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Vaccines: The Week in Review
23 June 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 and industry sources, key journals and other sources. This summary supports ongoing initiatives of the Center for Vaccine Ethics & Policy, and is not intended to be exhaustive in its coverage. Vaccines: The Week in Review is also posted in pdf form and as a set of blog posts at http://centerforvaccineethicsandpolicy.wordpress.com/. This blog allows full-text searching of some 2,500 entries..

Comments and suggestions should be directed to
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Statement: UNICEF - Report finds millions of children never vaccinated, UNICEF calls for action to reach them

NEW YORK, 20 June 2012 – "The Independent Monitoring Board on progress with global polio eradication reports the significant finding that 2.7 million children in six countries have never been reached with a single polio vaccine. This is a clarion call to accelerate all efforts to reach these unreached children," said Anthony Lake, Executive Director of UNICEF.

"Not only have these millions of children never had a polio vaccine but many of these 'never' children have not been reached by the life-saving benefits of routine immunization. The report calls on all of us to help find and vaccinate these children, make every encounter with these children count, and make history by wiping out this crippling disease.

"As many of these 'never' children live in volatile areas of conflict such as eastern DR Congo, northern Nigeria, the Northwest region of Pakistan, humanitarian space must always be protected and preserved so that the heroes of the polio campaigns – the volunteers, the vaccinators and the social mobilizers – can have full access to children. This is especially the case in a global campaign like the fight against polio.

"The polio campaign is dangerously under-funded. But we are on the verge of victory. Not only can we make history by succeeding in eradicating polio but we will be condemned by history if we fail.

"UNICEF is committed, with partners, to implementing the recommendations outlined in the report such as using polio vaccination campaigns for integrated public health campaigns around good sanitation and nutrition, scaling up use of social mobilization activities so communities take ownership of the health campaigns and finding innovative ways of reaching missed children."
http://www.unicef.org/media/media_62667.html

Report: *Every Missed Child*
Independent Monitoring Board of the Global Polio Eradication Initiative
June 2012
The 44-page report issued in conjunction with the 6th meeting of the IMB.
Pdf:
http://www.polioeradication.org/Portals/0/Document/Aboutus/Governance/IMB/6IMBMeeting/IMB6_Report.pdf

The **Weekly Epidemiological Record (WER) for 22 June 2012**, vol. 87, 25 (pp 241–244) includes: Global Polio Eradication Initiative: 6th meeting of the Independent Monitoring Board; Monthly report on dracunculiasis cases, January–April 2012
http://www.who.int/entity/wer/2012/wer8725.pdf

Global Polio Eradication Initiative: 6th meeting of the Independent Monitoring Board

The Independent Monitoring Board (IMB) was established in November 2010, at the request of the World Health Assembly, to monitor and guide progress of the 2010–2012 Strategic Plan of the Global Polio Eradication Initiative (GPEI). The goal of this plan is to interrupt polio transmission globally by the end of 2012.

The IMB held its 6th meeting on 15–17 May 2012, in London, United Kingdom. Following this meeting the IMB issued its 5th report1 to the heads of WHO, the US Centers for Disease Control and Prevention (CDC), UNICEF, Rotary International, and the Bill & Melinda Gates Foundation's Global Health Program. This report summarizes the conclusions of the IMB.

1. Polio is no longer present in India.
No case of poliomyelitis has been reported from Angola or the Democratic Republic of Congo since the beginning of 2012, and Chad has reported only 3 cases. In Pakistan, less than half the number of poliomyelitis cases occurred in the first 4 months of 2012 than during the same period in 2011. However both Afghanistan and Nigeria have seen many more poliomyelitis cases in 2012 compared to the same period in 2011.

2. Among the 6 persistently affected countries, 2.7 million children have never received a single dose of polio vaccine, an unacceptable situation.
The precise reasons for "Every Missed Child" – not only those who have never received 1 dose – should be exposed and rapid corrective action taken.

3. During its meeting, the IMB spoke of a crisis because:
(i) recent successes have created a unique window of opportunity, which must not be lost;
(ii) a funding shortfall threatens to undermine the increasing containment of the polio virus;
(iii) an explosive resurgence in the immediate future would see country after country under attack from a disease against which their children were considered to be protected.

4. In its latest report, the IMB highlights a number of key and urgent actions on which the GPEI must focus in order to avert this crisis.
☐The primary risk to the programme is its precarious financial situation. Under-financing is not compatible with the ambitious goal of stopping polio transmission globally. Currently, vaccination campaigns are being cancelled, thereby escalating the risk of an explosive return of polio at a time when it is at its lowest recorded level.

☐Greater emphasis on the "global public good" of polio eradication will drive the programme forward. Currently, participation in eradication efforts and the donation of resources are uneven. The 65th World Health Assembly adopted a resolution declaring polio to be a global health emergency. The IMB hopes that this will bring countries together once more in a common cause.
☐Consistently high quality vaccination and surveillance must be achieved everywhere, not only in 'islands of excellence'. Considerable improvements to the programme's management approach have been set in motion, but the required degree of change has not yet been achieved.
☐Stakeholders need to know what is planned for the months and years after 2012. This is a far-reaching and complex matter. Planning for the "polio end-game" is under way but the IMB is not convinced that the fundamental nature of what is required is fully understood by the programme.
☐Further outbreaks risk substantially harming the programme, bolstering transmission and diverting finances and focus. More innovative methods need to be used to eliminate the possibility of outbreaks more comprehensively.
☐The programme operates too much in isolation. Children missed by polio teams may be reached by other services. Stronger, more effective alliances can bring eradication closer.

5. The IMB meeting focused on the "sanctuaries" for the polio virus – those discrete geographical locations with large numbers of missed children where the virus can take safe refuge and multiply. In these sanctuaries, reaching missed children is the first
operational objective. The extraordinary challenges faced require extraordinary actions, determination and resolve.

6. Of greatest current concern are the polio virus sanctuaries in Afghanistan and Nigeria:
☐In Afghanistan insecurity has been an explanation for poor performance in the past, but it is a cause for considerable concern that although security has recently begun to show signs of improvement, poliomyelitis case numbers are rising.
☐Nigeria is now the only country to have 3 types of polio virus and consequently it poses a substantial risk to the global goal, in part because many of its neighbouring countries are vulnerable to the spread of infection.

7. The IMB concluded that although the programme has missed all but one of its 2010–2012 Strategic Plan milestones, its operation has strengthened considerably in the last 6 months.

In order to capitalize on this once-in-a-generation opportunity the **IMB made 7 recommendations:**
i) An emergency meeting of the Global Polio Partners Group should be held to mobilize urgent funding to re-instate cancelled vaccination campaigns.
ii) The Polio Oversight Board should continuously review the effectiveness of the programme in order to achieve improvement.
iii) A polio "end-game and legacy" strategy should be published urgently for public and professional consultation.
iv) A plan to integrate polio vaccination into the humanitarian response to the food crisis and conflict in West Africa should be rapidly formulated and implemented. Alliances with all relevant programmes need to be urgently explored, in order to benefit from every contact.

v) The presence of polio virus in environmental samples should trigger action equivalent to that of an outbreak response (this recommendation subject to rapid feasibility review).
vi) Contingency plans should be drawn up immediately to invoke the International Health Regulations to require travellers from polio-affected countries to carry a valid vaccination certificate.
vii) The number of missed children should henceforth be the predominant metric for the programme.

The IMB will continue to provide a frank and independent assessment of the progress being made towards global interruption of polio transmission. The next IMB meeting will be held in London, United Kingdom, on 29–31 October 2012.

Joint Statement: Rio+20 puts health at the heart of development goals
22-06-2012

The United Nations Conference on Sustainable Development, Rio+20, recognizes in its final document the fundamental need to act on the social and environmental determinants of health to create inclusive, equitable, economically productive and healthy societies. Equity should be at the core of this task, with special attention given to the poor and the most vulnerable.

WHO/Europe, the Pan American Health Organization and WHO headquarters, taking part in the Conference, advocated for health as both a contribution to and a beneficiary of sustainable development.

Health in all policies is a key approach to sustainable development

Reductions in air, water and chemical pollution can prevent up to one fifth of the overall European burden of disease. Great opportunities for progress lie in reducing consumption levels and fostering healthy and green developments in energy, transport, housing, urban management and agriculture, as well as in the health sector. Sustainable development calls for a new health governance approach, introducing the health dimension into decision-making processes across all public policy areas.

Good health is a prerequisite for achieving sustainability goals

Universal health care is an important step in enhancing the health status of populations; it requires a multisectoral approach coupled with an overall strengthening of health systems. Promoting affordable access to prevention, treatment and care strengthens the fight against communicable diseases — such as HIV/AIDS, malaria and tuberculosis — and noncommunicable diseases — such as cancers and cardiovascular diseases — which remain a serious global concern, as well as emerging diseases and challenges arising from demographic change, including migration.

Health is a way of measuring the impact of sustainable development policies

Monitoring progress towards sustainable development goals means being able to evaluate the economic, environmental and social dimensions of policy. Investment in health alone cannot solve the problems of sovereign debt, volatile food prices or the environmental impact of climate change. But people's health remains vitally important as a measure of the impact of policies in all these areas and this should be fully acknowledged by those aiming to promote a fairer, greener and more sustainable approach to globalization. Not only are health outcomes readily measurable, health concerns are immediate, personal and local.

http://www.euro.who.int/en/what-we-do/health-topics/environment-and-health/Climate-change/news/news/2012/06/rio20-puts-health-at-the-heart-of-development-goals

Statement: Remarks by Anthony Lake, UNICEF Executive Director on Sustainable Development in an Unequal World at Rio+20

Rio de Janeiro, Brazil, June 20, 2012

Extract (concluding remarks)

…In short: a pro-equity strategy is not only right in principle; it is right in practice. To that end, over the last two years, UNICEF has reviewed our programs through an equity lens, and is now working, with our partners, to reach still more of the children our efforts are missing. The almost 20% of children still not covered by routine vaccination … The 67 million children still out of primary school … The infants who die, unnecessarily, from the complications of preterm birth or from pneumonia and diarrhea, the other biggest – and highly treatable – killers of children.

Last week, the global community came together at a conference in Washington DC hosted by Ethiopia, India, and the United States, in collaboration with UNICEF and WHO, to reach those unreached children – by rallying again around the goal of child survival.

More than seven hundred representatives of civil society … faith-based organizations … the private sector … and some seventy governments reviewed significant new modeling, based on innovations in health and education, which shows not only that it is possible to achieve dramatic reductions in child mortality by 2035 – but also that it is feasible to greatly decrease that most outrageous of inequities: the huge gap in child mortality between the poorest and richest nations.

Almost sixty governments, and many dozens of non-governmental organizations, signed a pledge on the spot to redouble efforts to achieve that goal, through measurable benchmarks. We expect many more to follow suit in the coming weeks and months.

In doing so, they will renew the promise the world made in 1990 at the World Summit for Children … in MDGs 4 and 5 … and ten years ago in the General Assembly Resolution on a World Fit for Children.

The goal of 2035 represents a giant step towards what must be our ultimate ambition – a world in which no child dies of preventable causes, of treatable disease.

And with a view to increasing our efficiency and achieving ever better results, UNICEF has developed a new tool to monitor our progress and accelerate those results. Because results are all that matter … if children's rights are to be realized.

If we can increase vaccinations so that fewer children die of diseases we know how to prevent … if we can provide more micronutrients so that young brains and young bodies grow strong … if we can give more boys and girls a quality education, we will give children everywhere – this generation and the next – the start in life they deserve. And make sustainable the future of which they dream.

That is their right … our responsibility … and, I hope, one legacy of Rio+ 20.

[Editor's Note: We continue to monitor the emergence and performance of broad collaborative initiatives involving governments, civil society organizations (CSOs), international organizations, NGOs, industry and academia for models which might

inform global immunization (i.e. GVAP) in terms of governance, modes of collaboration, metrics, roles and accountability frameworks.]

The World Bank announced that more than 80 nations, private companies and international organizations declared support for Global Partnership for Oceans, "signaling their commitment to work together around coordinated goals to restore the world's oceans to health and productivity." Support for a "Declaration for Healthy and Productive Oceans to Help Reduce Poverty" at the Rio+20 conference are 17 private firms and associations "including some of the largest seafood purchasing companies in the world, representing over $6 billion per year in seafood sales, as well as one of the world's largest cruise lines." The World Bank noted that supporter include 13 nations, 27 civil society groups, 17 private sector firms and associations, seven research institutions, five UN agencies and conventions, seven regional and multi-lateral organizations and seven private foundations.

The Global Partnership for Oceans is described as "a new and diverse coalition of public, private, civil society, research and multilateral interests working together for healthy and productive oceans. It was first announced in February 2012 by World Bank President Robert B. Zoellick at the World Oceans Summit and has been gathering growing support."
http://www.worldbank.org/en/news/2012/06/16/more-than-80nations-private-companies-international-organizations-declare-support-global-partnership-oceans

Twitter Watch *[accessed 23 June 2012 – 09:17]*

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.

WHO @WHO
#Rioplus20 reiterates the importance of better sanitation in cities, villages to protect against the spread of infectious diseases
8:08 PM - 22 Jun 12

NIH for Health @NIHforHealth
The Real Promise of Mobile Health Apps: Scientific American
http://www.scientificamerican.com/article.cfm?id=real-promise-mobile-health-apps&WT.mc_id=SA_sharetool_Twitter via @sciam
10:13 AM - 22 Jun 12

Mirta Roses Periago @mirtaroses
Lack of universal access to water & sanitation in the island Hispaniola is a growing social, economic & health issue http://bit.ly/MkBGjF
Retweeted by PAHO/WHO
4:08 PM - 21 Jun 12

UNICEF @UNICEF
UNICEF calls for action to reach mns of children never vaccinated for #polio
http://uni.cf/LkVuWC @carlzimmer @hari @specterm @mpkolmar

11:27 AM - 21 Jun 12

Sabin Vaccine Inst. @sabinvaccine
de Quadros gets "Development Cooperation" award for work w @WHO to eradicate smallpox & eliminate measles & polio in the Western Hemisphere
9:51 AM - 21 Jun 12

WHO @WHO
We need to start thinking about health as a way of measuring progress across all pillars of sustainable development policy #Rioplus20
4:17 AM - 21 Jun 12

World Bank @WorldBank
Heads of state stepping up commitments to implement natural capital accounting http://bit.ly/MrLREQ #Rioplus20 #naturalcapital
12:34 AM - 21 Jun 12

World Bank @WorldBank
What is Natural Capital Accounting? Video explains: http://bit.ly/Ki6PTl #Rioplus20 #naturalcapital
11:30 PM - 20 Jun 12

M&R Initiative @MeaslesRubella
'It's unjustifiable that there are cases of measles in Europe." Expert Ciro de Quadros talks candidly to El Mundo.
http://www.elmundo.es/elmundosalud/2012/06/19/biociencia/1340130308.html
10:00 PM - 20 Jun 12

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*

ACIP Handbook for Developing Evidence-based Recommendations

Centers for Disease Control and Prevention (CDC. Atlanta, GA)
Version 1.1 – 2012
Ahmed et al.
Practical handbook for use by ACIP Work Groups in development of evidence-based recommendations for presentation to the Advisory Committee on Immunization Practices.
Pdf: http://www.cdc.gov/vaccines/recs/acip/GRADE/downloads/handbook.pdf

Global Fund: *Governance Handbook*
Multi-section pdf document
Undated
http://www.theglobalfund.org/en/board/
This multi-section handbook opens with an eight-page Overview which includes discussion of the Global Fund's 2012 – 2016 Strategy Framework and Guiding Principles:
Global Fund Guiding Principles
The Global Fund was founded on a set of principles that guides everything the organization does, from governance to grant-making. As stated in the Global Fund Framework Document, these are to:
1 Operate as a financial instrument, not as an implementing entity
2 Make available and leverage additional financial resources
3 Support programs that evolve from national plans and priorities
4 Operate in a balanced manner in terms of regions, diseases and interventions
5 Pursue an integrated, balanced approach to prevention and treatment
6 evaluate proposals through independent review processes
7 Operate with transparency and accountability
8 Strengthen and reflect the involvement of those infected and affected, scaling up and reflecting existing national programs and priorities.
Section 1; Overview
download (PDF - 2 MB)
Section 2: Core Structures
download (PDF - 2 MB)
Section 3: Funding Model
download (PDF - 1 MB)
Section 4: Global Fund Board
download (PDF - 1 MB)
Section 5: Coordinating Group
download (PDF - 987 KB)
Section 6: Standing Committees
download (PDF - 1 MB)
Section 7: Board Constituencies
download (PDF - 1 MB)
Section 8: Board Operations
download (PDF - 1 MB)
Section 9: Financial Resources
download (PDF - 1 MB)
Vocabulary
download (PDF - 242 KB)

Paper: *The Global Partnership for Effective Development Cooperation*
Brookings - Series: Global Views | No. 35 of 35
June 2012
Homi Kharas
http://www.brookings.edu/research/papers/2012/06/06-global-partnership-kharas
INTRODUCTION

These are important times for how the world manages the annual flow of around $200 billion in development cooperation assistance to developing countries. A number of changes in global international development cooperation are in the offering: within a one month span, development issues will be taken up by the G-20 at the Leaders' Summit at Los Cabos, by the United Nations at its Rio+20 Summit, and by Jim Kim upon taking over as the first ever development professional to become president of the World Bank. The key issues on the table are implementation of the Millennium Development Goals, building consensus on a new set of post-2015 Sustainable Development Goals, implementing a New Deal on fragile states, and closer integration of environmental, security, trade, investment and development agendas.

There is now an opportunity to establish a new paradigm and governance structure for coordinating the many state and non-state actors engaged in development cooperation. A new Global Partnership for Effective Development Cooperation is taking shape, backstopped by the Development Assistance Committee (DAC) of the Organization for Economic Cooperation and Development (OECD) and the United Nations Development Program (UNDP). Establishing this partnership was one of the key outcomes of the Busan High Level Forum on Aid Effectiveness held in December 2011.

On June 28-29, 2012, the Working Party on Aid Effectiveness, a DAC-supported international partnership for aid effectiveness, will hold a plenary meeting in Paris which should conclude with three consequential outcomes: (i) it will bring into being a new Global Partnership for Effective Development Cooperation with a governance structure that truly reflects the multi-stakeholder nature of development today; (ii) it will dissolve itself, marking one of the first times that a multilateral structure is actually replaced by a more suitable mechanism; and (iii) it will adopt a set of indicators for monitoring global progress towards more effective development cooperation.

Already, the outlines of the new partnership are becoming clear, thanks to a transparent process of meetings and dialogue. There is much to be encouraged about, but as with most efforts for institutional change, the devil is in the details. At first glance, while the Global Partnership promises to deliver substantial and significant improvements in governance, its proposed new monitoring indicators are still rooted in the past and do not reflect the new style of development cooperation that is expected in the next decade. This policy paper explores the approach to building indicators and suggests improvements to ensure better development cooperation.

Full Paper download:
http://www.brookings.edu/~/media/research/files/papers/2012/6/06%20global%20partnership%20kharas/06%20global%20partnership%20kharas.pdf

Report: *Taking Stock: How Global Biotechnology Benefits from Intellectual Property Rights*

Biotechnology Industry Organization (BIO)
June 2012
Meir Perez Pugatch, David Torstensson and Rachel Chu of the Pugatch Consilium
Pdf: http://www.bio.org/sites/default/files/Pugatch%20Consilium%20-%20Taking%20Stock%20Final%20Report%20%282%29.pdf.

BIO released a report on the role of intellectual property rights in encouraging upstream research and development as well as downstream commercialization of biotechnology at the 2012 BIO International Convention.

Joseph Damond, BIO Senior Vice President of International Affairs, said, "This report is further proof of the positive impact of intellectual property rights in both established and emerging economies, and will be a useful tool as we work with the many countries seeking to grow the biotechnology industry. We felt it was important to provide empirical evidence and case studies for a more informed discussion on the role of intellectual property in global economic development and in commercializing innovative products for patients and other consumers."

The report outlines "how intellectual property rights and technology transfer mechanisms encourage collaboration and lead to the research and development of new biotechnologies, particularly in emerging and developing economies."
http://www.bio.org/media/press-release/intellectual-property-encourages-collaboration-rd-developing-economies

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
19 June 2012, Vol. 156. No. 12
http://www.annals.org/content/current

Editorials

Cervical Cancer Screening: Primum Non Nocere [FREE]]
Nora Kizer, MD, MSCI; and Jeffrey F. Peipert, MD, PhD
Extract

The Hippocratic Oath cautions us to abstain from doing harm. We must remember this basic tenet of our profession as we address new evidence and guidelines for cervical cancer screening. The purpose of screening is to identify at-risk individuals and to enable early intervention to reduce mortality and suffering. As such, screening should fit the ideal of doing no harm, yet providing substantial benefit.

However, screening tests can unintentionally cause significant harm. False-positive test results can lead to overdiagnosis; misdiagnosis; and the potential for unnecessary diagnostic testing, procedures, and treatments and their inherent risks. For these reasons, screening tests, especially for a disease with a low incidence, must have high sensitivity in addition to acceptable specificity. Tradeoffs of increased sensitivity for decreased specificity can shift the balance of benefits and harms.

It is important to consider these issues as one reads the U.S. Preventive Services Task Force (USPSTF) most current recommendations for cervical cancer screening in this issue (1). The American Cancer Society, American Society for Colposcopy and Cervical

Pathology, and American Society for Clinical Pathology (ACS/ASCCP/ASCP) have also published new joint cervical cancer prevention guidelines based on a broadly attended consensus conference (2). These 2 sets of recommendations are largely congruent and are important steps forward to maximally efficient and effective cervical cancer screening. Health care providers should welcome these new recommendations with enthusiasm and incorporate them into routine clinical practice…

…Unlike the USPSTF recommendations, the ACS/ASCCP/ASCP guidelines address women who have received the HPV vaccine, recommending that they continue routine screening. Although evidence shows the vaccine to be highly effective at preventing HPV 16/18–associated CIN3+ lesions in individuals not infected with HPV, 30% of cases of cervical cancer are attributable to other HPV strains. In addition, the vaccine's true duration of coverage is unknown, which is of particular concern for women who received vaccination during early adolescence. Future evidence may show that less frequent screening is appropriate for vaccinated women, but given the limitations of current research and the low vaccination coverage among U.S. adolescents prior to first intercourse, the screening protocol should be the same for both vaccinated and unvaccinated women…

… Promotion of the HPV vaccine before first intercourse, when prophylactic vaccination is most beneficial, is another important prevention message. The United States lags far behind other health care systems, such as those in Australia and the United Kingdom, with only 32% of eligible women who have received the complete HPV 16/18 vaccine (4). Vaccinating young women before the onset of sexual activity should be encouraged (5)….

Clinical Guidelines

Screening for Cervical Cancer: U.S. Preventive Services Task Force Recommendation Statement [FREE]

Virginia A. Moyer, MD, MPH

British Medical Bulletin

Volume 102 Issue 1 June 2012

http://bmb.oxfordjournals.org/content/current

[Reviewed earlier; No relevant content]

British Medical Journal

23 June 2012 (Vol 344, Issue 7862)

http://www.bmj.com/content/344/7862

Clinical Review

Communicating risk

Haroon Ahmed

BMJ 2012;344:e3996 (Published 18 June 2012)

Summary points

- Risk communication is the open two way exchange of information and opinion about harms and benefits; it aims to improve understanding of risk and promote better decisions about clinical management
- Strong evidence suggests that the format in which risk information is presented affects patients' understanding and perception of risk

- There is emerging evidence that effective risk communication can lead to more informed decision making in screening
- Decision aids can be an effective adjunct to risk communication and can improve knowledge, awareness, and decision making
- The presentation of data uncertainty is one of the most difficult aspects of risk communication

Bulletin of the World Health Organization
Volume 90, Number 6, June 2012, 401-476
http://www.who.int/bulletin/volumes/90/6/en/index.html
[Reviewed earlier]

Cost Effectiveness and Resource Allocation
(Accessed 23 June 2012)
http://www.resource-allocation.com/
[No new relevant content]

Emerging Infectious Diseases
Volume 18, Number 7—July 2012
http://www.cdc.gov/ncidod/EID/index.htm
[Reviewed earlier]

Global Health Governance
Latest Issue: 22 June 2012
http://blogs.shu.edu/ghg/
[Editor's Note: We continue to broadly monitor the literature for strategies and analysis which might inform global immunization (i.e. GVAP) in terms of governance, modes of collaboration, metrics, roles, legal options, and accountability frameworks.]
A WHO-UNICEF Global Code of Practice on the Marketing of Unhealthy Food and Beverages to Children
Allyn L. Taylor, Ibadat S. Dhillon, Lenias Hwenda
The High-level Meeting of the United Nations General Assembly on the Prevention and Control of Non-Communicable Diseases ("NCDs") has drawn much-needed attention for the development and implementation of a cogent global strategy to reduce risk factors related to alcohol abuse and unhealthy diets starting in childhood. Absent in the Political Declaration of the High Level Meeting ("the NCD Political Declaration"), however, is any proposal for adoption of an international legal framework to advance cooperation in addressing these global challenges. The lack of a global legal framework to guide national action and international cooperation to reduce risk factors related to alcohol abuse and unhealthy diet significantly hinders the capacity of nations worldwide to unilaterally and collectively curb the expanding NCD epidemics. Recognizing the growing burden of NCDs, a number of commentators have suggested the adoption of comprehensive treaties or framework conventions on obesity, or alcohol or both.1 Given the legal, political, budgetary, and time-related limitations to the development and

adoption of all-encompassing treaty regimes to address obesity and alcohol abuse, the authors recommend an alternative legal strategy to counter these rising NCD epidemics. In particular, the authors call for the prompt adoption of a WHO/UNICEF Global Code of Practice on the Marketing of Unhealthy Foods and Beverages to Children. Such a non-binding international legal instrument has significant advantages over a treaty approach at the present time. It would provide a much-needed step towards advancing meaningful engagement with and holding to account all relevant actors, including national governments, private industry, and UN agencies, in protecting children everywhere from harm. The WHO Framework Convention on Tobacco Control ("FCTC") addresses one of the major risk factors contributing to NCDs by establishing a global legal framework to counter the tobacco pandemic; the global community should now act collectively to establish a legal architecture to regulate a central component of these two other major risk factors.

Enacting Accountability- Networked Governance, NGOs and the FCTC

Raphael Lenchuha, Anita Kothari, and Ronald Labonté

Accountability is a pressing challenge within the present system of international lawmaking. Scholars continue to examine the role of non-governmental organizations (NGOs) to encourage the accountability of governments during this process. The negotiation of the World Health Organization (WHO) Framework Convention on Tobacco Control (FCTC) provides an important context to examine accountability as it is and was inherently influenced by corporate interests and government economics, and involved extensive NGO participation. We conducted in depth interviews and document analysis to examine the role of Canadian NGO representatives in the negotiation of the FCTC. We highlight two sets of findings about Canadian NGO enactment of accountability during FCTC negotiations. First, we describe the efforts of the NGOs to ensure that the FCTC gave precedence to population health over tobacco-related trade agreements (external accountability) between WHO member states. We then describe the efforts of this group to include NGOs from low and middle income countries (internal accountability). The implications of these findings within the broader discourse on accountability in international lawmaking are discussed.

Globalization and Health

[Accessed 23 June 2012]

http://www.globalizationandhealth.com/

Review

Developed-developing country partnerships: Benefits to developed countries?

Syed SB, Dadwal V, Rutter P, Storr J, Hightower JD, Gooden R, Carlet J, Bagheri Nejad S et al.

Globalization and Health 2012, 8:17 (18 June 2012)

Abstract (provisional)

Developing countries can generate effective solutions for today's global health challenges. This paper reviews relevant literature to construct the case for international cooperation, and in particular, developed-developing country partnerships. Standard database and web-based searches were conducted for publications in English between 1990 and 2010. Studies containing full or partial data relating to international cooperation between developed and developing countries were retained for further analysis. Of 227 articles retained through initial screening, 65 were included in the final analysis. The results were two-fold: some articles pointed to intangible benefits accrued

by developed country partners, but the majority of information pointed to developing country innovations that can potentially inform health systems in developed countries. This information spanned all six WHO health system components. Ten key health areas where developed countries have the most to learn from the developing world were identified and include, rural health service delivery; skills substitution; decentralisation of management; creative problem-solving; education in communicable disease control; innovation in mobile phone use; low technology simulation training; local product manufacture; health financing; and social entrepreneurship. While there are no guarantees that innovations from developing country experiences can effectively transfer to developed countries, combined developed-developing country learning processes can potentially generate effective solutions for global health systems. However, the global pool of knowledge in this area is virgin and further work needs to be undertaken to advance understanding of health innovation diffusion. Even more urgently, a standardized method for reporting partnership benefits is needed--this is perhaps the single most immediate need in planning for, and realizing, the full potential of international cooperation between developed and developing countries.

The complete article is available as a provisional PDF. The fully formatted PDF and HTML versions are in production.

Health Affairs
June 2012; Volume 31, Issue 6
http://content.healthaffairs.org/content/current
Theme: Focus On The Care Span For The Elderly & Disabled
[No relevant content]

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

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Volume 7 - Issue 02 - April 2012
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[Reviewed earlier]

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Volume 27 Issue 4 July 2012
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[Reviewed earlier]

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Volume 8, Issue 6 June 2012

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[Reviewed earlier]

International Journal of Infectious Diseases
Volume 16, Issue 7, Pages e469-e572 (July 2012)
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[Reviewed earlier]

JAMA
June 20, 2012, Vol 307, No. 23
http://jama.ama-assn.org/current.dtl
Viewpoint | June 20, 2012 ONLINE FIRST
A Lifecycle Approach to the Evaluation of FDA Approval Methods and Regulatory Actions - Opportunities Provided by a New IOM Report
Bruce M. Psaty, MD, PhD; Eric M. Meslin, PhD; Alasdair Breckenridge, MD, FRCP
[Free full text: http://jama.jamanetwork.com/article.aspx?articleid=1153777]
Committee on Ethical and Scientific Issues in Studying the Safety of Approved Drugs. Ethical and Scientific Issues in Studying the Safety of Approved Drugs. Washington, DC: National Academies Press; 2012. http://www.iom.edu/Reports/2012/Ethical-and-Scientific-Issues-in-Studying-the-Safety-of-Approved-Drugs.aspx.

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 2 July 15, 2012
http://www.journals.uchicago.edu/toc/jid/current
MAJOR ARTICLES AND BRIEF REPORTS
VIRUSES
Hung Fu Tseng, Margaret Chi, Ning Smith, Stephen M. Marcy, Lina S. Sy, and Steven J. Jacobsen
Editor's choice: Herpes Zoster Vaccine and the Incidence of Recurrent Herpes Zoster in an Immunocompetent Elderly Population
J Infect Dis. (2012) 206(2): 190-196 doi:10.1093/infdis/jis334
Abstract
Background. The benefit of vaccinating immunocompetent patients who have had shingles has not been examined. The study assessed the association between vaccination and the incidence of herpes zoster recurrence among persons with a recent episode of clinically diagnosed herpes zoster.
Methods. This is a matched cohort study in Kaiser Permanente Southern California. Study populations were immunocompetent elderly individuals ≥60 years old with a

recent episode of herpes zoster. Incidence of recurrent herpes zoster was compared between the vaccinated and the unvaccinated matched cohorts.
Results. A total of 1036 vaccinated and 5180 unvaccinated members were included. On the basis of clinically confirmed cases, the incidence of recurrent herpes zoster among persons aged <70 years was 0.99 (95% confidence interval [CI], .02–5.54) and 2.20 (95% CI, 1.10–3.93) cases per 1000 person-years in the vaccinated and unvaccinated cohorts, respectively. The adjusted hazard ratio was 0.39 (95% CI, .05–4.45) among persons aged <70 years and 1.05 (95% CI, .30–3.69) among persons aged ≥70 years.
Conclusions. The risk of herpes zoster recurrence following a recent initial episode is fairly low among immunocompetent adults, regardless of vaccination status. Such a low risk suggests that one should evaluate the necessity of immediately vaccinating immunocompetent patients who had a recent herpes zoster episode.

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
July 2012; 61 (Pt 7)
http://jmm.sgmjournals.org/content/current
Vaccines and adjuvants – Special Issue
Karen Robinson and Petra Oyston

A symposium on vaccines was held at the SGM Spring Conference in Harrogate on 11–14 April 2011. The symposium, which attracted over 140 attendees, consisted of 32 invited presentations and eight offered papers. Speakers, selected from the worlds of academia and industry, travelled from around the globe, including the USA, Australia, Africa and Europe, as well as the UK and Ireland, to showcase the leading research on vaccines for major public health diseases.

The main aim of the symposium was to discuss the current difficulties encountered in vaccine development and to comprehensively cover the latest advances in vaccines against major bacterial, viral, fungal and parasitic infections. The huge impact of such pathogens on affected populations was presented by some speakers who had been searching for effective vaccines for many years and this provided some real-life insights into the problems that researchers are addressing. In addition to discussions on optimal choice of vaccine antigens, there was also an emphasis on vaccine-mediated stimulation of immune responses, both systemically and for the protection of mucosal surfaces, which constitute major portals for entry of pathogens into the body. Several novel adjuvants and vaccine-delivery technologies were highlighted and current findings on the currently poorly understood mechanisms of action of traditional adjuvants were described. In addition, there were also very interesting presentations on immunization strategies to block the transmission, as opposed to infection, of pathogens and how

immune evasion strategies of some pathogens can be a problem, or may even be harnessed, in vaccine development.

Contributors to the meeting were invited to submit review articles for this vaccine-themed special issue of the Journal of Medical Microbiology. Articles were subjected to an independent peer-review process and these seven reviews were accepted as a representation of the major themes discussed at the symposium. The special issue starts off with a review by ourselves (Oyston & Robinson, 2012), outlining the current major challenges in vaccine development. This includes the hurdles arising from how vaccine research is usually conducted and also the financial difficulties associated with vaccine production and use. We also review some initiatives that have been attempted in order to deliver new vaccines to the populations most in need.

Vaccines remain elusive for certain organisms or groups of pathogens, despite there being a great need for them and a lot of intensive research. We included three papers exemplifying this, which review the main challenges and discuss the strategies being employed. The first of these, by Edwards (2012), is a review of the advances being made in the development of fungal cell-wall vaccines. This article, which mainly focuses on Candida albicans, but also describes vaccine development for several other important fungal infections, describes the increasing clinical need for such vaccines and highlights the fact that none have yet been approved for use. Innovative vaccine strategies are described, including the successful preclinical use of a live attenuated Candida strain and a heat-killed Saccharomyces vaccine formulation that protects mice against a variety of fungal infections. The leading rALs3p-N Candida vaccine is also reviewed, describing its successful performance in recent Phase I clinical trials and its protective mechanisms in mice.

Bijker & Sauerwein (2012) provide a very interesting perspective on strategies for successful immunization against malaria. This important goal has not yet been achieved despite work by a huge number of research teams worldwide and many millions of dollars of funding over at least 60 years. It has been known for some time that recurrent natural infections in endemic areas elicit immunity. The authors focus on the idea that innovative use of antimalaria drugs could provide the key to safely generating protective immunization. It may be possible to avoid many of the problems with vaccine development, such as poor immunogenicity of parasite antigens and finding the optimal delivery system, by using controlled human malaria infections under chemoprophylaxis to induce effective protective immunity. Recent data from human volunteer studies and the pros and cons of such a strategy are discussed from the point of view of visitors to, or inhabitants of, endemic areas.

The paper by Williamson & Oyston (2012), reviews the natural history of Yersinia pestis infections and the advances being made towards achieving a protective human plague vaccine. This dangerous pathogen has been a scourge of humanity for centuries. A crude killed vaccine has been used historically but has been known to provide suboptimal protection. The increased awareness of biodefence needs in recent years has reinvigorated research in this area, applying modern techniques in vaccinology to an ancient problem. It is interesting how, despite the advantages of conducting research in the 'post-genomic era', the immunogenic, protective antigens pursued were discovered by empirical methods in the first half of the last century. Thus, although there has been much hype about exploiting genomic information for 'reverse vaccinology', the traditional methods should not be forgotten or ignored. This article also highlights the considerable challenges that now exist for licensing vaccines in development, such as

the requirements for robust assays for correlates of protection and relevant animal models of human disease.

The second part of the symposium focused on vaccine technologies and we selected three review articles along this theme. Many bacterial vaccines currently in use in humans are composed of protein coupled to a glycan, such as capsular polysaccharide. The production of these conjugates is problematic and requires an expensive multi-step process. Terra et al. (2012) review the discovery of the Campylobacter jejuni N-linked glycosylation system and how it may be harnessed in the ready production of novel and inexpensive glycoconjugate vaccine antigens using a recombinant E. coli-based expression system.

Two further papers review the use and mechanisms of action of adjuvants, both old and new. The first of these, by Kool et al. (2012), is concerned with alum which has been the main adjuvant in clinical use over many decades. Despite its widespread use, information on its mode of action is only just coming to the fore. Having a detailed knowledge of how it stimulates the immune system is vital for determining when it may be best utilized and how it may be improved in future formulations. In contrast, Baz Morelli et al. (2012) describe a recently developed adjuvant, ISCOMATRIX™. This formulation has undergone extensive preclinical and clinical testing in a variety of studies. Unlike alum, there has been much work undertaken to understand the mechanism of action in order to facilitate licensing. This adjuvant appears to stimulate CD8+ T-cell responses as well as CD4+ cells and antibodies. It has been used with a wide variety of vaccine antigen systems, including those for control of infectious diseases and cancer. This article reviews the nature of the adjuvant, how it is currently thought to stimulate the immune system and the results of various studies in animal models and humans, with an update on very recent findings.

In summary, there are many efforts under way to develop new vaccines or to develop adjuvants to make current and novel vaccines more effective. The research featured in this themed volume draws out many of the challenges facing vaccine research and development efforts generally, using specific examples.

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Kool M., Fierens K., Lambrecht B. N.
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Terra V. S., Mills D. C., Yates L. E., Abouelhadid S., Cuccui J., Wren B. W.
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Williamson D., Oyston P. C. F.
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Abstract/FREE Full Text

The Lancet
Jun 23, 2012 Volume 379 Number 9834 p2313 - 2400
http://www.thelancet.com/journals/lancet/issue/current
World Report
Thiomersal vaccines debate continues ahead of UN meeting
Nayanah Siva
Experts are meeting for the fourth time at the end of June to discuss a global treaty on mercury. But such an agreement could hinder vaccination programmes worldwide. Nayanah Siva reports.

The Lancet Infectious Disease
Jun 2012 Volume 12 Number 6 p423 - 496
http://www.thelancet.com/journals/laninf/issue/current
[Reviewed earlier]

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May–June 2012; 32 (3)
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[Reviewed earlier]

The Milbank Quarterly
June 2012 Volume 90, Issue 2 Pages 215–416
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Original Articles
The Rise and Fall of the Lyme Disease Vaccines: A Cautionary Tale for Risk Interventions in American Medicine and Public Health (pages 250–277)
ROBERT A. ARONOWITZ
Article first published online: 18 JUN 2012 | DOI: 10.1111/j.1468-0009.2012.00663.x
Abstract
Context: Two vaccines to prevent Lyme disease (LD) were developed and tested in the 1990s. Despite evidence of their safety and efficacy in clinical trials and initial postmarketing surveillance, one vaccine was withdrawn before the regulatory review and the other after only three years on the market. An investigation of their history can illuminate (1) the challenges faced by many new risk-reducing products and practices and (2) the important role played by their social and psychological, as distinct from their

biomedical or scientific, efficacy in how they are used, and their ultimate market success or failure.
Methods: This article reviewed medical and popular literature on LD vaccines, analyzed the regulatory hearings, and conducted interviews with key participants.
Findings: Even if proved safe and effective, LD vaccines faced regulatory and market challenges because the disease was geographically limited, treatable, and preventable by other means. Pharmaceutical companies nevertheless hoped to appeal to consumers' desire for protection and control and to their widespread fear of the disease. The LD advocacy community initially supported the vaccines but soon became critical opponents. The vaccines' success was seen as threatening their central position that LD was chronic, protean, and difficult to treat. The activists' opposition flipped the vaccines' social and psychological efficacy. Instead of the vaccines restoring control and reducing fear, demand was undermined by beliefs that the vaccines caused an LD-like syndrome.
Conclusions: The social and psychological efficacy of many risk-reducing practices and products, such as new "personalized vaccines," is to provide insurance and reduce fear. Yet the actions of self-interested actors can easily undermine this appeal. In addition to evaluating the scientific efficacy and safety of these practices and products, policymakers and others need to understand, anticipate, and perhaps shape the potential social and psychological work they might do.

The First Rotavirus Vaccine and the Politics of Acceptable Risk (pages 278–310)

JASON L. SCHWARTZ
Article first published online: 18 JUN 2012 | DOI: 10.1111/j.1468-0009.2012.00664.x
Abstract
Context: Vaccination in the United States is a frequent source of controversy, with critics alleging failures by public health officials to adequately identify, monitor, and respond to risks associated with vaccines. In response to these charges, the case of RotaShield, a vaccine withdrawn in 1999 following confirmation of a serious adverse event associated with its use, is regularly invoked as evidence of the effectiveness of current vaccine safety activities.
Methods: This article examines the history of RotaShield, with particular attention paid to decision making regarding its use in the United States and internationally. I reviewed and analyzed federal advisory committee meeting transcripts, international conference reports, government and scientific publications, media coverage, and other primary and secondary source materials. I also conducted six semistructured interviews with former senior officials and advisory committee members at the U.S. Centers for Disease Control and Prevention who participated in decisions regarding the vaccine.
Findings: Decision making regarding RotaShield, including the ultimate withdrawal of its recommendation for use, was shaped significantly by government health officials' concern for preserving public confidence in overall U.S. vaccination efforts amid several unrelated vaccine risk controversies ongoing at that time. This attention to public perception and external pressures occurred in tandem with the evaluation of the quantitative evidence regarding the magnitude and severity of the risk associated with the vaccine. The decisions made in the United States resulted in foreseen but unintended consequences for international use of the vaccine, including in nations where the profile of risks and potential benefits was dramatically different.
Conclusions: As enthusiasm for evidence-based decision making grows throughout medicine and public health, greater explicit attention should be directed to the processes

by which decision makers and their expert advisers evaluate such evidence and translate it into regulation and policy by means of qualitative judgments.

Nature
Volume 486 Number 7403 pp293-434 21 June 2012
http://www.nature.com/nature/current_issue.html
Editorials
Time to open up
If scientists want the public to continue to volunteer for research projects, they must learn to be a lot more forthcoming about the ways in which the information they garner will be used.
Nature | News Feature
Informed consent: A broken contract
20 June 2012
As researchers find more uses for data, informed consent has become a source of confusion. Something has to change.
Erika Check Hayden
http://www.nature.com/news/informed-consent-a-broken-contract-1.10862
Perspectives
Engineering H5N1 avian influenza viruses to study human adaptation
David M. Morens, Kanta Subbarao & Jeffery K. Taubenberger
Engineering influenza viruses to study human adaptation is a controversial area of research, with opinions diverging over the wisdom of publishing the full results of such studies.

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July 2012, Volume 13 No 7 pp623-702
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[No relevant content]

Nature Medicine
June 2012, Volume 18 No 6 pp835-987
http://www.nature.com/nm/journal/v18/n6/index.html
[Reviewed earlier]

Nature Reviews Immunology
June 2012 Vol 12 No 6
http://www.nature.com/nri/journal/v12/n6/index.html
[Reviewed earlier; No relevant content]

New England Journal of Medicine
June 21, 2012 Vol. 366 No. 25

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

Perspective

200th Anniversary Article: The Burden of Disease and the Changing Task of Medicine

D.S. Jones, S.H. Podolsky, and J.A. Greene

Extract

At first glance, the inaugural 1812 issue of the *New England Journal of Medicine and Surgery*, and the Collateral Branches of Science seems reassuringly familiar: a review of angina pectoris, articles on infant diarrhea and burns. The apparent similarity to today's Journal, however, obscures a fundamental discontinuity (1812a, b, c; see Historical Journal Articles Cited). Disease has changed since 1812. People have different diseases, doctors hold different ideas about those diseases, and diseases carry different meanings in society. To understand the material and conceptual transformations of disease over the past 200 years, one must explore the incontrovertibly social nature of disease. Disease is always generated, experienced, defined, and ameliorated within a social world. Patients need notions of disease that explicate their suffering. Doctors need theories of etiology and pathophysiology that account for the burden of disease and inform therapeutic practice. Policymakers need realistic understandings of determinants of disease and medicine's impact in order to design systems that foster health. The history of disease offers crucial insights into the intersections of these interests and the ways they can inform medical practice and health policy…

OMICS: A Journal of Integrative Biology

June 2012, 16(6)

http://online.liebertpub.com/toc/omi/16/6

[No relevant content]

The Pediatric Infectious Disease Journal

June 2012 - Volume 31 - Issue 6 pp: A7-A8,547-658,e78-e91

http://journals.lww.com/pidj/pages/currenttoc.aspx

[Reviewed earlier]

Pediatrics

June 2012, VOLUME 129 / ISSUE 6

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[Reviewed earlier]

Pharmacoeconomics

July 1, 2012 - Volume 30 - Issue 7 pp: 537-631

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PLoS One

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PLoS Medicine
(Accessed 23 June 2012)
http://www.plosmedicine.org/article/browse.action?field=date
Comparative Performance of Private and Public Healthcare Systems in Low- and Middle-Income Countries: A Systematic Review
Sanjay Basu, Jason Andrews, Sandeep Kishore, Rajesh Panjabi, David Stuckler
Research Article, published 19 Jun 2012
doi:10.1371/journal.pmed.1001244
Abstract
Introduction
Private sector healthcare delivery in low- and middle-income countries is sometimes argued to be more efficient, accountable, and sustainable than public sector delivery. Conversely, the public sector is often regarded as providing more equitable and evidence-based care. We performed a systematic review of research studies investigating the performance of private and public sector delivery in low- and middle-income countries.
Methods and Findings
Peer-reviewed studies including case studies, meta-analyses, reviews, and case-control analyses, as well as reports published by non-governmental organizations and international agencies, were systematically collected through large database searches, filtered through methodological inclusion criteria, and organized into six World Health Organization health system themes: accessibility and responsiveness; quality; outcomes; accountability, transparency, and regulation; fairness and equity; and efficiency. Of 1,178 potentially relevant unique citations, data were obtained from 102 articles describing studies conducted in low- and middle-income countries. Comparative cohort and cross-sectional studies suggested that providers in the private sector more frequently violated medical standards of practice and had poorer patient outcomes, but had greater reported timeliness and hospitality to patients. Reported efficiency tended to be lower in the private than in the public sector, resulting in part from perverse incentives for unnecessary testing and treatment. Public sector services experienced more limited availability of equipment, medications, and trained healthcare workers. When the definition of "private sector" included unlicensed and uncertified providers such as drug shop owners, most patients appeared to access care in the private sector; however, when unlicensed healthcare providers were excluded from the analysis, the majority of people accessed public sector care. "Competitive dynamics" for funding appeared between the two sectors, such that public funds and personnel were redirected to private sector development, followed by reductions in public sector service budgets and staff.
Conclusions
Studies evaluated in this systematic review do not support the claim that the private sector is usually more efficient, accountable, or medically effective than the public

sector; however, the public sector appears frequently to lack timeliness and hospitality towards patients.

PLoS Neglected Tropical Diseases
May 2012
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Volume 5 Issue 1 April 2012
http://phe.oxfordjournals.org/content/current
[Reviewed earlier]

Science
22 June 2012 vol 336, issue 6088, pages 1473-1608
http://www.sciencemag.org/current.dtl
Special Issue: H5N1
Introduction to Special Issue
Bruce Alberts, Editor-in-Chief of Science
Science 22 June 2012: 152

The publication in this issue of the research paper *Airborne Transmission of Influenza A/H5N1 Virus Between Ferrets*, plus its newer companion *The Potential for Respiratory Droplet–Transmissible A/H5N1 Influenza Virus to Evolve in a Mammalian Host*, marks the end of more than 8 months of widely reported controversy over whether some of the data now freely accessible should be withheld in the public interest (see http://scim.ag/H5N1_Flu for a compilation of News and Commentary recently published in Science). As a result, people worldwide are now much more aware of the potential threat that this virus, commonly known as "bird flu," poses to humanity. And the open publication of new data concerning the potential of H5N1 to convert directly to a form that can be transferred through the air between ferrets will motivate many more policy-makers and scientists to work to reduce the likelihood that this virus will evolve to cause a pandemic. Breakthroughs in science often occur when a scientist with a unique perspective combines prior knowledge in novel ways to create new knowledge, and the publication of the two research Reports in this issue will hopefully help to stimulate the innovation needed, perhaps from unsuspected sources, to make the world safer.

As described in News and Commentary pieces in this special section, the prolonged controversy has also provided a "stress test" of the systems that had been established to enable the biological sciences to deal with "dual-use research of concern" (DURC):

biological research with legitimate scientific purposes that may be misused to pose a biologic threat to public health and/or national security. One centerpiece of this system is the U.S. National Science Advisory Board for Biosecurity (NSABB). Science strongly supports the NSABB mechanism, which clearly needs to be supplemented and further strengthened to deal with the inevitable future cases of publication of dual-use research, both before and after their submission to journals. Still missing is a comprehensive international system for assessing and handling DURC—one that provides access, for those with a need to know, to any information deemed not to be freely publishable.

If fields subject to DURC are to attract the outstanding young scientists required to address problems such as those posed by H5N1, the appropriate experts may need to define in advance the most promising research strategies and, acting in concert with security experts, agree on responsible ways to address them. It is our hope that the thoughtful Commentaries, News, and research Reports in this special issue will help to jump-start intensive efforts along these lines Podcast Interview

Policy Forum

Benefits and Risks of Influenza Research: Lessons Learned
Anthony S. Fauci and Francis S. Collins
Science 22 June 2012: 1522-1523.
Abstract

Implementing the New U.S. Dual-Use Policy
Carrie D. Wolinetz
Science 22 June 2012: 1525-1527.
Abstract

Evolution, Safety, and Highly Pathogenic Influenza Viruses
Marc Lipsitch, Joshua B. Plotkin, Lone Simonsen, and Barry Bloom
Science 22 June 2012: 1529-1531.
Abstract

Influenza: Options to Improve Pandemic Preparation
Rino Rappuoli and Philip R. Dormitzer
Science 22 June 2012: 1531-1533.
Abstract

Perspectives

Regulating the Boundaries of Dual-Use Research
Mark S. Frankel
Science 22 June 2012: 1523-1525.
Abstract

Securing Medical Research: A Cybersecurity Point of View
Bruce Schneier
Science 22 June 2012: 1527-1529.
Abstract

Reports

Airborne Transmission of Influenza A/H5N1 Virus Between Ferrets
Sander Herfst, Eefje J. A. Schrauwen, Martin Linster, Salin Chutinimitkul, Emmie de Wit, Vincent J. Munster, Erin M. Sorrell, Theo M. Bestebroer, David F. Burke, Derek J. Smith, Guus F. Rimmelzwaan, Albert D. M. E. Osterhaus, and Ron A. M. Fouchier
Science 22 June 2012: 1534-1541.
Avian flu can acquire the capacity for airborne transmission between mammals without recombination in an intermediate host.

Abstract

The Potential for Respiratory Droplet–Transmissible A/H5N1 Influenza Virus to Evolve in a Mammalian Host

Colin A. Russell, Judith M. Fonville, André E. X. Brown, David F. Burke, David L. Smith, Sarah L. James, Sander Herfst, Sander van Boheemen, Martin Linster, Eefje J. Schrauwen, Leah Katzelnick, Ana Mosterín, Thijs Kuiken, Eileen Maher, Gabriele Neumann, Albert D. M. E. Osterhaus, Yoshihiro Kawaoka, Ron A. M. Fouchier, and Derek J. Smith

Science 22 June 2012: 1541-1547.

Some natural influenza viruses need only three amino acid substitutions to acquire airborne transmissibility between mammals.

Abstract

Science Translational Medicine

20 June 2012 vol 4, issue 139

http://stm.sciencemag.org/content/current

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Tropical Medicine & International Health

July 2012 Volume 17, Issue 7 Pages 795–933

http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1365-3156/currentissue

NTDs

Nationwide integrated mapping of three neglected tropical diseases in Togo: countrywide implementation of a novel approach (pages 896–903)

A. M. Dorkenoo, R. N. Bronzan, K. D. Ayena, G. Anthony, Y. M. Agbo, K. S. E. Sognikin, K. S. Dogbe, A. Amza, Y. Sodahlon and E. Mathieu

Article first published online: 18 MAY 2012 | DOI: 10.1111/j.1365-3156.2012.03004.x

Abstract

Objective To conduct a nationwide integrated neglected tropical disease (NTD) prevalence survey to define the need for public health interventions using an innovative mapping protocol.

Methods Two villages were selected in every peripheral health unit in endemic districts: 29 districts for schistosomiasis and STH, 15 of them for trachoma. In each village, 15 children aged 6–9 years at a randomly selected school were tested. An additional convenience sample of 35 children aged 1–5 years underwent an eye examination for trachoma. This integrated mapping was followed by a 20-cluster trachoma survey in each district that surpassed the WHO-defined threshold of 10% prevalence of trachomatous inflammation-follicular (TF).

Results A total of 1096 villages were surveyed in <6 weeks. The district prevalence of schistosomiasis ranged from 2 to 49% and of STH from 5 to 70%, with prevalence at the village level ranging from 0 to 100% for both diseases. Two districts passed the threshold of 10% for active trachoma, but the cluster survey indicated this was because of misclassification bias and that the real prevalence was <1%.

Conclusion Results of this mapping were used by the MoH and partners to plan integrated mass drug administration (MDA). Mass drug administration for trachoma was not implemented as no district passed the threshold requiring public health intervention.

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

Volume 30, Issue 33 pp. 4897-5058 (13 July 2012)

Brief Communications

Development and technology transfer of Haemophilus influenzae type b conjugate vaccines for developing countries

Pages 4897-4906
Michel Beurret, Ahd Hamidi, Hans Kreeftenberg

Abstract
This paper describes the development of a Haemophilus influenzae type b (Hib) conjugate vaccine at the National Institute for Public Health and the Environment/Netherlands Vaccine Institute (RIVM/NVI, Bilthoven, The Netherlands), and the subsequent transfer of its production process to manufacturers in developing countries. In 1998, at the outset of the project, the majority of the world's children were not immunized against Hib because of the high price and limited supply of the conjugate vaccines, due partly to the fact that local manufacturers in developing countries did not master the Hib conjugate production technology. To address this problem, the RIVM/NVI has developed a robust Hib conjugate vaccine production process based on a proven model, and transferred this technology to several partners in India, Indonesia, Korea and China. As a result, emerging manufacturers in developing countries acquired modern technologies previously unavailable to them. This has in turn facilitated their approach to producing other conjugate vaccines. As an additional spin-off from the project, a World Health Organization (WHO) Hib quality control (QC) course was designed and conducted at the RIVM/NVI, resulting in an increased regulatory capacity for conjugate vaccines in developing countries at the National Regulatory Authority (NRA) level. For the local populations, this has translated into an increased and sustainable supply of affordable Hib conjugate-containing combination vaccines. During the course of this project, developing countries have demonstrated their ability to produce large quantities of high-quality modern vaccines after a successful transfer of the technology.

Reviews

New technologies for new influenza vaccines

Review Article
Pages 4927-4933
Alan Shaw

Abstract
The currently available influenza vaccines were developed in the 1930s through the 1960s using technologies that were state-of-the art for the times. Decades of advancement in virology and immunology have provided the tools for making better vaccines against influenza. We now have the means to make vaccines that address some of the shortcomings of the original products, in particular performance in the elderly.

Regular Papers

Human papillomavirus vaccination and sexual behaviour: Cross-sectional and longitudinal surveys conducted in England

Original Research Article
Pages 4939-4944
Alice S. Forster, Laura A.V. Marlow, Judith Stephenson, Jane Wardle, Jo Waller
Abstract
Objective
To examine whether HPV vaccination influences sexual behaviour in adolescent girls, either by giving them a 'green light' to have sex, or because perceived protection afforded by the vaccine permits compensatory risky sexual behaviour.
Design
Cross-sectional and longitudinal surveys.
Setting
Seven English schools.
Main outcome measures
Self-reported sexual behaviour.
Participants
The cross-sectional survey included 1053 girls (mean age 17.1 years) who had (n = 433 recruited in March 2010) or had not (n = 620 recruited in March 2009) been offered the HPV vaccine. The longitudinal survey included 407 girls (mean age 17.5 years) who had been offered HPV vaccination and had either received at least one dose (n = 148) or had not received any doses (n = 259).
Results
In the cross-sectional survey, the group of girls who had been offered the HPV vaccine were no more likely to be sexually active than the group of girls who had not been offered the HPV vaccine. In the longitudinal survey, the vaccinated group were no more likely to have changed their condom use or increased their total number of sexual partners than the unvaccinated group.
Conclusions
Neither being offered the HPV vaccine nor receiving it affected sexual behaviour
Febrile events including convulsions following the administration of four brands of 2010 and 2011 inactivated seasonal influenza vaccine in NZ infants and children: The importance of routine active safety surveillance
Original Research Article
Pages 4945-4952
Helen Petousis-Harris, Tracey Poole, Nikki Turner, Gary Reynolds
Abstract
Objective
To evaluate and compare rates of febrile events, including febrile convulsion, following immunisation with four brands of inactivated 2010 and 2011 influenza vaccine in NZ infants and children.
Design
Retrospective telephone surveys of parents of infants and children who received at least one dose of the vaccines of interest.
Setting
184 NZ General Practices who received the vaccines of interest.
Participants
Recipients of 4088 doses of trivalent inactivated vaccines Fluvax®, Vaxigrip®, Influvac® and Fluarix® and/or monovalent Celvapan. Vaccinees were identified via the electronic Practice Management System and contacted consecutively.

Main outcome measures
Primary outcome was febrile convulsive seizure. Secondary outcomes were presence of fever plus other organ system specific symptoms.
Results
The parental response rate was 99%. Of 4088 doses given, 865 were Fluvax®, 2571 Vaxigrip®, 204 Influvac®, 438 Fluarix® and 10 Celvapan. Three febrile convulsions followed Fluvax®, a rate of 35 per 10,000 doses. No convulsions occurred following any dose of the other vaccines. There were nine febrile events that included rigors, all following Fluvax®. Fever occurred significantly more frequently following administration of Fluvax® compared with the other brands of vaccines ($p < 0.0001$) and Fluvax recipients were more likely to seek medical attention. Influvac® also had higher rates of febrile reactions (OR 0.54, 0.36–0.81) than the other two brands Vaxigrip® (OR 0.21, 0.16–0.27) and Fluarix® (OR 0.10, 0.05–0.20). After multivariable analysis vaccine, European ethnicity and second dose of vaccine were significantly associated with reporting of fever within 24 h of vaccination.
Conclusions
Influenza vaccines have different rates of reactogenicity in children which varies between ethnic groups. High rates of febrile convulsions and reactions in children receiving Fluvax® and to a lesser extent the higher fever rates in those receiving Influvac® compared with the other two brands of influenza vaccines in this study suggests that reactogenicity profiles need to be considered prior to national policy advice each season. The risk-benefit profile in children might not be equally favourable for all licensed paediatric influenza vaccines. More attention needs to be given to comparative research for all trivalent seasonal vaccines, and with all strain changes.

Capacity for a global vaccine safety system: The perspective of national regulatory authorities

Original Research Article
Pages 4953-4959
Janice E. Graham, Alexander Borda-Rodriguez, Farah Huzair, Emily Zinck

Abstract
Confidence in vaccine safety is critical to national immunization strategies and to global public health. To meet the Millenium Development Goals, and buoyed by the success of new vaccines produced in developing countries, the World Health Organization has been developing a strategy to establish a global system for effective vaccine pharmacovigilance in all countries. This paper reports the findings of a qualitative survey, conducted for the WHO Global Vaccine Safety Blueprint project, on the perspectives of national regulatory authorities responsible for vaccine safety in manufacturing and procuring countries. Capacity and capabilities of detecting, reporting and responding to adverse events following immunization (AEFI), and expectations of minimum capacity necessary for vaccine pharmacovigilance were explored. Key barriers to establishing a functional national vaccine safety system in developing countries were identified. The lack of infrastructure, information technology for stable communications and data exchange, and human resources affect vaccine safety monitoring in developing countries. A persistent "fear of reporting" in several low and middle income countries due to insufficient training and insecure employment underlies a perceived lack of political will in many governments for vaccine pharmacovigilance. Regulators recommended standardized and internationally harmonized safety reporting forms,

improved surveillance mechanisms, and a global network for access and exchange of safety data independent of industry.

Increasing adolescent immunization by webinar: A brief provider intervention at federally qualified health centers

Original Research Article

Pages 4960-4963

Jennifer L. Moss, Paul L. Reiter, Amanda Dayton, Noel T. Brewer

Abstract

Objective

To evaluate a brief intervention to increase provision of adolescent vaccines at health centers that reach the medically underserved.

Method

In April 2010, clinical coordinators from 17 federally qualified health centers (serving 7827 patients ages 12–17) participated in a competition to increase uptake of recommended adolescent vaccines: tetanus, diphtheria, and pertussis booster; meningococcal conjugate; and human papillomavirus. Vaccination coordinators attended a webinar that reviewed provider-based changes recommended by the CDC's Assessment, Feedback, Incentives, and eXchanges (AFIX) program and received weekly follow-up emails. Data on vaccine uptake came from the North Carolina Immunization Registry.

Results

Uptake of targeted adolescent vaccines increased during the one-month intervention period by about 1–2% (all $p < .05$). These small but reliable increases were greater than those observed for non-targeted vaccines (measles, mumps, and rubella; hepatitis B; and varicella).

Conclusion

This AFIX webinar led to small increases in provision of targeted adolescent vaccines over a one-month period. Similar, sustainable programs at healthcare facilities, including federally qualified health centers that function as safety net providers for medically underserved populations could help reach populations with great need.

School-located influenza immunization programs: Factors important to parents and students

Original Research Article

Pages 4993-4999

Amy B. Middleman, Mary B. Short, Jean S. Doak

Abstract

Purpose

To describe both parent and student perspectives on the importance of various programmatic factors when deciding to participate in a school-located immunizations program (SLIP) for influenza vaccine.

Methods

Questionnaires were distributed to middle- and high-school students and their parents; the document assessed demographic data, influenza vaccination history, and the importance of various factors in their decision to participate in a potential SLIP for influenza vaccine. Factor analysis created six primary factors of importance related to programming: (1) safety/trust; (2) outbreaks (representing imminent threat of disease, an environmental factor associated with program timing); (3) issues of site

implementation; (4) public health benefits; (5) record-keeping; (6) medical/emotional support.
Results
Participants included 621 students and 579 parents; 566 student/parent dyads were included. Most respondents were female, felt it is important to be immunized against the flu, and received the influenza vaccine in the past. Fewer than 50% had received the intranasal vaccine. More parents (67%) than students (46%) expressed a general willingness to consent to utilizing a SLIP. The programmatic factors associated with public health were second only to safety/trust factors as the most important to parents and students when considering participation in a SLIP. Demographic variables were found to be associated with the importance ratings of program factors associated with participation in a SLIP.
Conclusions
When considering possible participation in SLIPs, parents and students consider programmatic factors associated with safety/trust and public health benefits to be of the greatest importance. Further study will be needed to develop effective and culturally sensitive messaging that targets and emphasizes these factors to potentially increase participation in SLIPS.

Vaccine
Volume 30, Issue 32 pp. 4709-4896 (6 July 2012)
Meeting Reports
Research priorities for global measles and rubella control and eradication
Pages 4709-4716
James L. Goodson, Susan Y. Chu, Paul A. Rota, William J. Moss, David A. Featherstone, Maya Vijayaraghavan, Kimberly M. Thompson, Rebecca Martin, Susan Reef, Peter M. Strebel
Abstract
In 2010, an expert advisory panel convened by the World Health Organization to assess the feasibility of measles eradication concluded that (1) measles can and should be eradicated, (2) eradication by 2020 is feasible if measurable progress is made toward existing 2015 measles mortality reduction targets, (3) measles eradication activities should occur in the context of strengthening routine immunization services, and (4) measles eradication activities should be used to accelerate control and elimination of rubella and congenital rubella syndrome (CRS). The expert advisory panel also emphasized the critical role of research and innovation in any disease control or eradication program. In May 2011, a meeting was held to identify and prioritize research priorities to support measles and rubella/CRS control and potential eradication activities. This summary presents the questions identified by the meeting participants and their relative priority within the following categories: (1) measles epidemiology, (2) vaccine development and alternative vaccine delivery, (3) surveillance and laboratory methods, (4) immunization strategies, (5) mathematical modeling and economic analyses, and (6) rubella/CRS control and elimination.
Pneumococcal vaccines WHO position paper – 2012 – Recommendations
Pages 4717-4718
WHO Publication
Abstract

This article presents the World Health Organization (WHO) recommendations on the use of pneumococcal vaccines excerpted from the Pneumococcal vaccines WHO position paper – 2012 recently published in the Weekly Epidemiological Record . The current document replaces the position paper on the use 7-valent pneumococcal conjugate vaccine published in 2007 . Incorporating the most recent developments in the field of pneumococcal vaccines this position paper focuses on the currently available 10-valent and 13-valent conjugate vaccines and their introduction and use in national immunization programmes. It also deals with the 23-valent polysaccharide vaccine, though in less detail than provided in the April 2008 position paper which remains valid . Footnotes to this paper provide a number of core references including references to grading tables that assess the quality of scientific evidence for a few key conclusions. In accordance with its mandate to provide guidance to Member States on health policy matters, WHO issues a series of regularly updated position papers on vaccines and combinations of vaccines against diseases that have an international public health impact. These papers are concerned primarily with the use of vaccines in large-scale immunization programmes; they summarize essential background information on diseases and vaccines, and conclude with WHO's current position on the use of vaccines worldwide. This paper reflects the recommendations of the WHO's Strategic Advisory Group of Experts (SAGE) on immunization. Recommendations on the use of pneumococcal vaccines were discussed by SAGE at its meetings in November 2006 (conjugate vaccine) and April 2008 (polysaccharide vaccine) and most recently in November 2011.

Reviews

Factors influencing pandemic influenza vaccination of healthcare workers—A systematic review

Review Article

Pages 4733-4743

Chatura Prematunge, Kimberly Corace, Anne McCarthy, Rama C. Nair, Renee Pugsley, Gary Garber

Abstract

Introduction

Maintaining the health and availability of Health care workers (HCW) is an essential component of pandemic preparedness. A key to protecting HCW during the H1N1 pandemic was influenza vaccination. Numerous researchers have reported on factors influencing H1N1 vaccination behaviour in various HCW groups. This systematic review aims to inform future influenza vaccine interventions and pandemic planning processes via the examination of literature in HCW H1N1 vaccination, in order to identify factors that are (1) unique to pandemic influenza vaccination and (2) similar to seasonal influenza vaccination research.

Methods

We conducted a comprehensive review of literature (MEDLINE, PubMed, EMBASE, PsycINFO, CINHAL, AMED, Cochrane Library, ProQuest, and grey literature sources) published between January 2005 and December 2011 to identify studies relevant to HCW pH1N1 vaccine uptake/refusal.

Results

20 publications sampling HCW from different geographic regions are included in this review. H1N1 vaccine coverage was found to be variable (9–92%) across HCW populations, and self-reported vaccine status was the most frequently utilized predictor

of pandemic vaccination. HCW were likely to accept the H1N1 vaccine if they perceived, (1) the H1N1 vaccine to be safe, (2) H1N1 vaccination to be effective in preventing infection to self and others (i.e. loved ones, co-workers and patients), and (3) H1N1 was a serious and severe infection. Positive cues to action, such as the access of scientific literature, trust in public health communications and messaging, and encouragement from loved ones, physicians and co-workers were also found to influence HCW H1N1 uptake. Previous seasonal influenza vaccination was found to be an important socio-demographic predictor of vaccine uptake. Factors unique to HCW pandemic vaccine behaviour are (1) lack of time and vaccine access related barriers to vaccination, (2) perceptions of novel and rapid pandemic vaccine formulation, and (3) the strong role of mass media on vaccine uptake.

Conclusions

Many of the factors that influenced HCW pandemic vaccination decisions have previously been reported in seasonal influenza vaccination literature, but some factors were unique to pandemic vaccination. Future influenza vaccine campaigns should emphasize the benefits of vaccination and highlight positive cues to vaccination, while addressing barriers to vaccine uptake in order to improve vaccine coverage among HCW populations. Since pandemic vaccination factors tend be similar among different HCW groups, successful pandemic vaccination strategies may be effective across numerous HCW populations in pandemic scenarios.

Uptake of pandemic influenza (H1N1)-2009 vaccines in Brazil, 2010

Review Article

Pages 4744-4751

Carla Magda Allan S. Domingues, Wanderson Kleber de Oliveira, For the Brazilian Pandemic Influenza Vaccination Evaluation Team

Abstract

In 2010, the Brazilian Ministry of Health organized a mass vaccination campaign of selected priority groups in response to the 2009 H1N1 influenza pandemic. The campaign was conducted in six phases from March to July, 2010. Priority groups included healthcare professionals, indigenous persons, pregnant women, young children, persons with chronic illnesses and otherwise healthy adults 20–39 years of age. Over 89 million doses of pandemic influenza vaccines were administered, surpassing immunization targets among several priority groups, including healthcare professionals. We reviewed strategies used in Brazil to promote vaccination against pandemic influenza as well as factors external to the campaign that may have contributed to vaccine uptake among priority groups.

Current issues with the immunization program in Japan: Can we fill the "vaccine gap"?

Review Article

Pages 4752-4756

Akihiko Saitoh, Nobuhiko Okabe

Abstract

The "vaccine gap" is a term which has been used in Japan to indicate that the current immunization program is behind compared to the programs in other developed countries. The current national immunization program (NIP) which was established under the Japanese Immunization Law includes only six vaccines (eight targeted diseases), and the rest of available vaccines have been categorized as voluntary vaccines, which require out-of-pocket expense in order for the patients to receive them.

This has led the vaccination rates for the voluntary vaccines remaining low, and the incidence of the target diseases remaining high. In addition, there are a few domestic rules that exist for immunizations including (1) subcutaneous injection is the standard method of vaccination, (2) the thigh is not considered to be the common site of vaccination in infants, and (3) the intervals of administration of inactivated and live vaccines are strictly determined by law. Along with the "vaccine gap" and the domestic rules, some movements to improve our current NIP are underway; including increased calls to change the NIP from civilians and professionals, the establishment of a group by the representatives from 13 medical professional societies asking the government to consider the immunization policy a "national policy" and seeking the establishment of a new and reorganized national immunization technical advisory group (NITAG). In addition, the Vaccination Subcommittee of Health Sciences Council was formed in the government to reform the current Immunization Law and NIP, which established a new national program for three voluntary vaccines funded by a temporary budget. We hope these new movements will fill the "vaccine gap" and that the NITAG will help ensure that vaccine policy becomes a national policy, and will provide necessary vaccinations without out-of-pocket expense to protect children in Japan from vaccine preventable diseases.

Two decades of hepatitis B vaccination in mentally retarded patients: Effectiveness, antibody persistence and duration of immune memory

Original Research Article

Pages 4757-4761

Tessa Braeckman, Koen Van Herck, Wolfgang Jilg, Tanja Bauer, Pierre Van Damme

Abstract

Introduction

Institutionalized mentally retarded subjects are well-known to be at-risk for HBV infection. We studied the persistence of vaccine-induced anti-HBs antibodies and the robustness of the HBsAg-specific immune memory in this population, 18–20 years after the first vaccine dose.

Materials and methods

Non-immune residents of 4 institutions were immunized in 1984–1986. In 2004, 207 subjects were bled to determine humoral and cellular immune memory. Immune response to a booster dose was evaluated in subjects with anti-HBs level <100 IU/L.

Results

Four subjects showed anti-HBc seroconversion, without clinical implications. Pre-booster anti-HBs levels <100 IU/L were found in 45 subjects (22%); 34/39 (87%) responded with a rapid and high anti-HBs titer to the booster dose. Robust T and B cell memory was present pre- and post-booster.

Discussion and conclusion

Overall results confirm that hepatitis B vaccines are highly effective and immunogenic, and confer long-term persistence of antibodies and immune memory in an at-risk population.

Psychosocial determinants of parents' intention to vaccinate their newborn child against hepatitis B

Original Research Article

Pages 4771-4777

Irene A. Harmsen, Mattijs S. Lambooij, Robert A.C. Ruiter, Liesbeth Mollema, Jorien

Veldwijk, Yolanda J.W.M. van Weert, Gerjo Kok, Theo G.W. Paulussen, G. Ardine de Wit, Hester E. de Melker

Abstract
From October 2011, The Netherlands started to vaccinate all newborns against hepatitis B. The aim of the present study was to get insight in the psychosocial factors that determine parents' intention to vaccinate their child against hepatitis B, and to test whether intention to vaccinate is a good predictor of actual vaccination behaviour. In total, 2000 parents of newborns (0–2 weeks old) received a self-report questionnaire measuring intention towards hepatitis B vaccination and its psychosocial determinants (response rate 45.6%). Participants were invited for follow-up research and subsequently offered the opportunity to have their child vaccinated against hepatitis B. The findings showed that the large majority of parents intend to vaccinate their child against hepatitis B. The intention to vaccinate was most strongly determined by parents' attitude towards hepatitis B vaccination, which in turn was positively associated with perceived benefits of the vaccination and perceptions of the child's susceptibility to hepatitis B. The majority of the 246 parents that accepted the invitation for a follow-up study had their child vaccinated (83.7%). Intention was found to be a significant predictor of vaccination behaviour although less strong than expected. It is concluded that Dutch parents were positive towards hepatitis B vaccination in terms of both intention and behaviour. To further sustain parents' positive attitudes towards hepatitis B vaccination, educational campaigns should strengthen the benefits of vaccination along with emphasizing the child's risk to hepatitis B infection.

Survey of the prevalence of immunization non-compliance due to needle fears in children and adults

Original Research Article
Pages 4807-4812

Anna Taddio, Moshe Ipp, Suganthan Thivakaran, Ali Jamal, Chaitya Parikh, Sarah Smart, Julia Sovran, Derek Stephens, Joel Katz

Abstract
Needle fears are a documented barrier to immunization in children and adults. There is a paucity of data, however, regarding the prevalence of needle fears and their impact on immunization compliance. In this cross-sectional survey, a convenience sample of parents (n = 883) and children (n = 1024) attending a public museum in Toronto, Canada answered questions about needle fears and non-compliance with immunization due to needle fear. Altogether, 24% of parents and 63% of children reported a fear of needles. Needle fear was the primary reason for immunization non-compliance for 7% and 8% of parents and children, respectively. Interventions aimed at improving education about, and access to, analgesic interventions during immunization injections performed in childhood are recommended in order to prevent the development of needle fears and vaccine non-compliance.

Nurses' vaccination against pandemic H1N1 influenza and their knowledge and other factors

Original Research Article
Pages 4813-4819

Jing Zhang, Alison E. While, Ian J. Norman

Abstract
This study aimed to estimate the vaccination coverage against the pandemic H1N1 influenza in a group of nurses and determine the factors associated with their

vaccination behaviours. An anonymous, self-administered questionnaire was distributed to a convenience sample of nurses who were enrolled on continuing professional education courses in a university in London. The survey response rate was 77.7% (n = 522). A total of 172 (35.2%) nurses reported receiving the pandemic H1N1 vaccine in the 2009–2010 influenza season and only 22.3% of them had the intent to accept the vaccine in the next season. Compared to nurses with low knowledge scores, those with high knowledge scores were more likely to receive the pandemic H1N1 vaccine ($p = 0.017$), recommend the vaccine to their patients ($p = 0.003$), and have the willingness to recommend vaccination to patients in the future ($p = 0.009$). There was a higher vaccination rate among nurses with higher risk perception scores than with lower scores ($p = 0.001$). A small, positive correlation between H1N1 knowledge and risk perception scores was identified ($p < 0.001$) indicating that a high knowledge level was associated with high levels of risk perception. More male nurses received the H1N1 vaccine than females ($p < 0.001$) and there were a significant differences in the uptake among nurses from different clinical specialty groups ($p < 0.001$). About half of the vaccinated nurses reported the intent to be vaccinated again but only 8.1% of the unvaccinated nurses had the intent to receive the vaccine in the next season ($p < 0.001$). The pandemic H1N1 2009 influenza vaccination coverage among this nurse sample was sub-optional. Lack of knowledge and risk perception were predictors associated with the nurses' vaccination behaviours. The identified knowledge items should be addressed in future vaccination campaigns. The hindrances associated with continuing vaccination decision-making and factors contributing to the different vaccination coverage among clinical specialty groups require further exploration.

Early-life and contemporaneous nutritional and environmental predictors of antibody response to vaccination in young Gambian adults

Original Research Article
Pages 4842-4848
Sophie E. Moore, Anna A. Richards, David Goldblatt, Lindsey Ashton, Shousun Chen Szu, Andrew M. Prentice

Abstract

Recent research links nutritional exposures early in life with alterations in functional immunity that persist beyond childhood. Here we investigate predictors of antibody response to polysaccharide vaccines in a cohort of Gambian adults with detailed records from birth and early infancy available. 320 adults were given a single dose of a Vi polysaccharide vaccine for Salmonella typhi and a 23-valent capsular polysaccharide pneumococcal vaccine. Anti-Vi antibody levels and antibodies against 4 pneumococcal serotypes (1, 5, 14 and 23F) were measured in serum samples collected at baseline and then 14 days following vaccination and compared to data available from birth and early infancy. Post-vaccination antibody titres to serotype 14 of the pneumococcal vaccine were negatively associated with rate of growth from birth to three months of age, infant weight at 12 months of age and season of birth, but no other associations were observed with early-life exposures. The strongest predictor of antibody levels was pre-vaccination antibody titres, with adult height and serum neopterin levels at time of vaccination also implicated. The current study does not support the hypothesis that nutritional exposures early in life consistently compromise antibody response to polysaccharide vaccines administered in young adulthood.

Economic modelling assessment of the HPV quadrivalent vaccine in Brazil: A dynamic individual-based approach

Original Research Article
Pages 4866-4871
Tazio Vanni, Paula Mendes Luz, Anna Foss, Marco Mesa-Frias, Rosa Legood
Abstract
We examined the cost-effectiveness of the quadrivalent HPV vaccine for the pre-adolescent female population of Brazil. Using demographic, epidemiological and cancer data, we developed a dynamic individual-based model representing the natural history of HPV/cervical cancer as well as the impact of screening and vaccination programmes. Assuming the current screening strategies, we calculated the incremental cost-effectiveness ratio (ICER) for cohorts with and without vaccination taking into account different combinations of vaccination coverage (50%, 70%, 90%) and cost per vaccinated woman (US$25, US$55, US$125, US$556). The results varied from cost-saving (coverage 50% or 70% and cost per vaccinated woman US$25) to 5950 US$/QALY (coverage 90% and cost per vaccinated 556 US$). In a scenario in which a booster shot was needed after 10 years in order to secure lifelong protection, the ICER resulted in 13,576 US$/QALY. Considering the very cost-effective and cost-effective thresholds based on Brazil's GDP per capita, apart from the booster scenario which would be deemed cost-effective, all the other scenarios would be deemed very cost-effective. Both the cost per dose of vaccine and discount rate (5%) had an important impact on the results. Vaccination in addition to the current screening programme is likely to save years of life and, depending on the cost of vaccination, may even save resources. Price negotiations between governments and manufacturers will be paramount in determining that the vaccine not only represents good value for money, but is also affordable in middle-income countries like Brazil.

Cost of production of live attenuated dengue vaccines: A case study of the Instituto Butantan, Sao Paulo, Brazil

Original Research Article
Pages 4892-4896
R.T. Mahoney, D.P. Francis, N.M. Frazatti-Gallina, A.R. Precioso, I. Raw, P. Watler, P. Whitehead, S.S. Whitehead
Abstract
Background
A vaccine to prevent dengue disease is urgently needed. Fortunately, a few tetravalent candidate vaccines are in the later stages of development and show promise. But, if the cost of these candidates is too high, their beneficial potential will not be realized. The price of a vaccine is one of the most important factors affecting its ultimate application in developing countries. In recent years, new vaccines such as those for human papilloma virus and pneumococcal disease (conjugate vaccine) have been introduced with prices in developed countries exceeding $50 per dose. These prices are above the level affordable by developing countries. In contrast, other vaccines such as those against Japanese encephalitis (SA14-14-2 strain vaccine) and meningitis type A have prices in developing countries below one dollar per dose, and it is expected that their introduction and use will proceed more rapidly. Because dengue disease is caused by four related viruses, vaccines must be able to protect against all four. Although there are several live attenuated dengue vaccine candidates under clinical evaluation, there remains uncertainty about the cost of production of these tetravalent vaccines, and this uncertainty is an impediment to rapid progress in planning for the introduction and distribution of dengue vaccines once they are licensed.

Method
We have undertaken a detailed economic analysis, using standard industrial methodologies and applying generally accepted accounting practices, of the cost of production of a live attenuated vaccine, originally developed at the US National Institutes of Health (National Institute of Allergy and Infectious Diseases), to be produced at the Instituto Butantan in Sao Paulo, Brazil. We determined direct costs of materials, direct costs of personnel and labor, indirect costs, and depreciation. These were analyzed assuming a steady-state production of 60 million doses per year.
Results
Although this study does not seek to compute the price of the final licensed vaccine, the cost of production estimate produced here leads to the conclusion that the vaccine can be made available at a price that most ministries of health in developing countries could afford. This conclusion provides strong encouragement for supporting the development of the vaccine so that, if it proves to be safe and effective, licensure can be achieved soon and the burden of dengue disease can be reduced.

Vaccine: Development and Therapy
(Accessed 23 June 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]

World Journal of Vaccines
Volume 02, Number 01 (February 2012)
http://www.scirp.org/journal/Home.aspx?IssueID=1399#17225
[Reviewed earlier]

Media Watch
Beginning in June 2012, *Vaccines: The Week in Review* is expanding 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 the Center 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 23 June 2012
[No new relevant content]

Financial Times
http://www.ft.com
Accessed 23 June 2012
[No new unique, relevant content]

Foreign Affairs
http://www.foreignaffairs.com/
Accessed 23 June 2012
[No new relevant content]

Foreign Policy
http://www.foreignpolicy.com/
Accessed 23 June 2012
[No new relevant content]

The Guardian
http://www.guardiannews.com/
Accessed 23 June 2012
[No new unique, relevant content]

The Huffington Post
http://www.huffingtonpost.com/
Accessed 23 June 2012
[No new unique, relevant content]

New Yorker
http://www.newyorker.com/
Accessed 23 June 2012
[No new unique, relevant content]

New York Times
http://www.nytimes.com/
Accessed 23 June 2012
[No new unique, relevant content]

Washington Post
http://www.washingtonpost.com/
Accessed 23 June 2012
National
Texas A&M awarded federal biodefense contract to develop vaccines in event of pandemic

AUSTIN, Texas — The Texas A&M University System will be the home of one of three national biodefense centers to help the country quickly develop vaccines in the event of a pandemic and strategies for responding to bioterrorism.
Associated Press, AP JUN 18

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