged 19–35 months with pneumococcus isolated from normally sterile sites residing in Active Bacterial Core surveillance areas in the United States. Case-control VE was estimated for 2001–2004 by comparing the odds of vaccination among cases and community controls. Screening-method VE for 2001–2009 was estimated by comparing the proportion of cases vaccinated to National Immunization Survey-derived coverage among the general population. To evaluate the plausibility of screening-method VE findings, we estimated attack rates among vaccinated and unvaccinated persons. We identified 1,154 children with IPD. Annual population PCV7 coverage with ≥1 dose increased from 38% to 97%. Case-control VE for ≥1 dose was estimated as 75% against all-serotype IPD (annual range: 35–83%) and 91% for PCV7-type IPD (annual range: 65–100%). By the screening method, the overall VE was 86% for ≥1 dose (annual range: −240–70%) against all-serotype IPD and 94% (annual range: 62–97%) against PCV7-type IPD. As cases of PCV7-type IPD declined during 2001–2005, estimated attack rates for all-serotype IPD among vaccinated and unvaccinated individuals became less consistent than what would be expected with the estimated effectiveness of PCV7. The screening method yields estimates of VE that are highly dependent on the time period during which it is used and the choice of outcome. The method should be used cautiously to evaluate VE of PCVs.

Were Equatorial Regions Less Affected by the 2009 Influenza Pandemic? The Brazilian Experience

Cynthia Schuck-Paim, Cécile Viboud, Lone Simonsen, Mark A. Miller, Fernanda E. A. Moura, Roberto M. Fernandes, Marcia L. Carvalho, Wladimir J. Alonso
PLoS ONE: Research Article, published 01 Aug 2012 10.1371/journal.pone.0041918
Abstract
Although it is in the Tropics where nearly half of the world population lives and infectious disease burden is highest, little is known about the impact of influenza pandemics in this area. We investigated the mortality impact of the 2009 influenza

pandemic relative to mortality rates from various outcomes in pre-pandemic years throughout a wide range of latitudes encompassing the entire tropical, and part of the subtropical, zone of the Southern Hemisphere (+5°N to −35°S) by focusing on a country with relatively uniform health care, disease surveillance, immunization and mitigation policies: Brazil. To this end, we analyzed laboratory-confirmed deaths and vital statistics mortality beyond pre-pandemic levels for each Brazilian state. Pneumonia, influenza and respiratory mortality were significantly higher during the pandemic, affecting predominantly adults aged 25 to 65 years. Overall, there were 2,273 and 2,787 additional P&I- and respiratory deaths during the pandemic, corresponding to a 5.2% and 2.7% increase, respectively, over average pre-pandemic annual mortality. However, there was a marked spatial structure in mortality that was independent of socio-demographic indicators and inversely related with income: mortality was progressively lower towards equatorial regions, where low or no difference from pre-pandemic mortality levels was identified. Additionally, the onset of pandemic-associated mortality was progressively delayed in equatorial states. Unexpectedly, there was no additional mortality from circulatory causes. Comparing disease burden reliably across regions is critical in those areas marked by competing health priorities and limited resources. Our results suggest, however, that tropical regions of the Southern Hemisphere may have been disproportionally less affected by the pandemic, and that climate may have played a key role in this regard. These findings have a direct bearing on global estimates of pandemic burden and the assessment of the role of immunological, socioeconomic and environmental drivers of the transmissibility and severity of this pandemic.

Vaccination with Embryonic Stem Cells Protects against Lung Cancer: Is a Broad-Spectrum Prophylactic Vaccine against Cancer Possible?

Kavitha Yaddanapudi, Robert A. Mitchell, Kalyani Putty, Sharon Willer, Rajesh K. Sharma, Jun Yan, Haribabu Bodduluri, John W. Eaton

PLoS ONE: Research Article, published 31 Jul 2012 10.1371/journal.pone.0042289

Abstract

The antigenic similarity between tumors and embryos has been appreciated for many years and reflects the expression of embryonic gene products by cancer cells and/or cancer-initiating stem cells. Taking advantage of this similarity, we have tested a prophylactic lung cancer vaccine composed of allogeneic murine embryonic stem cells (ESC). Naïve C57BL/6 mice were vaccinated with ESC along with a source of granulocyte macrophage-colony stimulating factor (GM-CSF) in order to provide immunostimulatory adjuvant activity. Vaccinated mice were protected against subsequent challenge with implantable Lewis lung carcinoma (LLC). ESC-induced anti-tumor immunity was not due to a non-specific "allo-response" as vaccination with allogeneic murine embryonic fibroblasts did not protect against tumor outgrowth. Vaccine efficacy was associated with robust tumor-reactive primary and memory CD8+ T effector responses, Th1 cytokine response, higher intratumoral CD8+ T effector/CD4+CD25+Foxp3+ T regulatory cell ratio, and reduced myeloid derived suppressor cells in the spleen. Prevention of tumorigenesis was found to require a CD8-mediated cytotoxic T lymphocyte (CTL) response because in vivo depletion of CD8+ T lymphocytes completely abrogated the protective effect of vaccination. Importantly, this vaccination strategy also suppressed the development of lung cancer induced by the combination of carcinogen administration and chronic pulmonary inflammation. Further refinement of this novel vaccine strategy and identification of shared ESC/tumor antigens may lead to

immunotherapeutic options for lung cancer patients and, perhaps more importantly, could represent a first step toward the development of prophylactic cancer vaccines.

Awareness and Attitude towards Human Papillomavirus (HPV) Vaccine among Medical Students in a Premier Medical School in India

Deeksha Pandey, Vidhi Vanya, Saurav Bhagat, Binu VS, Jyothi Shetty
PLoS ONE: Research Article, published 31 Jul 2012 10.1371/journal.pone.0040619

Abstract

Background

As preventing cancer with the help of a vaccine is a comparatively new concept, awareness and education about it will have important implication in the implementation of this strategy.

Materials and Methods

Present explorative questionnaire based survey included 618 MBBS students for final analysis.

Results

Majority of participants (89.6%) were well aware of the preventable nature of cervical cancer. Most of them (89.2%) knew that necessary factor responsible for cervical cancer is infection with high risk HPV. Awareness regarding the availability of vaccine against cervical cancer was 75.6%. Females had a better awareness regarding availability of vaccine, target population for vaccination and about the catch up program. Overall acceptance of HPV vaccine among the population studied was 67.8%. Medical teaching had a definitive impact on the understanding of this important public health issue. Females seemed to be more ready to accept the vaccine and recommend it to others. For our study population the most common source of information was medical school teaching. Majority of participants agreed that the most important obstacle in implementation of HPV vaccination program in our country is inadequate information and 86.2% wanted to be educated by experts in this regard.

Conclusion

HPV vaccine for primary prevention of cervical cancer is a relatively new concept. Health professional will be able to play a pivotal role in popularizing this strategy.

PLoS Medicine

(Accessed 4 August 2012)
http://www.plosmedicine.org/article/browse.action?field=date
[No new relevant data]

PLoS Neglected Tropical Diseases

June 2012
http://www.plosntds.org/article/browseIssue.action
[Reviewed earlier]

PNAS - Proceedings of the National Academy of Sciences of the United States of America

(Accessed 4 August 2012)
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[No new relevant data]

Public Health Ethics
Volume 5 Issue 1 April 2012
http://phe.oxfordjournals.org/content/current
[Reviewed earlier]

Science
3 August 2012 vol 337, issue 6094, pages 497-612
http://www.sciencemag.org/current.dtl
News Focus
Polio Campaign
The Polio Emergency
Leslie Roberts
Science 3 August 2012: 514-516.
Can a tough new taskmaster and ramped-up program finally push the global eradication initiative over the finish line?
Summary
Polio Campaign
Fighting Polio in Pakistan
Leslie Roberts
Science 3 August 2012: 517-521.
Pakistan's 18-year struggle shows why it is so hard to eradicate polio from its last few strongholds.
Summary
Full Text
Podcast Interview
Polio Campaign
Closing a Deadly Refuge
Leslie Roberts
Science 3 August 2012: 520-521.
On 17 July in the town of Gadap in Karachi, Pakistan, two gunmen shot at two men who were participating in a national polio vaccination campaign—sadly, a not uncommon occurrence.
Summary
Policy Forum
Research Ethics
Aligning Regulations and Ethics in Human Research
Rebecca Dresser
Government officials are revising the 1991 Common Rule regulations that govern most human research in the United States. They have already received public comments on a 2011 Advance Notice of Proposed Rulemaking (ANPRM) (1). The public will have another chance to comment when officials publish specific proposals. The revision effort's overall goal is to remove unwarranted regulatory impediments to research while strengthening essential human subject protections. I offer three ideas for additions to

the oversight system, each tied to one of the 1979 Belmont Report's (2) three ethical principles governing human research.

Science Translational Medicine
1 August 2012 vol 4, issue 145
http://stm.sciencemag.org/content/current
[No relevant content]

Tropical Medicine & International Health
August 2012 Volume 17, Issue 8 Pages 935–1046, e1–e110
http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1365-3156/currentissue
Unsustainable funding of high-burden tuberculosis control programmes: who is responsible? (pages 1044–1046)
Verena Mauch, Rob Baltussen and Koos van der Velden
Article first published online: 12 JUN 2012 | DOI: 10.1111/j.1365-3156.2012.03023.x
Abstract [Free access]
The literature suggests that crowding-out effects of government funding for health happen in low-income countries with a high HIV burden. In a survey, we investigated the hypothesis that domestic funding for TB control has fallen in 11 low-income, high-TB-burden countries in the context of changes in gross domestic product (GDP), development assistance inflows and national health expenditures. We found that despite rises in GDP per capita between 2003 and 2009, health expenditure as per cent of GDP fell or stayed the same for the majority of these countries. Although TB control budgets increased for all 11 countries in absolute terms, 6 countries reduced government contribution to TB control. For health programmes to become sustainable in the long run, we suggest increases in donor funding for health to be accompanied by requirements to increase domestic funding for health. We thereby attribute responsibility to avoid crowding-out effects to donors and governments alike. Moreover, it is the responsibility of both to ensure essential items to be funded by government sources to avoid a collapse of programmes once aid is withdrawn.

Vaccine
http://www.sciencedirect.com/science/journal/0264410X
Volume 30, Issue 38 p. 5585-5698 (17 August 2012)
The impact of making vaccines thermostable in Niger's vaccine supply chain
Original Research Article
Pages 5637-5643
Bruce Y. Lee, Brigid E. Cakouros, Tina-Marie Assi, Diana L. Connor, Joel Welling, Souleymane Kone, Ali Djibo, Angela R. Wateska, Lionel Pierre, Shawn T. Brown
Abstract
Objective
Determine the effects on the vaccine cold chain of making different types of World Health Organization (WHO) Expanded Program on Immunizations (EPI) vaccines thermostable.
Methods

Utilizing a detailed computational, discrete-event simulation model of the Niger vaccine supply chain, we simulated the impact of making different combinations of the six current EPI vaccines thermostable.
Findings
Making any EPI vaccine thermostable relieved existing supply chain bottlenecks (especially at the lowest levels), increased vaccine availability of all EPI vaccines, and decreased cold storage and transport capacity utilization. By far, the most substantial impact came from making the pentavalent vaccine thermostable, increasing its own vaccine availability from 87% to 97% and the vaccine availabilities of all other remaining non-thermostable EPI vaccines to over 93%. By contrast, making each of the other vaccines thermostable had considerably less effect on the remaining vaccines, failing to increase the vaccine availabilities of other vaccines to more than 89%. Making tetanus toxoid vaccine along with the pentavalent thermostable further increased the vaccine availability of all EPI vaccines by at least 1–2%.
Conclusion
Our study shows the potential benefits of making any of Niger's EPI vaccines thermostable and therefore supports further development of thermostable vaccines. Eliminating the need for refrigerators and freezers should not necessarily be the only benefit and goal of vaccine thermostability. Rather, making even a single vaccine (or some subset of the vaccines) thermostable could free up significant cold storage space for other vaccines, and thereby help alleviate supply chain bottlenecks that occur throughout the world.

Vaccine: Development and Therapy
(Accessed 4 August 2012)
http://www.dovepress.com/vaccine-development-and-therapy-journal
[No new relevant content]

Value in Health
Vol 15 | No. 4 | June 2012
http://www.valueinhealthjournal.com/current
[Reviewed earlier]

Media 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 CVERP 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. Most publications require either a registration or a fee-based subscription for access. We will provide full-text where content is published without restriction.

Economist
http://www.economist.com/
Accessed 4 August 2012
[No new relevant content]

Financial Times
http://www.ft.com
Accessed 4 August 2012
Infectious diseases: Innovation can still be a matter of life or death
Financial Times | 31 July 2012
By Andrew Jack
If necessity is the mother of invention, self-interest is the father. The influenza pandemic of 2009 – which first caught the public eye in Mexico – triggered a surge in research, investment and health preparations in the west to tackle the latest manifestation of an ancient scourge. Richer governments invested billions of dollars in purchasing vaccines and drugs, in the process stimulating fresh activity by companies into new technologies in a field long neglected by lack of interest and money.
http://www.ft.com/cms/s/0/1a688bac-d276-11e1-abe7-00144feabdc0.html#axzz22doJwClN

Foreign Affairs
http://www.foreignaffairs.com/
July/August 2012 Volume 91, Number 4
Accessed 4 August 2012
[No new relevant content]

Foreign Policy
http://www.foreignpolicy.com/
Accessed 4 August 2012
[No new relevant content]

The Guardian
http://www.guardiannews.com/
Accessed 4 August 2012
[No new unique, relevant content]

The Huffington Post
http://www.huffingtonpost.com/
Accessed 4 August 2012
[No new unique, relevant content]

New Yorker
http://www.newyorker.com/
Accessed 4 August 2012
[No new unique, relevant content]

New York Times

http://www.nytimes.com/
Accessed 4 August 2012

Global Update

Immunization: Group Gets Vaccines to Countries Isolated by War and Secrecy

By DONALD G. McNEIL Jr.
Published: July 30, 2012

A nonprofit group founded to get vaccines to the world's poorest children is reaching into ever-more-isolated countries. The GAVI Alliance, formerly the Global Alliance for Vaccines and Immunization, just sold to North Korea a vaccine against five diseases, and has announced plans to roll out other vaccines soon in Yemen, the Republic of Congo and Pakistan.

Wall Street Journal
http://online.wsj.com/home-page

Washington Post
http://www.washingtonpost.com/
Accessed 4 August 2012
[No new unique, relevant content]

Twitter Watch *[accessed 4 August 2012 – 18:42]*
Items of interest from a variety of twitter feeds associated with immunization, vaccines and global public health. This capture is highly selective and is by no means intended to be exhaustive.

Arthur Caplan @ArthurCaplan
Editorial: Continue ban on risky flu research | http://StarTribune.com
http://www.startribune.com/opinion/editorials/164947126.html
11:12 AM - 4 Aug 12

CDCgov@CDCgov
@CDCgov has staff in Uganda investigating the #ebola outbreak including lab & epi experts. http://go.usa.gov/Gj7
8:20 AM - 4 Aug 12

World Bank @WorldBank
Visualize #globaldev data with free data mapping tools. http://bit.ly/PjreZi #opendata
3:44 AM - 4 Aug 12

ACP @ACPinternists
Communicating Risk-Benefit of #Vaccination to Patients: free recorded webinar http://bit.ly/xA9X0B from American College of Physicians
8:55 AM - 3 Aug 12

Amanda Glassman @glassmanamanda
Global health policy summit - high-level but none of the usual names
http://j.mp/N1Ee9Q

2:56 PM - 2 Aug 12

PATH @PATHtweets
We welcome Dr. Ponni Subbiah, the new program leader for PATH's drug development program, @OneWorldHealth. http://ow.ly/cFAKd
12:27 PM - 2 Aug 12

UNICEF @UNICEF
Via @GdnDevelopment #Yemen to vaccinate all children against diarrhoea rotavirus, plus UNICEF comment http://uni.cf/OLlF9L #Promise4Children
11:52 AM - 2 Aug 12

USAID Global Health @USAIDGH
A new #GlobalHealth journal is seeking submissions. Learn more: http://ow.ly/ctf6D #AIDS2012 @GHSPJournal @JohnsHopkinsCCP @K4Health
8:50 AM - 28 Jul 12

GAVI Alliance @GAVIAlliance
Today is World Hepatitis Day! #Vaccines are critical 2 protecting kids against hepatitis B. http://ht.ly/cz1aV #worldhepday @GAVIAlliance
8:44 AM - 28 Jul 12

Seth Berkley @GAVISeth
Really exciting! Fiji with AusAid help will introduce 3 life saving vax: Pneumo, Rota & HPV in Q3. First country to do so! #vaccineswork
4:47 PM - 27 Jul 12

IVAC at JHSPH @IVACtweets
Tomorrow is World Hepatitis Day! A shocking 1 in 12 people live with either chronic #hepatitis B or C. http://bit.ly/OqCtCQ #worldhepday
11:25 AM - 27 Jul 12

Kaiser Family Found @KaiserFamFound
VIDEO http://ow.ly/cxPIA Check out "The Global Fund: The Next 5 Years" from @aids2012 conference #AIDS2012 #HIV
10:33 AM - 27 Jul 12

Americas Quarterly @AmerQuarterly
AQ's new issue: Lessons from #cholera in the Americas by Jonathan Weigel and Paul Farmer, co-founder of @PIH | http://bit.ly/NYUNU7 #Haiti
Retweeted by Partners In Health
5:45 PM - 26 Jul 12

The Wistar Institute @TheWistar
With #pertussis (whooping cough) on the rise, Wistar's Dr. Ertl comments on "Halting the Backwards Slide…" http://www.wistar.org/wistar-today/wistar-wire/2012-07-26/halting-the-backward-slide-toward-epidemic #vaccines
10:25 AM - 26 Jul 12

AIDS2012 @aids2012
Barton Haynes: Towards an HIV Vaccine: We Now Understand the Face of the Enemy http://youtu.be/8BYcQrce8CI #AIDS2012
Retweeted by IAVI
8:10 PM - 25 Jul 12

CDC Global Health @CDCGlobal
A7: Currently NIH, CDC, DOD, & IAVI do vaccine research in Kenya & are launching new trials of promising new vaccines #CDCiac3 #AIDS2012
Retweeted by IAVI
1:56 PM - 25 Jul 12

APHA @PublicHealth
UK to offer free flu vaccine to all kids, @dhgovuk announces: http://goo.gl/GlJtR
6:09 PM - 25 Jul 12

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