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**Vaccines and Global Health: The Week in Review**
**6 September 2014**
**Center for Vaccine Ethics & Policy (CVEP)**

*This weekly summary targets news, events, announcements, articles and research in the vaccine and global health ethics and policy space and is aggregated from key governmental, NGO, international organization and industry sources, key peer-reviewed journals, and other media channels. This summary proceeds from the broad base of themes and issues monitored by the Center for Vaccine Ethics & Policy in its work: it is not intended to be exhaustive in its coverage.*

*Vaccines and Global Health: The Week in Review is also **posted in pdf form** and as a set of blog posts at http://centerforvaccineethicsandpolicy.wordpress.com/. This blog allows full-text searching of over 6,500 entries.*

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***Request an email version:** Vaccines and Global Health: The Week in Review is published as a single email summary, scheduled for release each Saturday evening before midnight (EDT in the U.S.). If you would like to receive the email version, please send your request to david.r.curry@centerforvaccineethicsandpolicy.org.*

## EBOLA [to 6 September 2014]

### Statement on the WHO Consultation on potential Ebola therapies and vaccines

5 September 2014 --
*[Full text; Editor's text bolding]*

After 2 days of discussion on potential Ebola therapies and vaccines, more than 150 participants, representing the fields of research and clinical investigation, ethics, legal, regulatory, financing, and data collection, identified several therapeutic and vaccine interventions that should be the focus of priority clinical evaluation at this time.

Currently, none of these vaccines or therapies have been approved for human use to prevent or treat EVD. A number of candidate vaccines and therapies have been developed and tested in animal models and some have demonstrated promising results. In view of the urgency of these

outbreaks, the international community is mobilizing to find ways to accelerate the evaluation and use of these compounds.

Safety in humans is also unknown, raising the possibility of adverse side effects when administered. Use of some of these products is demanding and requires intravenous administration and infrastructure, such as cold chain, and facilities able to offer a good and safe standard of care.

The experts determined:

:: There was consensus that the use of whole blood therapies and convalescent blood serums needs to be considered as a matter of priority.

**:: Safety studies of the 2 most advanced vaccines identified – based on vesicular stomatitis virus (VSV-EBO) and chimpanzee adenovirus (ChAd-EBO) – are being initiated in the United States of America and will be started in Africa and Europe in mid-September. WHO will work with all the relevant stakeholders to accelerate their development and safe use in affected countries. If proven safe, a vaccine could be available in November 2014 for priority use in health-care workers.**

:: In addition to blood therapies and candidate vaccines, the participants discussed the availability and evidence supporting the use of novel therapeutic drugs, including monoclonal antibodies, RNA-based drugs, and small antiviral molecules. They also considered the potential use of existing drugs approved for other diseases and conditions. Of the novel products discussed, some have shown great promise in monkey models and have been used in a few Ebola patients (although, in too few cases to permit any conclusion about efficacy).

Existing supplies of all experimental medicines are limited. While many efforts are underway to accelerate production, supplies will not be sufficient for several months to come. The prospects of having augmented supplies of vaccines rapidly look slightly better.

The participants cautioned that investigation of these interventions should not detract attention from the implementation of effective clinical care, rigorous infection prevention and control, careful contact tracing and follow-up, effective risk communication, and social mobilization, all of which are crucial for ending these outbreaks.

The recipients of experimental interventions, locations of studies, and study design should be based on the aim to learn as much as we can as fast as we can without compromising patient care or health worker safety, with active participation of local scientists, and proper consultation with communities.

This will require the following crucial elements:

:: Appropriate protocols must be rapidly developed for informed consent and safe use.

:: A mechanism for evaluating pre-clinical data should be put in place in order to recommend which interventions should be evaluated as a first priority.

A platform must be established for transparent, real-time collection and sharing of data.

A safety monitoring board needs to be established to evaluate the data from all interventions.

All of these will require continued ethical oversight.

**WHO: Global Alert and Response (GAR) – Disease Outbreak News** [to 6 September 2014]

http://www.who.int/csr/don/en/

:: Ebola virus disease outbreak – west Africa 4 September 2014

**Meeting Video: UN Ebola Briefing**

2 September 2014 :: 1:18

Deputy Secretary-General, Director-General of the World Health Organization (WHO); United Nations System Coordinator; MSF President; UNICEF ED, others.
http://webtv.un.org/watch/the-ebola-outbreak-in-west-africa-briefing-to-member-states/3763544442001

**Additional WHO Content:**
:: Ebola situation in Port Harcourt, Nigeria - 3 September 2014
:: Virological analysis: no link between Ebola outbreaks in west Africa and Democratic Republic of Congo - 2 September 2014
:: Ebola event management at points of entry: Interim guidance
WHO
September 2014 :: 11 pages:
WHO reference number: WHO/EVD/Guidance/PoE/14.1
pdf: Interim guidance: Ebola event management at points of entry
Overview
As the Ebola virus disease (EVD) continues to claim lives and put pressure on health systems in west Africa, its transmission across borders has prompted a need to manage suspected cases at Points of Entry (PoE).
The interim guidance document is intended for National Focal Points for the International Health Regulations (IHR)(2005)(1), PoE public health authorities, PoE operators, conveyance operators, crew members and other stakeholders involved in the management of Public health event.
The aim is to provide early detection of potentially infected persons; to assist in implementing WHO recommendations related to Ebola management; and to prevent the international spread of the disease while allowing PoE authorities to avoid unnecessary restrictions and delays.
:: Infection prevention and control guidance summary
Ebola guidance package
:: Infection prevention and control guidance for care of patients with Filovirus haemorrhagic fever
Infection prevention
:: Travel and transport risk assessment: Interim guidance for public health authorities and the transport sector
:: Toolkit for behavioural and social communication in outbreak response
Social mobilization
:: Ebola and Marburg virus disease epidemics: preparedness, alert, control, and evaluation
Preparedness and response

**CDC/MMWR Watch** [to 6 September 2014]
http://www.cdc.gov/mmwr/mmwr_wk.html
:: CDC warns Ebola epidemic in West Africa is outpacing current response - Press Release
9/2/2014, 4:50 PM
CDC Director Tom Frieden, M.D., M.P.H. reported on his visits last week to Guinea, Liberia and Sierra Leone and called for immediate steps across nations to accelerate response to the Ebola epidemic in West Africa.

***Editor's Note:***
*Please see editorials on Ebola from the Bulletin of the World Health Organization in "Journal Watch" and The Washington Post and New York Times in "Media Watch" below.*

**POLIO** [to 6 September 2014]

**GPEI Update: Polio this week - *As of 3 September 2014***

Global Polio Eradication Initiative

*Editor's Excerpt and text bolding*

*Full report: http://www.polioeradication.org/Dataandmonitoring/Poliothisweek.aspx*

:: Protecting west Africa: Even as polio programme staff across west Africa support efforts to control the Ebola outbreak affecting the region, preparations are going ahead for large scale multi-country vaccination campaigns in those countries not affected by Ebola, in mid-September.

:: In Nigeria, inactivated polio vaccine (IPV) has been used in early August during supplementary immunization activities in Borno and Yobe, reaching 0.6 million children. Further campaigns will integrate IPV, aiming to reach more than a million children by April 2015.

:: Polio vaccination activities have resumed in parts of Helmand Province in the Southern Region of Afghanistan for the first time in five months. Upcoming immunization campaigns in September will cover the entire province.

***Pakistan***

:: Two new circulating vaccine-derived poliovirus (cVDPV2) cases were reported in the past week. One was in the Lakki Marwat district with onset of paralysis on 8 May and the other in Bannu district, Khyber Pakhtunkhwa on 3 May. The country has reported 18 cases of cVDPV2 in 2014 and the most recent case had onset of paralysis on 27 May in FR Bannu, FATA.

***West Africa***

:: Even as polio programme staff across West Africa support efforts to control the Ebola outbreak affecting the region, preparations are going ahead for large scale multi-country vaccination campaigns in those countries not affected by Ebola, in mid-September.

:: A trivalent OPV campaign is planned for the entire region, in Mali on 19-22 September and in Benin, Burkina Faso, Cote d'Ivoire, Gambia, Ghana, Guinea-Bissau, Mauritania, Niger, Senegal and Togo on 20-23 September.

**World Bank eyes up to $500 mln via immunisation sukuk -official**

KUALA LUMPUR, Sep 3, 2014

(Reuters) - The World Bank plans to raise as much as $500 million worth of Islamic bonds, or sukuk, this year to help fund an immunisation programme, one of several initiatives from the multilateral body in the Islamic finance sector.

The World Bank, acting as treasurer of the International Finance Facility for Immunisation (IFFIm), would help issue the sukuk, said Michael Bennett, head of derivatives and structured finance at the World Bank's treasury department.

IFFIm has previously raised money from retail investors in markets such as Australia and Japan through so-called "kangaroo" and "uridahsi" bonds. It could soon add sukuk to the lexicon of vaccine financing.

"Right now we're thinking $300 million to $500 million, we are still talking to the market on what the right size should be," said Bennett on the sidelines of an industry conference…

**IVI Launches Children Public Health and Philanthropic Educational Program, 'KiKi Program'**
Media Release
2014.09.03
*KiKi program centers around kids helping kids in developing countries*
*Excerpt*
Seoul, September 3, 2014 — The International Vaccine Institute (IVI), an international organization based in Seoul, launched the 'Kids Help Kids (KiKi) program—an educational philanthropic program centering around promoting public health practices such as hand washing, hygiene and immunization — organized by IVI and supported by the Ministry of Education (MoE) and Yanghyun Foundation…

**WHO & Regionals** [to 6 September 2014]
:: GIN August 5 September 2014
:: Haiti launches cholera vaccination campaign
*Effort targets 200,000 people in three departments considered at high risk*
Port-au-Prince, Haiti, 2 September 2014 (PAHO/WHO) – Haiti launched a cholera vaccination campaign last week that seeks to reach 200,000 people in three departments. The campaign is being led by the Ministry of Health and Population (MSPP) with support from the United Nations and a coalition of strategic partners, including the Pan American Health Organization/World Health Organization (PAHO/WHO).
The campaign has financing from the U.N. Central Emergency Response Fund (CERF) and is using vaccines from a global stockpile created at the request of the 2011 World Health Assembly as a tool to help control cholera outbreaks worldwide. WHO serves as secretariat for the global stockpile, which is also supported by the International Federation of Red Cross and Red Crescent Societies, Doctors without Borders, and UNICEF.
Last week's campaign was carried out in Artibonite (Gonaives and Ennery), Central (Lascahobas, Saut d'Eau, Savanette and Mirebalais), and West (Arcahaie) departments, which are considered high-risk zones. A second phase is planned for mid-September to deliver a second dose of the vaccine…

**GAVI Watch** [to 6 September 2014]
http://www.gavialliance.org/library/news/press-releases/
:: Niger tackles its two biggest child killers with Gavi support
05 August 2014

**UNICEF Watch** [to 6 September 2014]
http://www.unicef.org/media/media_71724.html
:: Ebola outbreak: UNICEF continues to rush critical supplies to protect health workers and families
GENEVA/DAKAR/FREETOWN/NEW YORK, 5 September 2014 – A cargo plane of UNICEF medical supplies including protective equipment and essential medicine has just landed in Sierra Leone, part of the children's agency's continued drive to tackle the Ebola outbreak in West Africa.
:: Amid ongoing conflict, Iraq successfully implements polio campaign supported by UNICEF and WHO

ERBIL / AMMAN, 1 September 2014 – A mass polio immunization campaign across Iraq earlier this month succeeded in reaching 3.75 out of the 4 million children under the age of 5, despite the ongoing violence sweeping much of the country.

**Industry Watch [**to 6 September 2014]
Selected media releases and other selected content from industry.
:: Sanofi Pasteur's Dengue Vaccine Candidate Successfully Completes Final Landmark Phase III Clinical Efficacy Study in Latin America
September 3, 2014
*- Second, large-scale phase III study successfully meets primary endpoint with overall vaccine efficacy of 60.8 percent and shows efficacy against each of the four dengue serotypes -*
*- Additional observation of the results shows a significant reduction of the risk of hospitalization by 80.3 percent confirming the potential public health impact of the vaccine -*
*- Initial safety data are consistent with the favorable safety profile documented in all previous studies (phase I, II, III) –*
:: Johnson & Johnson Responds to Ebola Crisis With Commitment to Accelerate Vaccine Program in Collaboration With the US National Institutes of Health (NIH) and Provide Humanitarian Relief Aid
Sep 04, 2014
Johnson & Johnson (NYSE: JNJ) today announced it will fast-track the development of a promising new combination vaccine regimen against Ebola and broadly collaborate with its partners in global health to deliver immediate relief aid to address the current Ebola outbreak…

**Global Fund Watch [**to 6 September 2014]
http://www.theglobalfund.org/en/mediacenter/announcements/
*No new digest content identified.*

**European Medicines Agency Watch [**to 6 September 2014]
http://www.ema.europa.eu/ema/
*No new digest content identified.*

**WHO: Humanitarian Health Action** [to 6 September 2014]
http://www.who.int/hac/en/
*No new digest content identified.*

## ***Reports/Research/Analysis/Commentary/Conferences/Meetings/Book Watch/Tenders***

*Vaccines and Global Health: 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

**Video Commentary: Jon Andrus, Deputy Director of PAHO on Vaccination Development**
BioMedox
1 September 2014
Discussion of costs, PAHO revolving fund, import taxes and vaccine price.

**Call to Action - HPV Vaccination as a Public Health Priority**
NFID
August 2014
*Experts gather to discuss importance of HPV vaccination*
The recommendations in this document are based upon the proceedings of a May 2014 roundtable convened by the National Foundation for Infectious Diseases (NFID) and the Council of State and Territorial Epidemiologists (CSTE).
NFID and CSTE assembled subject matter experts, including representatives from relevant professional medical associations and organizations, consumer health organizations, and government agencies to discuss the long-term health impact of HPV and the important role of increased immunization…

**The Influence of Global Environmental Change on Infectious Disease Dynamics -**
Workshop
IOM
September 3, 2014
The twentieth century witnessed an era of unprecedented, large-scale, anthropogenic changes to the natural environment. Understanding how environmental factors directly and indirectly affect the emergence and spread of infectious disease has assumed global importance for life on this planet. While the causal links between environmental change and disease emergence are complex, progress in understanding these links, as well as how their impacts may vary across space and time, will require transdisciplinary, transnational, collaborative research. This research may draw upon the expertise, tools, and approaches from a variety of disciplines.
The Forum on Microbial Threats hosted a public workshop on September 24 and 25, 2013, to explore the scientific and policy dimensions of the impacts of global environmental change on infectious disease dynamics. Participants examined and discussed the observed and likely influences of environmental factors, acting both individually and synergistically on infectious disease dynamics. A range of approaches to improve global readiness and capacity for surveillance, detection, and response to emerging microbial threats to plant, animal, and human health in the face of ongoing global environmental change was also discussed.
pdf:
https://download.nap.edu/login.php?record_id=18800&page=%2Fdownload.php%3Frecord_id%3D18800

## ***Journal Watch***

*Vaccines and Global Health: 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*

**The American Journal of Bioethics**
Volume 14, Issue 9, 2014
http://www.tandfonline.com/toc/uajb20/current
*Issue focused on minimal risk in research involving children.*
[Reviewed earlier]

**American Journal of Infection Control**
Volume 42, Issue 9, p941-1024 September 2014
http://www.ajicjournal.org/current
[New issue; No relevant content]

**American Journal of Preventive Medicine**
Volume 47, Issue 3, p233-374 September 2014
http://www.ajpmonline.org/current
**A Systematic Review of Mandatory Influenza Vaccination in Healthcare Personnel**
Samantha I. Pitts, MD, MPH, Nisa M. Maruthur, MD, MHS, Kathryn R. Millar, MPH, RN, Trish M. Perl, MD, MSc, Jodi Segal, MD, MPH
DOI: http://dx.doi.org/10.1016/j.amepre.2014.05.035
*Abstract*
Context
Influenza is a major cause of patient morbidity. Mandatory influenza vaccination of healthcare personnel (HCP) is increasingly common yet has uncertain clinical impact. This study systematically examines published evidence of the benefits and harm of influenza vaccine mandates.
Evidence acquisition
MEDLINE, Embase, the Cochrane Library, Cumulative Index to Nursing and Allied Health Literature, Science Citation Index Expanded, and Conference Proceedings Citations Index were searched and analyzed in 2013. Studies must have assessed the effect of a requirement of influenza vaccination among HCP for continued employment or clinical practice. Studies were not limited by comparison group, outcome, language, or study design. Two reviewers independently abstracted data and assessed bias risk.
Evidence synthesis
Twelve observational studies were included in the study from 778 citations. Following implementation of a vaccine mandate, vaccination rates increased in all eight studies reporting this outcome, exceeding 94%. Three studies documented increased vaccination rates in hospitals with mandates compared to those without ($p<0.001$ for all comparisons). Two single-institution studies reported limited, inconclusive results on absenteeism among HCP. No studies reported on clinical outcomes among patients. Medical and religious exemptions and terminations or voluntary resignations were rare.

Conclusions
Evidence from observational studies suggests that a vaccine mandate increases vaccination rates, but evidence on clinical outcomes is lacking. Although challenging, large healthcare employers planning to implement a mandate should develop a strategy to evaluate HCP and patient outcomes. Further studies documenting the impact of HCP influenza vaccination on clinical outcomes would inform decisions on the use of mandatory vaccine policies in HCP.

**American Journal of Public Health**
Volume 104, Issue S4 (September 2014)
http://ajph.aphapublications.org/toc/ajph/current
[New issue; No relevant content]

**American Journal of Tropical Medicine and Hygiene**
September 2014; 91 (3)
http://www.ajtmh.org/content/current
***Editorial***
**The Ability to Inoculate Purified Malaria Sporozoites Will Accelerate Vaccine and Drug Discovery**
Michael F. Good*
Author Affiliations
Institute for Glycomics, Griffith University, Gold Coast, Queensland, Australia
The ability to infect a volunteer with malaria in a controlled and safe manner promises to be of enormous benefit to research programs aimed at developing malaria vaccines1 or novel antimalaria drugs.2 By challenging an individual in early-stage trials with a defined number of parasites of a specific laboratory strain in a controlled clinical environment, it is possible to derive more meaningful data and significantly reduce trial costs, thus facilitating product development. Research presented in this issue shows that it will now be possible for trial volunteers living in both malaria-endemic and non-endemic areas.3…
**Current Strategic Thinking for the Development of a Trivalent Alphavirus Vaccine for Human Use**
Daniel N. Wolfe*, D. Gray Heppner, Shea N. Gardner, Crystal Jaing, Lesley C. Dupuy, Connie S. Schmaljohn and Kevin Carlton
Author Affiliations
Chemical and Biological Technologies Department, Defense Threat Reduction Agency, Fort Belvoir, Virginia; TASC, Inc., Lorton, Virginia; Computations/Global Security, Lawrence Livermore National Laboratory, Livermore, California; Physical and Life Sciences Directorate, Lawrence Livermore National Laboratory, Livermore, California; US Army Medical Research Institute for Infectious Diseases, Fort Detrick, Maryland; Joint Vaccine Acquisition Program, Medical Countermeasure Systems, Joint Program Executive Office, Fort Detrick, Maryland
*Abstract.*
Vaccinations against the encephalitic alphaviruses (western, eastern, and Venezuelan equine encephalitis virus) are of significant interest to biological defense, public health, and agricultural communities alike. Although vaccines licensed for veterinary applications are used in the Western Hemisphere and attenuated or inactivated viruses have been used under Investigational New Drug status to protect at-risk personnel, there are currently no licensed vaccines for use in humans. Here, we will discuss the need for a trivalent vaccine that can

protect humans against all three viruses, recent progress to such a vaccine, and a strategy to continue development to Food and Drug Administration licensure.

**Annals of Internal Medicine**
2 September 2014, Vol. 161. No. 5
http://annals.org/issue.aspx
[New issue; No relevant content]

**BMC Health Services Research**
(Accessed 6 September 2014)
http://www.biomedcentral.com/bmchealthservres/content
[No new relevant content]

**BMC Infectious Diseases**
(Accessed 6 September 2014)
http://www.biomedcentral.com/bmcinfectdis/content
[No new relevant content]

**BMC Medical Ethics**
(Accessed 6 September 2014)
http://www.biomedcentral.com/bmcmedethics/content
***Debate***
**The social value of clinical research**
Michelle GJL Habets, Johannes JM van Delden and Annelien L Bredenoord
Author Affiliations
BMC Medical Ethics 2014, 15:66 doi:10.1186/1472-6939-15-66
Published: 5 September 2014
*Abstract* (provisional)
Background
International documents on ethical conduct in clinical research have in common the principle that potential harms to research participants must be proportional to anticipated benefits. The anticipated benefits that can justify human research consist of direct benefits to the research participant, and societal benefits, also called social value. In first-in-human research, no direct benefits are expected and the benefit component of the risks-benefit assessment thus merely exists in social value. The concept social value is ambiguous by nature and is used in numerous ways in the research ethics literature. Because social value justifies involving human participants, especially in early human trials, this is problematic.
Discussion
Our analysis and interpretation of the concept social value has led to three proposals. First, as no direct benefits are expected for the research participants in first-in-human trials, we believe it is better to discuss a risk- value assessment instead of a risk - benefit assessment. This will also make explicit the necessity to have a clear and common use for the concept social value. Second, to avoid confusion we propose to limit the concept social value to the intervention tested. It is the expected improvement the intervention can bring to the wellbeing of (future)

patients or society that is referred to when we speak about social value. For the sole purpose of gaining knowledge, we should not expose humans to potential harm; the ultimate justification of involving humans in research lies in the anticipated social value of the intervention. Third, at the moment only the validity of the clinical research proposal is a prerequisite for research to take place. We recommend making the anticipated social value a prerequisite as well.

**BMC Public Health**
(Accessed 6 September 2014)
http://www.biomedcentral.com/bmcpublichealth/content
***Research article***
**Implementation of a universal rotavirus vaccination program: comparison of two delivery systems**
Mitchell Zelman, Carolyn Sanford, Anne Neatby, Beth A Halperin, Donna MacDougall, Corinne Rowswell, Joanne M Langley and Scott A Halperin
Author Affiliations
BMC Public Health 2014, 14:908 doi:10.1186/1471-2458-14-908
Published: 2 September 2014
*Abstract* (provisional)
Background
Rotavirus vaccine is recommended for all infants in Canada. To evaluate the logistics of implementing a universal rotavirus vaccination program, we compared the effectiveness of program implementation in jurisdictions with either a physician-administered or public health nurse-administered program.
Methods
All infants born between October 1, 2010 and September 30, 2012 in Prince Edward Island and Nova Scotia's Capital District Health Authority were eligible for the vaccination program. A universal rotavirus vaccination program was implemented and delivered in public health clinics in Prince Edward Island and in physicians' offices in Nova Scotia.
Results
Engagement of vaccinators in delivery of the universal vaccination program was more successful in Prince Edward Island than in Nova Scotia. Vaccine coverage rates rose rapidly in Prince Edward Island, exceeding 90 % for both doses within 3 months and remaining at those levels over the two-year program. In contrast, coverage rates in Nova Scotia rose more slowly and never exceeded 40 % during the two years. Access to coverage data was more timely and accurate in Prince Edward Island than Nova Scotia.
Conclusion
A universal rotavirus vaccination program delivered through public health clinics achieved more rapid and higher levels of coverage than a program administered through physicians' offices.

**BMC Research Notes**
(Accessed 6 September 2014)
http://www.biomedcentral.com/bmcresnotes/content
[No new relevant content]

**British Medical Journal**

06 September 2014(vol 349, issue 7973)
http://www.bmj.com/content/349/7973

***Editorials***

## The 2030 sustainable development goal for health

BMJ 2014; 349 doi: http://dx.doi.org/10.1136/bmj.g5295 (Published 26 August 2014) Cite this as: BMJ 2014;349:g5295

Gavin Yamey, evidence to policy initiative lead1, Rima Shretta, malaria elimination initiative deputy lead1, Fred Newton Binka, vice chancellor2
Author affiliations

Must balance bold aspiration with technical feasibility

*Excerpt*

In the year 2000, 193 countries adopted the millennium development goals (MDGs), a milestone in global development. The eight goals were simple to grasp, measurable, and time bound, ending in 2015. Goals 4, 5, and 6 focused on reducing child, maternal, and infectious disease mortality, respectively, raising health to the top of the global agenda and mobilising new health financing.1 Although the three health related goals are unlikely to be met, there has been substantial progress towards their achievement, particularly for infectious diseases.2

As the MDGs come to an end, a new set of sustainable development goals (SDGs) will be debated during the UN General Assembly that starts on 24 September 2014. These goals will have a 2030 end date. They could catalyse further transformations in global health.

An intergovernmental open working group is writing the new goals and has just published its first draft.3 Whereas the MDGs were "'top-down goals' formulated by policy elites,"4 the working group deserves credit for drafting the new goals using a bottom-up approach, based on wide ranging consultations. There is much to like in the draft: …

**Bulletin of the World Health Organization**

Volume 92, Number 9, September 2014, 621-696
http://www.who.int/bulletin/volumes/92/9/en/

***Editorials***

## The 2014 Ebola outbreak: ethical use of unregistered interventions

Ruediger Krech a & Marie-Paule Kieny a
a. World Health Organization, avenue Appia 20, 1211 Geneva 27, Switzerland.

Bulletin of the World Health Organization 2014;92:622. doi:
http://dx.doi.org/10.2471/BLT.14.145789

The large number of cases and wide geographical spread distinguish the current 2014 outbreak of Ebola virus disease in west Africa from all known earlier outbreaks.1 In the past, outbreaks of this disease have been stopped by identifying all cases, tracing all contacts and making sure that those caring for patients use correct protective gear at all times. However, the success of such methods depends on the presence of: (i) functional health systems; (ii) health workers who are trained, paid, willing to be deployed and adequately protected in a dangerous work environment; (iii) experts in public health with the skills needed to manage the tracing of people and monitor the evolution of the disease effectively; and (iv) people with solid skills in social engagement and development who are available to work with at-risk communities.2 Such systems and individuals were largely absent from the area where the current outbreak of Ebola virus disease is believed to have begun – a border area between three countries that all have fragile health systems and that are emerging from the traumas of civil war.

Encouragingly, research efforts over the past decade have led to the development, for the first time, of a range of potential treatments and vaccines that could support efforts to control Ebola virus disease. However, although some of these interventions have proven effective in animal models, none has completed clinical testing in humans – a step that is indispensable for the registration of any medical intervention as proven and safe. Why have there been no clinical trials, given that we have known the Ebola virus for 40 years? Why is there no effective registered vaccine or treatment available? At the onset of the current Ebola outbreak – despite some resources provided by the governments of Canada and the United States of America – substantial financial investment was still needed to evaluate and develop several interventions for the control and treatment of Ebola virus disease. Until now – as seen with several other neglected diseases – this disease has received little attention because it was affecting mostly poor people in poor countries.

The above shortcomings aggravate an ethical dilemma. If the treatments for Ebola virus disease that are currently under development could save lives – as the results of animal studies indicate – should they not be used immediately, since far too many people have already died? On the other hand, if there is a possibility that a treatment might cause substantial adverse effects in humans that have not been seen in animal testing, should it not be withheld?[3]
On 11 August 2014, the World Health Organization (WHO) convened a consultation to consider and assess the ethical implications of the potential use of unregistered interventions, such as drugs, vaccines and passive immunotherapy, in the current Ebola outbreak. The results of this consultation have been widely discussed in the media.[4]

In summary, the consultation's panel of experts advised WHO that, in the particular circumstances of the current outbreak – and provided certain conditions are met – it would be ethical to offer unproven interventions – with as yet unknown efficacy and adverse effects – for the potential treatment or prevention of Ebola virus disease. One of the conditions that need to be met is that ethical principles must guide the provision of such interventions. For example, there must be transparency about all aspects of care, informed consent, freedom of choice, confidentiality, respect for the person, preservation of dignity, and involvement of the community.

To understand the safety and efficacy of these interventions, the panel of experts advised that – when and if any of the unregistered interventions is used to treat patients – there is a moral obligation to collect and share all of the data generated, including data arising from any treatment provided for compassionate use – i.e. the use of an unregistered drug outside of a clinical trial.[5]

What can we learn from this crisis? Robust health systems are key for controlling disease outbreaks. Let us make sure that development efforts are designed to strengthen health systems. Well trained and motivated health workers are indispensable. They should be paid and receive the support they need to carry out their duties. And, finally, increasing investment into research and development for the treatment, control and prevention of diseases that currently mostly affect poor people and poor countries should be a key priority for policy-makers worldwide. Let us not forget these lessons when the current Ebola outbreak no longer appears on the front pages of our newspapers.

*References*

Ebola virus disease update – west Africa [Disease Outbreak News, 13 August 2014]. Geneva: World Health Organization; 2014. Available from: http://who.int/csr/don/2014_08_13_ebola [cited 2014 Aug 15].

Key components of a well functioning health system. Geneva: World Health Organization; 2014. Available from: http://who.int/healthsystems/EN_HSSkeycomponents.pdf [cited 2014 Aug 15].

International ethical guidelines for biomedical research involving human subjects. Geneva: Council for International Organizations of Medical Sciences; 2002. Available from: http://www.cioms.ch/publications/layout_guide2002.pdf [cited 2014 Aug 15].

Ethical considerations for use of unregistered interventions for Ebola virus disease (EVD): summary of the panel discussion [WHO statement, 12 August 2014]. Geneva: World Health Organization; 2014. Available from: http://who.int/mediacentre/news/statements/2014/ebola-ethical-review-summary [cited 2014 Aug 15].

Ethical considerations for use of unregistered interventions for Ebola virus disease. Report of an advisory panel to WHO. Geneva: World Health Organization; 2014. Available from: http://www.who.int/csr/resources/publications/ebola/ethical-considerations/en/ [cited 2014 Aug 18].

***Perspectives***

## The Global Vaccine Safety Initiative: enhancing vaccine pharmacovigilance capacity at country level

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*Excerpt*

"…The Decade of Vaccines, which was launched in 2010, aims to increase coordination within the vaccine community worldwide. The Global Vaccine Action Plan[1] – the framework endorsed by the World Health Assembly for the Decade of Vaccines – includes a vaccine safety strategy, the Global Vaccine Safety Blueprint.[2]

The aim of the blueprint is to enhance the safety of vaccines through effective use of pharmacovigilance principles and methods. Its three strategic goals are: to assist LMICs to have at least minimal capacity for vaccine safety activities; to enhance capacity for vaccine safety assessment in countries that introduce newly developed vaccines, that introduce vaccines in settings with novel characteristics, or that manufacture and use prequalified vaccines; and to establish a global support structure for vaccine safety. The blueprint proposes eight complementary strategic objectives. Four of these objectives aim to improve the technical aspects of spontaneous reporting, active surveillance and risk communication; and to ensure the availability of harmonized methods and tools. The remaining four objectives promote the establishment of effective managerial principles to facilitate international collaboration and information exchange relating to vaccine safety monitoring. Implementing the blueprint is a task that requires coordinated participation of vaccine safety stakeholders worldwide. To that end, the World Health Organization (WHO) launched the Global Vaccine Safety Initiative in March 2012.

In its initial phase, the Global Vaccine Safety Initiative is attempting to build a global support structure by linking existing vaccine safety initiatives. Numerous projects are already addressing one or more of the blueprint's strategic objectives. Some of the top priorities for the initiative

are to identify such projects and engage their sponsors in collaboration, and to help disseminate their products and experiences. Therefore, a Global Vaccine Safety Initiative portfolio of activities has been assembled, where activities are prioritized based on their expected impact, geographical relevance, feasibility, usefulness and sustainability.3 For each activity, the portfolio recognizes the roles of initiators, managers and donors. All stakeholders in global pharmacovigilance can use this portfolio to help identify ongoing efforts, allow for better synergies, minimize duplications and enable resource mobilization…

**Clinical Infectious Diseases** (CID)
Volume 59 Issue 6 September 15, 2014
http://cid.oxfordjournals.org/content/current

**Effectiveness of 7-Valent Pneumococcal Conjugate Vaccine Against Invasive Pneumococcal Disease in HIV-Infected and -Uninfected Children in South Africa: A Matched Case-Control Study**

Cheryl Cohen, Claire von Mollendorf, Linda de Gouveia, Nireshni Naidoo, Susan Meiring, Vanessa Quan, Vusi Nokeri, Melony Fortuin-de Smit, Babatyi Malope-Kgokong, David Moore, Gary Reubenson, Mamokgethi Moshe, Shabir A. Madhi, Brian Eley, Ute Hallbauer, Ranmini Kularatne, Laura Conklin, Katherine L. O'Brien, Elizabeth R. Zell, Keith Klugman, Cynthia G. Whitney, and Anne von Gottberg for the South African Invasive Pneumococcal Disease Case-Control Study Group

Clin Infect Dis. (2014) 59 (6): 808-818 doi:10.1093/cid/ciu431

*Abstract*

A 2 + 1 seven-valent pneumococcal conjugate vaccine schedule is effective against vaccine-serotype invasive pneumococcal disease (IPD) in HIV-uninfected children and HIV-exposed but -uninfected children and against all-serotype multidrug-resistant IPD in HIV-uninfected children.

**Editorial Commentary: Failing Our Patients by Suboptimally Treating Influenza Infections**

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(See the Major Article by Havers et al on pages 774–82.)

Influenza is an important cause of morbidity and mortality related to annual epidemics and intermittent pandemics of respiratory viral infections. Whereas most of the 25 million annual cases of influenza result in self-limited infections, influenza is responsible for an excess 31.4 million outpatient visits, 226 000 excess hospitalizations, and up to 48 614 excess deaths annually in the United States [1–5]. Risk factors for serious illness and death include age <2 years or ≥65 years, and medical conditions including compromised immunity, pregnancy, and morbid obesity [3, 5]. Influenza vaccination remains the most important tool in preventing influenza. Unfortunately, influenza vaccine rates remain suboptimal and breakthrough infections, despite appropriate vaccination, do occur [5, 6].

Antiviral therapy with one of the neuraminidase inhibitors (oseltamivir or zanamivir) is recommended for the treatment of patients who develop influenza infections [7, 8]. Prospective studies in ambulatory adults and children have demonstrated that the neuraminidase inhibitors are associated with shorter time to alleviation of illness and with reductions in severity of illness, duration of fever, time to return to normal activity, and quantity of shed virus [9]. Data also

suggest that antiviral therapy is associated with reduction in the frequency of complications leading to antibiotic use, particularly bronchitis, compared with placebo in previously healthy adults [10–12]. In ambulatory adults and children, antiviral therapy is generally effective only if started within the first 48–72 hours after symptom onset [9, 13, 14]. Moreover, earlier initiation of oral oseltamivir therapy is associated with increased therapeutic effects [13].

Data also suggest that antiviral therapy may be associated with fewer hospitalizations, particularly in high-risk patient …

**Clinical Therapeutics**
Volume 36, Issue 8, p1127-1314 August 2014
http://www.clinicaltherapeutics.com/current
[Reviewed earlier]

**Cost Effectiveness and Resource Allocation**
(Accessed 6 September 2014)
http://www.resource-allocation.com/
[No new relevant content]

**Current Opinion in Infectious Diseases**
October 2014 - Volume 27 - Issue 5 pp: v-vi,403-469
http://journals.lww.com/co-infectiousdiseases/pages/currenttoc.aspx
[New issue; No relevant content]

**Developing World Bioethics**
August 2014 Volume 14, Issue 2 Pages ii–viii, 59–110
http://onlinelibrary.wiley.com/doi/10.1111/dewb.2014.14.issue-2/issuetoc
[Reviewed earlier]

**Development in Practice**
Volume 24, Issue 4, 2014
http://www.tandfonline.com/toc/cdip20/current
*Special issue on climate change adaptation and development*

**Emerging Infectious Diseases**
Volume 20, Number 9—September 2014
http://wwwnc.cdc.gov/eid/
[Reviewed earlier]

***New journal added***
**Epidemics**
Volume 8, In Progress (September 2014)

http://www.sciencedirect.com/science/journal/17554365
[No relevant content]

***New journal added***

**Epidemiology and Infection**

Volume 142 - Issue 10 - October 2014
http://journals.cambridge.org/action/displayIssue?jid=HYG&tab=currentissue

***Original Papers***

***Burden of Communicable Diseases in Europe Study***

**The disease burden of hepatitis B, influenza, measles and salmonellosis in Germany: first results of the Burden of Communicable Diseases in Europe Study**

D. PLASSa1 c1, M.-J. J. MANGENa2, A. KRAEMERa1, P. PINHEIROa1, A. GILSDORFa3, G. KRAUSEa3a4, C. L. GIBBONSa5, A. VAN LIERa6, S. A. McDONALDa6, R. J. BROOKEa2, P. KRAMARZa7, A. CASSINIa7 and M. E. E. KRETZSCHMARa2a6

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a5 Institute of Evolutionary Biology, University of Edinburgh, Edinburgh, Scotland, UK
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a7 European Centre for Disease Prevention and Control (ECDC), Stockholm, Sweden

*SUMMARY*

Setting priorities in the field of infectious diseases requires evidence-based and robust baseline estimates of disease burden. Therefore, the European Centre for Disease Prevention and Control initiated the Burden of Communicable Diseases in Europe (BCoDE) project. The project uses an incidence- and pathogen-based approach to measure the impact of both acute illness and sequelae of infectious diseases expressed in disability-adjusted life years (DALYs). This study presents first estimates of disease burden for four pathogens in Germany. The number of reported incident cases adjusted for underestimation served as model input. For the study period 2005–2007, the average disease burden was estimated at 33,116 DALYs/year for influenza virus, 19,115 DALYs/year for Salmonella spp., 8,708 DALYs/year for hepatitis B virus and 740 DALYs/year for measles virus. This methodology highlights the importance of sequelae, particularly for hepatitis B and salmonellosis, because if omitted, the burden would have been underestimated by 98% and 56%, respectively.

**The European Journal of Public Health**

Volume 24 Issue 4 August 2014
http://eurpub.oxfordjournals.org/content/current
[Reviewed earlier]

**Eurosurveillance**

Volume 19, Issue 35, 04 September 2014

http://www.eurosurveillance.org/Public/Articles/Archives.aspx?PublicationId=11678

***Research articles***

**Association between temperature, humidity and ebolavirus disease outbreaks in Africa, 1976 to 2014**
by S Ng, NE Basta, BJ Cowling

**Measles virus spread initiated at international mass gatherings in Europe, 2011**
by S Santibanez, K Prosenc, D Lohr, G Pfaff , O Jordan, A Mankertz

**Is it reasonable to abandon obligatory vaccinations in Italy? A 2013 survey**
by CP Pelullo, S Marino, AJ Valdes Abuadili, G Signoriello, F Attena

**Global Health: Science and Practice (GHSP)**
August 2014 | Volume 2 | Issue 3
http://www.ghspjournal.org/content/current
[Reviewed earlier]

**Globalization and Health**
[Accessed 6 September 2014]
http://www.globalizationandhealth.com/

***Research***

**Learning from developing countries in strengthening health systems: an evaluation of personal and professional impact among global health volunteers at Addis Ababa University's Tikur Anbessa Specialized Hospital (Ethiopia)**
Heidi Busse[1]*, Ephrem A Aboneh[2] and Girma Tefera[1]
Author Affiliations
Globalization and Health 2014, 10:64 doi:10.1186/s12992-014-0064-x
Published: 5 September 2014

*Abstract* (provisional)
Background
The positive impact of global health activities by volunteers from the United States in low-and middle-income countries has been recognized. Most existing global health partnerships evaluate what knowledge, ideas, and activities the US institution transferred to the low- or middle-income country. However, what this fails to capture are what kinds of change happen to US-based partners due to engagement in global health partnerships, both at the individual and institutional levels. ?Reverse innovation? is the term that is used in global health literature to describe this type of impact. The objectives of this study were to identify what kinds of impact global partnerships have on health volunteers from developed countries, advance this emerging body of knowledge, and improve understanding of methods and indicators for assessing reverse innovation.
Methods
The study population consisted of 80 US, Canada, and South Africa-based health care professionals who volunteered at Tikur Anbessa Specialized Hospital in Ethiopia. Surveys were web-based and included multiple choice and open-ended questions to assess global health competencies. The data were analyzed using IBRM SPSS? version 21 for quantitative analysis; the open-ended responses were coded using constant comparative analysis to identify themes.
Results

Of the 80 volunteers, 63 responded (79 percent response rate). Fifty-two percent of the respondents were male, and over 60 percent were 40?years of age and older. Eighty-three percent reported they accomplished their trip objectives, 95 percent would participate in future activities and 96 percent would recommend participation to other colleagues. Eighty-nine percent reported personal impact and 73 percent reported change on their professional development. Previous global health experience, multiple prior trips, and the desire for career advancement were associated with positive impact on professional development.
Conclusion
Professionally and personally meaningful learning happens often during global health outreach. Understanding this impact has important policy, economic, and programmatic implications. With the aid of improved monitoring and evaluation frameworks, the simple act of attempting to measure ?reverse innovation? may represent a shift in how global health partnerships are perceived, drawing attention to the two-way learning and benefits that occur and improving effectiveness in global health partnership spending.

**Global Health Governance**
[Accessed 6 September 2014]
http://blogs.shu.edu/ghg/category/complete-issues/summer-2013/
[No new relevant content]

**Global Public Health**
Volume 9, Supplement 1, 2014
http://www.tandfonline.com/toc/rgph20/.Uq0DgeKy-F9#.U4onnCjDU1w
*This Special Supplement is dedicated to all the Afghan and international health workers who sacrificed their lives during the rebuilding of the Afghan health system.*
[Reviewed earlier]

**Health Affairs**
August 2014; Volume 33, Issue 8
http://content.healthaffairs.org/content/current
*Theme: Variety Issue*
[Reviewed earlier]

**Health and Human Rights**
Volume 16, Issue 1
http://www.hhrjournal.org/
*Climate Justice and the Right to Health – A Special Issue*
[Reviewed earlier]

**Health Economics, Policy and Law**
Volume 9 - Issue 04 - October 2014
http://journals.cambridge.org/action/displayIssue?jid=HEP&tab=currentissue
[No relevant content]

**Health Policy and Planning**
Volume 29 Issue 6 September 2014
http://heapol.oxfordjournals.org/content/current

## Global health in foreign policy—and foreign policy in health? Evidence from the BRICS

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Accepted July 19, 2013.
*Abstract*
Amidst the growing literature on global health, much has been written recently about the Brazil, Russia, India, China, South Africa (BRICS) countries and their involvement and potential impact in global health, particularly in relation to development assistance. Rather less has been said about countries' motivations for involvement in global health negotiations, and there is a notable absence of evidence when their motivations are speculated on. This article uses an existing framework linking engagement in global health to foreign policy to explore differing levels of engagement by BRICS countries in the global health arena, with a particular focus on access to medicines. It concludes that countries' differing and complex motivations reinforce the need for realistic, pragmatic approaches to global health debates and their analysis. It also underlines that these analyses should be informed by analysis from other areas of foreign policy.

**Human Vaccines & Immunotherapeutics** (formerly Human Vaccines)
September 2014 Volume 10, Issue 9
http://www.landesbioscience.com/journals/vaccines/toc/volume/10/issue/8/
*Special focus: Vaccine acceptance*
**Commentary**

## Commentary for Human Vaccines and Immunotherapeutics: The big picture in addressing vaccine hesitancy

Julie Leask, Hal Willaby and Jessica Kaufman
Abstract
Public acceptance of vaccination has never been a given. Today there is a set of societal circumstances that may contribute to a growing parental hesitancy about vaccination. These include: increasingly 'crowded' vaccination schedules; lower prevalence of vaccine-preventable diseases; greater access to, and more rapid dissemination of, vaccine-critical messages via digital networks; hyper-vigilance of parents in relation to children and risk; and an increasingly consumerist orientation to healthcare.

## Health care professionals and adolescent vaccination: A call for intervention research

Gregory D Zimet
Abstract
In their recently published research study, Gargano et al. found that a physician's recommendation and parental health beliefs had significant effects on adolescent vaccination rates and on parental intentions to vaccinate. This research replicates the findings of a number

of human papillomavirus (HPV) vaccine-focused research studies, but explores new territory by focusing on all recommended adolescent vaccines: meningococcal-conjugate (MCV4), HPV, influenza, and tetanus, diphtheria, and acellular pertussis (Tdap) vaccines. Although Gargano et al.'s study is relatively small in scale and focuses on only one county in Georgia, their results are consistent with many other research reports, suggesting that their findings are robust and replicable. Most published intervention studies have targeted parents and young adults, with little focus on health care professionals. However, given the centrality of physician recommendation in adolescent vaccination, as shown by Gargano et al., it is clear that the time has come to develop and evaluate interventions that help physicians and other health care professionals to more effectively implement strong and routine recommendations for all adolescent platform vaccines.

***Commentary***

**Influenza vaccination of healthcare personnel**

Sabine Wicker and Georg Marckmann

Abstract

The thought is terrifying—you are admitted to the hospital and you die of a nosocomial infection. What sounds like a horror scenario, happens every day in hospitals all over the world. Nosocomial influenza is associated with considerable morbidity and mortality among patients with underlying diseases (especially immunocompromised patients), the elderly, and neonates. Although vaccination of healthcare personnel (HCP) is the main measure for preventing nosocomial influenza and is consistently recommended by public-health authorities, vaccine uptake among HCP remains low.[1]

***Review***

**What are the factors that contribute to parental vaccine-hesitancy and what can we do about it?**

Sarah E Williams

Abstract

Parental refusal or delay of childhood vaccines is increasing. Barriers to vaccination among this population have been described, yet less is known regarding motivating factors. Researchers are beginning to evaluate various approaches to address the concerns of "vaccine-hesitant" parents, but few studies have evaluated the effect of interventions on timely vaccine uptake. Several models for communicating with vaccine-hesitant parents have been reported for healthcare providers; however, the effectiveness and utility of these strategies has not been quantified. This article reviews the known barriers to vaccination reported by vaccine-hesitant parents and the current evidence on strategies to address parental vaccine hesitancy.

***Commentary***

**Impact of a physician recommendation**

Paul M Darden and Robert M Jacobson

Abstract

HPV vaccination has failed to achieve uptake comparable to the other adolescent-specific vaccines. Gargano et al. conducted a survey of parents of adolescents in a single Georgia county and found uptake similar to national surveys. They also found among the most commonly cited reasons for receiving vaccines a recommendation from a health care provider and among the most commonly cited reasons for not getting any of the adolescent vaccines were concerns for adverse effects. Of note, they found that the recommendation for any one vaccine had a positive effect on the uptake of other vaccines. Their findings for the importance of provider recommendations matched finds from studies of adolescent vaccines, infant vaccines, and adult vaccines. This is despite flaws in their study including a very poor response

rate (effectively 4.5%) of those surveyed and in their reporting including a lack of details of survey methods. Local surveys of vaccination have much to offer the national and local discussion about immunization delivery and how delivery should be optimized, but such surveys should use standardized approaches as well as pursue more comprehensive investigations at the local level to address the nuances national complex-cluster surveys cannot.

***Research Paper***

**Attitude toward immunization and risk perception of measles, rubella, mumps, varicella, and pertussis in health care workers working in 6 hospitals of Florence, Italy 2011**

Cristina Taddei, Vega Ceccherini, Giuditta Niccolai, Barbara Rita Porchia, Sara Boccalini, Miriam Levi, Emilia Tiscione, Maria Grazia Santini, Simonetta Baretti, Paolo Bonanni and Angela Bechini

Abstract

Background: Health care workers (HCWs) are at risk of infection and transmission of vaccine-preventable infectious diseases. In recent years cases of measles or varicella in health care workers were observed with increasing frequency. The aim of our study was to investigate attitude toward immunization and risk perception of measles, rubella, mumps, varicella, and pertussis in HCWs working in 6 hospitals of Florence (Italy).

Methods: A cross-sectional survey among the physicians, nurses, midwives, and nursing assistants working in selected departments was performed trough a self-administered, anonymous questionnaire. Overall, 600 questionnaires were sent and 436 HCWs' completed forms were included into the study (Participation rate: 72.7%). Data were analyzed with STATA 11.0® and odds ratio (OR) were calculated in a multivariate analysis.

Results: Among all respondents 74.9% were females. The average age was nearly 43-years-old (42.9 – SD 8.95). The majority of participants (58.6%) were nurses, 21.3% physicians, 12.9% nursing assistants, and 7.2% were midwives. Among those HCWs reporting no history of disease, 52.8% (95% CI: 42.0–63.3%) declared to have been immunized for measles, 46.9% for rubella (95% CI: 39.0–54.9%), 21.6% for mumps (95% CI: 15.1–29.4%), 14.9% for varicella (95% CI: 7.4–25.7%), and 14.5% for pertussis (95% CI: 10.0–20.0%). When considering potentially susceptible HCWs (without history of disease or vaccination and without serological confirmation), less than a half of them feel at risk for the concerned diseases and only less than 30% would undergo immunization. One of the main reasons of the relatively low coverage was indeed lack of active offer of vaccines.

Conclusion: Attitudes toward immunization observed in this study are generally positive for preventing some infectious diseases (i.e., measles and rubella), but relatively poor for others (i.e., varicella). More information should be made available to HCWs on the benefits of vaccination and efforts to encourage vaccination uptake should be performed. Educational program on the risk of being infected working in a hospital should be implemented in order to increase the risk perception toward infectious diseases among HCWs.

***Research Paper***

**Knowledge, attitude, and uptake related to human papillomavirus vaccination among young women in Germany recruited via a social media site**

Cornelius Remschmidt, Dietmar Walter, Patrick Schmich, Matthias Wetzstein, Yvonne Deleré and Ole Wichmann

Abstract

Background: Many industrialized countries have introduced human papillomavirus (HPV) vaccination of young women, but vaccine uptake often remains suboptimal. This study aimed to investigate whether a social media site like Facebook is an appropriate tool to assess knowledge, attitude and uptake related to HPV vaccination in young women in Germany.

Methods: Between December 2012 and January 2013 two different targeting strategies were implemented on Facebook, providing a link to an online questionnaire. Advertisements were displayed to female Facebook users aged 18–25 years living in Germany. During the simple targeting strategy, advertisements comprised health-related images along with various short titles and text messages. During the focused strategy, advertisements were targeted to users who in addition had certain fashion brands or pop stars listed on their profiles. The targeting strategies were compared with respect to participant characteristics. Univariate and multivariate analyses were used to identify factors associated with HPV vaccine uptake.
Results: A total of 1161 women participated. The two targeting strategies resulted in significant differences regarding educational status and migrant background. Overall, awareness of HPV was high, but only 53% received at least one vaccine dose. In multivariate analysis, HPV vaccine uptake was independently associated with a physician's recommendation and trust in vaccine effectiveness. Concerns of adverse effects were negatively associated with vaccine uptake.
Discussion: Social network recruitment permits fast and convenient access to young people. Sample characteristics can be manipulated by adjusting targeting strategies. There is further need for promoting knowledge of HPV vaccination among young women. Physicians have a major role in the vaccination decision-making process of young women.

***Review***

**Maternal immunization: Clinical experiences, challenges, and opportunities in vaccine acceptance**

Michelle H Moniz and Richard H Beigi

Abstract

Maternal immunization holds tremendous promise to improve maternal and neonatal health for a number of infectious conditions. The unique susceptibilities of pregnant women to infectious conditions, as well as the ability of maternally-derived antibody to offer vital neonatal protection (via placental transfer), together have produced the recent increased attention on maternal immunization. The Advisory Committee on Immunization Practices (ACIP) currently recommends 2 immunizations for all pregnant women lacking contraindication, inactivated Influenza and tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap). Given ongoing research the number of vaccines recommended during pregnancy is likely to increase. Thus, achieving high vaccination coverage of pregnant women for all recommended immunizations is a key public health enterprise. This review will focus on the present state of vaccine acceptance in pregnancy, with attention to currently identified barriers and determinants of vaccine acceptance. Additionally, opportunities for improvement will be considered.

***Research Paper***

**Vaccination against human papilloma virus infection in male adolescents: Knowledge, attitudes, and acceptability among parents in Italy**

Aida Bianco, Claudia Pileggi, Francesca Iozzo, Carmelo Giuseppe Nobile and Maria Pavia

Abstract

Objectives: To elicit information about parents' knowledge, attitudes, and acceptability towards HPV infection and vaccination of male adolescents in Italy; to identify subgroups of this population who exhibit poor knowledge about prevention of HPV infection and reveal negative attitudes towards HPV vaccination in relation to their male sons. Study design: Data were collected via self-administered anonymous questionnaire from 1021 parents of males aged 10 to 14 years who were recruited from a random sample of public secondary schools in the South of Italy. Results: Three-quarters (72.6%) reported that the vaccine is a preventive measure for

HPV infection and 55.8% that condom use reduces the risk of HPV infection. A high education level, abundant sources of information about HPV infection received from physicians, and knowledge about HPV infection were factors significantly associated with high level of knowledge about preventive measures for HPV infection. 71% revealed their intentions to vaccinate their sons, and this intention was significantly associated with perceived benefits both for HPV vaccination for girls and for childhood recommended vaccinations as well as a need for additional information about HPV vaccination. 53.7% of the eligible parents reported that their daughters had been vaccinated against HPV. Conclusion: Results of the study suggest that the risk of acquiring HPV infection and HPV-related diseases is sorely underestimated. Knowledge on the benefits of adolescents' HPV vaccination in cancer prevention in both sexes should be improved to maximize uptake of HPV vaccination.

***Commentary***

**Social media targeting of health messages: A promising approach for research and practice**

Cornelia Betsch

Abstract

In their contribution, Remschmidt and colleagues[1] put forward an innovative approach for recruiting female, German study participants from diverse social and ethnical backgrounds to assess their knowledge, attitudes, and behaviors regarding HPV vaccination. The approach involves placing advertisements on the social media platform Facebook that specify tags for not only the sought after socio-demographic characteristics (age, gender) but also self-relevant aspects of the target group. These tags determine which Facebook users will see the ad. By sequentially adjusting the tags, the researchers were able to recruit different sub-populations, resulting in a final sample similar to a representative German sample for a particular age group.

***Research Paper***

**Factors Associated with Maternal Influenza Immunization Decision-Making: Evidence of Immunization History and Message Framing Effects**

Paula M Frew, Lauren E Owens, Diane S Saint-Victor, Samantha Benedict, Siyu Zhang and Saad B Omer

Abstract

Objective

We examined pregnant women’s intention to obtain the seasonal influenza vaccine via a randomized controlled study examining the effects of immunization history, message exposure, and sociodemographic correlates.

Methods

Pregnant women ages 18–50 participated in a randomized message framing study from September 2011 through May 2012. Venue-based sampling was used to recruit racial and ethnic minority women throughout Atlanta, Georgia. Key outcomes were evaluated using bivariate and multivariate analyses.

Results

History of influenza immunization was positively associated with intent to immunize during pregnancy [OR = 2.31, 90%CI: (1.06, 5.00)]. Significant correlates of intention to immunize included perceived susceptibility to influenza during pregnancy [OR = 3.8, 90% CI: (1.75, 8.36)] and vaccine efficacy [OR = 10.53, 90% CI: (4.34, 25.50)]. Single message exposure did not influence a woman’s intent to vaccinate.

Conclusions

Prior immunization, perceived flu susceptibility and perceived vaccine effectiveness promoted immunization intent among this population of pregnant minority women. Vaccine efficacy and

disease susceptibility are critical to promoting immunization among women with no history of seasonal influenza immunization, while those who received the vaccine are likely to do so again. These findings provide evidence for the promotion of repeated exposure to vaccine messages emphasizing vaccine efficacy, normative support, and susceptibility to influenza.

***Research Paper***

**Parental concern about vaccine safety in Canadian children partially immunized at age two: A multivariable model including system level factors**

Donald Schopflocher, Wendy Vaudry and Shannon MacDonald

Abstract

Children who begin but do not fully complete the recommended series of childhood vaccines by two years of age are a much larger group than those who receive no vaccines. While parents who refuse all vaccines typically express concern about vaccine safety, it is critical to determine what influences parents of 'partially' immunized children. This case-control study examined whether parental concern about vaccine safety was responsible for partial immunization, and whether other personal or system-level factors played an important role. A random sample of parents of partially and completely immunized two year old children were selected from a Canadian regional immunization registry and completed a postal survey assessing various personal and system-level factors. Unadjusted odds ratios (OR) and adjusted ORs (aOR) were calculated with logistic regression. While vaccine safety concern was associated with partial immunization (OR 7.338, 95% CI 4.138- 13.012), other variables were more strongly associated and reduced the strength of the relationship between concern and partial immunization in multivariable analysis (aOR 2.829, 95% CI 1.151 - 6.957). Other important factors included perceived disease susceptibility and severity (aOR 4.629, 95% CI 2.017 - 10.625), residential mobility (aOR 3.908, 95% CI 2.075 - 7.358), daycare use (aOR 0.310, 95% CI 0.144 - 0.671), number of needles administered at each visit (aOR 7.734, 95% CI 2.598 - 23.025) and access to a regular physician (aOR 0.219, 95% CI 0.057 - 0.846). While concern about vaccine safety may be addressed through educational strategies, this study suggests that additional program and policy-level strategies may positively impact immunization uptake.

***Commentary***

**Protecting a New Generation against HPV: Are We Willing to be Bold?**

Richard Crosby, Lindsay Stradtman and Robin Vanderpool

Abstract

Despite the advent of a novel human papillomavirus (HPV) vaccine to prevent associated cancers, HPV vaccination rates in the United States (US) remain well below national goals. Two recent reports by the Centers for Disease Control and Prevention (CDC) and the President's Cancer Panel (PCP) have identified missed clinical opportunities as an intervention point for increasing HPV vaccination rates, including the provision of immunization in alternative venues by varying healthcare providers. In this paper, we specifically comment on the idea of offering HPV vaccination in emergency departments (ED) by emergency medicine (EM) physicians as posited by Hill and Okugo (2014), identifying both strengths and limitations to this strategy. We also offer ideas for additional research, suggest provider and healthcare systems changes, and discuss needed policy changes to improve HPV vaccination rates in the US.

***Commentary***

**Comprehensive Efforts to Increase Healthcare Personnel Immunization**

Samuel B Graitcer, David Kim and Megan Lindley

Abstract

Vaccination of healthcare personnel (HCP) is an important component of worker and patient safety, yet vaccination rates are lagging. The findings from Taddei et al.'s study of healthcare

personnel immunization attitudes and practices in Florence, Italy provides further data of the importance of routine assessment of and recommendations for vaccines for HCP in order to improve coverage.

**Does Intention to Recommend HPV Vaccines Impact HPV Vaccination Rates?**

Maria Middleton, Alexander Fiks, Sarah Winters, Sara Kinsman, Jessica Kahn and Kristen Feemster

Abstract

Despite recommendations for routine vaccination, HPV vaccination rates among adolescent females have remained low. The objective of this prospective cohort study was to determine whether clinician intention to recommend HPV vaccines predicts HPV vaccine series initiation among previously unvaccinated 11 to 18 year-old girls (N=18,083) who were seen by a pediatric clinician (N=105) from a large primary care network within three years of vaccine introduction. We used multivariable logistic regression with generalized estimating equations, Cox Regression and standardized survival curves to measure the association between clinician intention and time to and rate of first HPV vaccine receipt among eligible females. All models adjusted for patient age, race / ethnicity, payor category, visit type, and practice location. Eighty-five percent of eligible 11 to 12 year-old and 95% of 13 to 18 year-old girls were seen by a provider reporting high intention to recommend HPV vaccines. However, only 30% of the cohort initiated the HPV vaccine series and the mean number of days from first eligible visit to series initiation was 190 (95% C.I. 184.2, 195.4). After adjusting for covariates, high clinician intention was modestly associated with girls' likelihood of HPV vaccine series initiation (OR 1.36; 95 % C.I. 1.07, 1.71) and time to first HPV vaccination (HR 1.22; 95% 1.06, 1.40). Despite high intention to vaccinate among this cohort of pediatric clinicians, overall vaccination rates for adolescent girls remained low. These findings support ongoing efforts to develop effective strategies to translate clinician intention into timely HPV vaccine receipt.

***Commentary***

**Making evidence-based selections of influenza vaccines**

Billy-Clyde Childress, Joshua D Montney and Elise A Albro

Abstract

Years ago, intramuscular influenza vaccines were the only option for those who wanted to arm themselves against the flu. Today there are alternatives, including intradermal injections and intranasal sprays. In order to select the right influenza vaccine for their patients, pharmacists, and other healthcare professionals must have a basic understanding of the immune system. Influenza vaccines elicit different levels of immune response involving innate and adaptive immunity, which are critical to fighting infection. For the 2013–2014 flu season, there were 13 different formulations of influenza vaccines on the market with vast differences in indications, contraindications, and effectiveness. The CDC does not recommend one vaccine over another, but recommends that all patients be vaccinated against the flu. Preventing the spread of influenza is no simple task; however, the most recent evidence on influenza vaccines and sufficient knowledge of the immune system will allow pharmacists and other healthcare providers to better advocate for vaccines, determine which are most appropriate, and ensure their proper administration.

**Infectious Agents and Cancer**

[Accessed 6 September 2014]

http://www.infectagentscancer.com/content

[No new relevant content]

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[Accessed 6 September 2014]
http://www.idpjournal.com/content
[No new relevant content]

**International Journal of Epidemiology**
Volume 43 Issue 4 August 2014
http://ije.oxfordjournals.org/content/current
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**International Journal of Infectious Diseases**
Vol 26 Complete | September 2014 | Pages 1-172
http://www.ijidonline.com/current

**Immunogenicity and safety of a quadrivalent meningococcal polysaccharide CRM conjugate vaccine in infants and toddlers**

Miguel Tregnaghi, Pio Lopez, Daniel Stamboulian, Gabriela Graña, Tatjana Odrljin, Lisa Bedell, Peter M. Dull

Received 20 December 2013; received in revised form 7 March 2014; accepted 27 March 2014. published online 30 June 2014.
Corresponding Editor: Eskild Petersen, Aarhus, Denmark

*Summary*
Objectives
This phase III study assessed the safety and immunogenicity of MenACWY-CRM, a quadrivalent meningococcal conjugate vaccine, administered with routine vaccines starting at 2 months of age.
Methods
Healthy infants received MenACWY-CRM in a two- or three-dose primary infant series plus a single toddler dose. In addition, a two-dose toddler catch-up series was evaluated. Immune responses to MenACWY-CRM were assessed for serum bactericidal activity with human complement (hSBA). Reactogenicity and safety results were collected systematically.
Results
After a full infant/toddler series or two-dose toddler catch-up series, MenACWY-CRM elicited immune responses against the four serogroups in 94–100% of subjects. Noninferiority of the two- versus three-dose MenACWY-CRM infant dosing regimen was established for geometric mean titers for all serogroups. Following the three-dose infant primary series, 89–98% of subjects achieved an hSBA ≥8 across all serogroups. Immune responses to concomitant routine vaccines given with MenACWY-CRM were noninferior to responses to routine vaccines alone, except for pertactin after the two-dose infant series. Noninferiority criteria were met for all concomitant antigens after the three-dose infant series.
Conclusions
MenACWY-CRM vaccination regimens in infants and toddlers were immunogenic and well tolerated. No clinically meaningful effects of concomitant administration with routine infant and toddler vaccines were observed.

## An outbreak of adult measles by nosocomial transmission in a high vaccination coverage community

Fen-juan Wang, Xiang-jue Sun, Fu-liang Wang, Long-fang Jiang, Er-ping Xu, Jian-feng Guo

Received 3 March 2014; received in revised form 4 May 2014; accepted 6 May 2014. published online 07 July 2014.
Corresponding Editor: Eskild Petersen, Aarhus, Denmark

*Abstract*

Highlights

*:: With the implementation of hastened measles elimination strategies, the susceptible populations now have moved to the infants under 8 months who are too young to receive the MCV vaccination and the adults over 20 year old.*

*:: Hospital exposure 1~2 weeks before infected with measles was the main cause of the community-based measles outbreak, there is a link between them.*

*:: Controlling nosocomial infections is a vital link in propagation of measles prevention and control.*

*Summary*

Objectives

The aims of this study were to determine the mechanism of an outbreak of measles in adults and to provide scientific measures for putting forward a measles elimination program.

Methods

We performed a cross-sectional investigation during the measles outbreak to identify a possible communication link.

Results

From November 1, 2011 to January 26, 2012, the town reported 11 cases of measles in total. The case study identified an obvious propagation chain, which showed ordered and intimate exposure between cases.

Conclusions

Hospital exposure 1–2 weeks before infection with measles was the main cause of the measles outbreak. We must be fully aware of the possibility of nosocomial infection in an outbreak of measles; controlling nosocomial infections is a vital step in the prevention and control of the propagation of measles.

**JAMA**
September 3, 2014, Vol 312, No. 9
http://jama.jamanetwork.com/issue.aspx
[No relevant content]

**JAMA Pediatrics**
September 2014, Vol 168, No. 9
http://archpedi.jamanetwork.com/issue.aspx
[No relevant content]

**Journal of Community Health**
Volume 39, Issue 4, August 2014
http://link.springer.com/journal/10900/39/4/page/1

[Reviewed earlier]

**Journal of Global Ethics**
Volume 10, Issue 2, 2014
http://www.tandfonline.com/toc/rjge20/.U2V-Elf4L0l#.VAJEj2N4WF8
**Tenth Anniversary Forum: The Future of Global Ethics**
[Reviewed earlier]

**Journal of Global Infectious Diseases (JGID)**
July-September 2014 Volume 6 | Issue 3 Page Nos. 93-137
http://www.jgid.org/currentissue.asp?sabs=n
[Reviewed earlier]

**Journal of Health Care for the Poor and Underserved (JHCPU)**
Volume 25, Number 3, August 2014
http://muse.jhu.edu/journals/journal_of_health_care_for_the_poor_and_underserved/toc/hpu.25.3.html
[Reviewed earlier]

**Journal of Health Organization and Management**
Volume 28 issue 4 - Latest Issue
http://www.emeraldinsight.com/journals.htm?issn=1477-7266&show=latest
[Reviewed earlier]

**Journal of Immigrant and Minority Health**
Volume 16, Issue 5, October 2014
http://link.springer.com/journal/10903/16/4/page/1
**Screening and Vaccines in an Urban Primary Care Practice: A Retrospective Chart Review**
Barbara Waldorf, Christopher Gill, Sondra S. Crosby
*Abstract*
In the United States, 38.5 million people are foreign-born, one in three arriving since 2000. Health issues include high rates of hepatitis B, human immunodeficiency virus infection, parasitic infections, and M. tuberculosis. We sought to determine rates of provider adherence to accepted national guidelines for immigrant and refugee health screening and vaccines done at the primary care clinics at Boston Medical Center. Randomized, retrospective chart review of foreign born patients in the primary care clinics. We found low screening and immunization rates that do not conform to CDC/ACIP guidelines. Only 43 % of immigrant patients had tuberculosis screening, 36 % were screened for HIV and hepatitis B, and 33 % received tetanus vaccinations. Organizational changes incorporating multi-disciplinary approaches such as creative use of nursing staff, protocols, standing orders, EMR reminders, and web based educational tools can contribute to better outcomes by identifying patients and improving utilization of guidelines.

**Journal of Infectious Diseases**
Volume 210 Issue 6 September 15, 2014
http://jid.oxfordjournals.org/content/current
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**Journal of Medical Ethics**
September 2014, Volume 40, Issue 9
http://jme.bmj.com/content/current
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**Journal of Medical Microbiology**
September 2014; 63 (Pt 9)
http://jmm.sgmjournals.org/content/current
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**Journal of the Pediatric Infectious Diseases Society (JPIDS)**
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http://jpids.oxfordjournals.org/content/current
[Reviewed earlier]

**Journal of Pediatrics**
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http://www.jpeds.com/current
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Volume 35, Issue 3 (August 2014)
http://www.palgrave-journals.com/jphp/journal/v35/n3/index.html
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**Journal of the Royal Society – Interface**
October 6, 2014; 11 (99)
http://rsif.royalsocietypublishing.org/content/current
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**Journal of Virology**
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http://jvi.asm.org/content/current
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**The Lancet**
Sep 06, 2014 Volume 384 Number 9946 p829 - 928
http://www.thelancet.com/journals/lancet/issue/current
***Editorial***
**A step forward on data sharing and consent**
The Lancet
Preview |
Following public consultation, the US National Institutes of Health (NIH) announced their policy on Genomic Data Sharing on Aug 27, to ensure broad and responsible sharing of genomic research data generated from NIH-funded research. At the core of the policy is the expectation that researchers obtain explicit informed consent from study participants for the potential future use of their deidentified data for research and sharing.

**The Lancet Global Health**
Sep 2014 Volume 2 Number 9 e488 – 549
http://www.thelancet.com/journals/langlo/issue/current
[Reviewed earlier]

**The Lancet Infectious Diseases**
Sep 2014 Volume 14 Number 9 p779 - 898
http://www.thelancet.com/journals/laninf/issue/current
[Reviewed earlier]

**Medical Decision Making (MDM)**
August 2014; 34 (6)
http://mdm.sagepub.com/content/current
[Reviewed earlier]

**The Milbank Quarterly**
*A Multidisciplinary Journal of Population Health and Health Policy*
June 2014 Volume 92, Issue 2 Pages 167–405
http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1468-0009/currentissue
[Reviewed earlier]

**Nature**
Volume 513 Number 7516 pp6-136 4 September 2014
http://www.nature.com/nature/current_issue.html
[Reviewed earlier]

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September 2014, Volume 15 No 9 pp789-894
http://www.nature.com/ni/journal/v15/n9/index.html
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**Nature Medicine**
August 2014, Volume 20 No 8 pp795-966
http://www.nature.com/nm/journal/v20/n8/index.html
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**New England Journal of Medicine**
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http://www.nejm.org/toc/nejm/medical-journal
***Original Article***
**Influenza Vaccination of Pregnant Women and Protection of Their Infants**
Shabir A. Madhi, M.D., Ph.D., Clare L. Cutland, M.D., Locadiah Kuwanda, M.Sc., Adriana Weinberg, M.D., Andrea Hugo, M.D., Stephanie Jones, M.D., Peter V. Adrian, Ph.D., Nadia van Niekerk, B.Tech., Florette Treurnicht, Ph.D., Justin R. Ortiz, M.D., Marietjie Venter, Ph.D., Avy Violari, M.D., Kathleen M. Neuzil, M.D., Eric A.F. Simões, M.D., Keith P. Klugman, M.D., Ph.D., and Marta C. Nunes, Ph.D. for the Maternal Flu Trial (Matflu) Team
N Engl J Med 2014; 371:918-931September 4, 2014DOI: 10.1056/NEJMoa1401480
Background
There are limited data on the efficacy of vaccination against confirmed influenza in pregnant women with and those without human immunodeficiency virus (HIV) infection and protection of their infants.
Methods
We conducted two double-blind, randomized, placebo-controlled trials of trivalent inactivated influenza vaccine (IIV3) in South Africa during 2011 in pregnant women infected with HIV and during 2011 and 2012 in pregnant women who were not infected. The immunogenicity, safety, and efficacy of IIV3 in pregnant women and their infants were evaluated until 24 weeks after birth. Immune responses were measured with a hemagglutination inhibition (HAI) assay, and influenza was diagnosed by means of reverse-transcriptase–polymerase-chain-reaction (RT-PCR) assays of respiratory samples.
Results
The study cohorts included 2116 pregnant women who were not infected with HIV and 194 pregnant women who were infected with HIV. At 1 month after vaccination, seroconversion rates and the proportion of participants with HAI titers of 1:40 or more were higher among IIV3 recipients than among placebo recipients in both cohorts. Newborns of IIV3 recipients also had higher HAI titers than newborns of placebo recipients. The attack rate for RT-PCR–confirmed influenza among both HIV-uninfected placebo recipients and their infants was 3.6%. The attack rates among HIV-uninfected IIV3 recipients and their infants were 1.8% and 1.9%,

respectively, and the respective vaccine-efficacy rates were 50.4% (95% confidence interval [CI], 14.5 to 71.2) and 48.8% (95% CI, 11.6 to 70.4). Among HIV-infected women, the attack rate for placebo recipients was 17.0% and the rate for IIV3 recipients was 7.0%; the vaccine-efficacy rate for these IIV3 recipients was 57.7% (95% CI, 0.2 to 82.1).
Conclusions
Influenza vaccine was immunogenic in HIV-uninfected and HIV-infected pregnant women and provided partial protection against confirmed influenza in both groups of women and in infants who were not exposed to HIV. (Funded by the Bill and Melinda Gates Foundation and others; ClinicalTrials.gov numbers, NCT01306669 and NCT01306682.)

**The Pediatric Infectious Disease Journal**
September 2014 - Volume 33 - Issue 9 pp: 893-996,e219-e246
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**Pediatrics**
September 2014, VOLUME 134 / ISSUE 3
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***Article***
**Long-term Study of a Quadrivalent Human Papillomavirus Vaccine**
Daron Ferris, MDa, Rudiwilai Samakoses, MDb, Stan L. Block, MDc, Eduardo Lazcano-Ponce, Dd, Jaime Alberto Restrepo, MDe, Keith S. Reisinger, MD, MPHf, Jesper Mehlsen, MDg, Archana Chatterjee, MD, PhDh, Ole-Erik Iversen, MDi, Heather L. Sings, PhDj, Qiong Shou, PhDj, Timothy A. Sausser, BSj, and Alfred Saah, MDj
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jMerck & Co., Inc, Whitehouse Station, New Jersey
*Abstract*
BACKGROUND: We present a long-term safety, immunogenicity, and effectiveness study of a quadrivalent human papillomavirus (HPV4) vaccine.
METHODS: Sexually naive boys and girls aged 9 to 15 years (N = 1781) were assigned (2:1) to receive HPV4 vaccine or saline placebo at day 1 and months 2 and 6. At month 30, the placebo group (n = 482) received HPV4 vaccine following the same regimen and both cohorts were followed through month 96. Subjects ≥16 years were eligible for effectiveness evaluations. The primary objective was to evaluate the long-term anti-HPV6/11/16/18 serological levels. The

secondary objective was to estimate vaccine effectiveness against HPV6/11/16/18-related persistent infection or disease.
RESULTS: For each of the HPV4 vaccine types, vaccination-induced anti-HPV response persisted through month 96. Among 429 subjects who received HPV4 vaccine at a mean age of 12, none developed HPV6/11/16/18-related disease or persistent infection of ≥12 months' duration. Acquisition of new sexual partners (among those ≥16 years) was ~1 per year. Subjects receiving HPV4 vaccine at month 30 (mean age 15 years) had a similar baseline rate of seropositivity to ≥1 of the 4 HPV types to those vaccinated at day 1 (mean age 12 years; 1.9% [9 of 474] vs 1.7% [20 of 1157]); however, 4 of the 9 subjects vaccinated at the later age were seropositive to 3 vaccine types, indicating previous HPV exposure. No new significant serious adverse events were observed for 8 years postvaccination in both genders.
CONCLUSIONS: When administered to adolescents, the HPV4 vaccine demonstrated durability in clinically effective protection and sustained antibody titers over 8 years.

***Article***

**Missed Opportunities for HPV Vaccination in Adolescent Girls: A Qualitative Study**

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cBoston University School of Public Health, Boston, Massachusetts;
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eHarvard Vanguard Medical Associates, Burlington, Massachusetts

*Abstract*
OBJECTIVE: The goal of this study was to identify the rationale by parents/guardians and providers for delaying or administering human papillomavirus (HPV) vaccination to girls.
METHODS: Qualitative interviews were conducted with parents/guardians accompanying their vaccine-eligible 11- to 17-year-old daughters to medical visits. Interviews were conducted in 1 public clinic and 3 private practice settings to ascertain why girls did or did not receive HPV vaccination. Questions probed vaccine decision-making from the point of view of parents/guardians and providers.
RESULTS: A total of 124 parents/guardians and 37 providers participated. The most common reasons parents reported for not vaccinating their daughters was the lack of a physician recommendation (44%). Both parents and providers believed that HPV vaccination provided important health benefits, but the timing of vaccination with relation to sexual activity was an important theme related to vaccine delay. Providers with lower self-reported vaccination rates delayed vaccine recommendations in girls perceived to be at low risk for sexual activity, and several parents reported that their providers suggested or supported delaying vaccination until their daughters were older. However, parents/guardians and providers agreed that predicting the timing of sexual debut was extremely difficult. In contrast, providers with high vaccination rates presented HPV vaccination as a routine vaccine with proven safety to prevent cancer, and parents responded positively to these messages.
CONCLUSIONS: Although most parents and providers believe that HPV vaccination is important, missed opportunities result from assumptions about the timing of vaccination relative to sexual activity. Routinely recommending HPV vaccination as cancer prevention to be coadministered with other vaccines at age 11 years can improve vaccination rates

***Article***

## Vaccine Message Framing and Parents' Intent to Immunize Their Infants for MMR

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Author Affiliations
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*Abstract*
BACKGROUND AND OBJECTIVE: Emphasizing societal benefits of vaccines has been linked to increased vaccination intentions in adults. It is unclear if this pattern holds for parents deciding whether to vaccinate their children. The objective was to determine whether emphasizing the benefits of measles-mumps-rubella (MMR) vaccination directly to the vaccine recipient or to society differentially impacts parents' vaccine intentions for their infants.
METHODS: In a national online survey, parents (N = 802) of infants <12 months old were randomly assigned to receive 1 of 4 MMR vaccine messages: (1) the Centers for Disease Control and Prevention Vaccine Information Statement (VIS), (2) VIS and information emphasizing the MMR vaccine's benefits to the child, (3) VIS and information emphasizing societal benefits, or (4) VIS and information emphasizing benefits both to the child and society. Parents reported their likelihood of vaccinating their infants for MMR on a response scale of 0 (extremely unlikely) to 100 (extremely likely).
RESULTS: Compared with the VIS-only group (mean intention = 86.3), parents reported increased vaccine intentions for their infants when receiving additional information emphasizing the MMR vaccine's benefits either directly to the child (mean intention = 91.6, P = .01) or to both the child and society (mean intention = 90.8, P = .03). Emphasizing the MMR vaccine's benefits only to society did not increase intentions (mean intention = 86.4, P = .97).
CONCLUSIONS: We did not see increases in parents' MMR vaccine intentions for their infants when societal benefits were emphasized without mention of benefits directly to the child. This finding suggests that providers should emphasize benefits directly to the child. Mentioning societal benefits seems to neither add value to, nor interfere with, information highlighting benefits directly to the child.

***Article***

## Impact of a Pertussis Epidemic on Infant Vaccination in Washington State

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Departments of bPediatrics, and
eEpidemiology, University of Washington, Seattle, Washington;
cWashington State Department of Health, Olympia, Washington; and
dWashington State Immunization Information System, Seattle, Washington

*Abstract*
BACKGROUND AND OBJECTIVES: Washington State experienced a pertussis epidemic from October 2011 to December 2012. There was wide variation in incidence by county. The objectives of this study were to determine how the pertussis epidemic affected infant vaccination in Washington State and whether the incidence in counties modified this effect.

METHODS: We conducted an ecologic before–after study to compare the proportion of infants up to date (UTD) with a pertussis-containing vaccine at time points before (September 30, 2011), during (September 30, 2012), and after (September 30, 2013) the epidemic. Children aged 3 to 8 months enrolled in the Washington State Immunization Information System with documented county of residence were included. UTD status was determined as ≥1, ≥2, or ≥3 doses of a pertussis-containing vaccine at ages 3, 5, and 7 months, respectively. Generalized linear models with extension to the binomial family and clustered robust standard errors were used to examine differences in the proportion of UTD infants between preepidemic and either epidemic or postepidemic points. The potential modifying effect of pertussis incidence by county was examined.
RESULTS: We found no significant difference in statewide UTD status with a pertussis-containing vaccine between preepidemic and either epidemic (absolute difference 2.1%; 95% confidence interval, −1.6 to 5.9) or postepidemic (absolute difference 0.2%; 95% confidence interval, −4.0 to 4.5) time points. There was no significant modification by county pertussis incidence. There was wide variation in the absolute difference in UTD status across counties.
CONCLUSIONS: A statewide pertussis epidemic does not appear to have significantly changed the proportion of infants who were UTD with a pertussis-containing vaccine.

***Commentary***

**Pertussis Resurgence and Vaccine Uptake: Implications for Reducing Vaccine Hesitancy**

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Previously controlled vaccine preventable diseases (VPDs) are in resurgence.1,2 To date, there have been 477 confirmed measles cases in the United States in 2014, the most in 18 years.3 In 2013 there were ∼25 000 pertussis cases in the United States. Vaccine refusal has been associated with outbreaks of invasive Haemophilus influenzae type b disease,4 varicella,5 pneumococcal disease,6 measles,7 and pertussis.8–12

Even while national and statewide immunization coverage remain high, rates of parents who refuse vaccines via nonmedical exemptions (NMEs) to school immunization requirements have been increasing.13,14 Furthermore, NMEs cluster geographically,9,10 leading to critical reductions in herd immunity and a perfect storm for sustained transmission, outbreaks, and increased risk of VPDs to both unvaccinated and vaccinated individuals.7,9,10,15,16

Beyond active refusal, many parents are delaying vaccines and using "alternative immunization schedules" to spread out the number of vaccines given per visit or in infancy.17 Seventy-seven percent of parents of young children report concerns about vaccines, such as the number of vaccines or doses given simultaneously or before age two, what ingredients are contained in vaccines, or if there are associations with adverse outcomes such as autism and other chronic diseases.18 Some have gone so far as to identify a "vaccine crisis in confidence…"19–21

**Pharmaceutics**
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http://www.mdpi.com/1999-4923/6/2
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**Pharmacoeconomics**
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http://link.springer.com/journal/40273/32/9/page/1
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**PLoS One**
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http://www.plosone.org/
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**PLoS Medicine**
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http://www.plosmedicine.org/
**Oral Cholera Vaccine Development and Use in Vietnam**
Dang Duc Anh, Anna Lena Lopez mail, Hung Thi Mai Tran, Nguyen Van Cuong, Vu Dinh Thiem, Mohammad Ali, Jacqueline L. Deen, Lorenz von Seidlein, David A. Sack
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*Summary Points*
:: Vietnam is the first and only country in the world to regularly use oral cholera vaccines (OCVs) in their cholera control program.
:: From 1998 to 2012, more than 10.9 million doses of the locally produced OCV were deployed in the country through its public health system.
:: We present an overview of cholera epidemiology in Vietnam and the development and deployment of the OCV.
:: Since 1997, the number of cholera cases in Vietnam has declined, in association with increased OCV use as well as improvements in socioeconomic and water and sanitation conditions. It is not possible to establish the relative contributions of each of these to the reduction in cholera rates.
:: Hue, the only province to use OCVs consistently every year, has not reported any cholera case since 2003.
:: As WHO organizes a stockpile of OCV for use in emergencies and recommends the use of OCVs together with traditional means of control, the experience in Vietnam will be helpful to other at-risk countries as they look towards adopting the vaccine in their cholera control programs.
*Cholera: A Continuing Public Health Threat*
The emergence of cholera in Haiti highlighted the difficulties in containing cholera outbreaks with only safe water, sanitation, hygiene, and appropriate case management. In less developed settings where cholera occurs, these basic needs are often not met or are rapidly overwhelmed during man-made or natural disasters. Prior to the Haitian outbreak, countries in Africa and Asia had borne most of the cholera burden, with an estimated 1.4 billion people at risk, 2.8 million cases, and 100,000 to 200,000 deaths occurring annually [1],[2]; however, because of

difficulties in surveillance and differences in reporting systems, only 245,393 cases with 3,034 deaths were reported to the World Health Organization (WHO) in 2012 [1]. This figure does not include the large number of acute watery diarrhoea cases reported in Asia, of which a significant proportion is caused by Vibrio cholerae. As cholera continues to be a global public health problem, in 2011, the World Health Assembly called for an integrated and comprehensive approach to cholera control, including oral cholera vaccines (OCVs) [3].
OCVs have been available for more than 20 years, but public health use has been limited. Vietnam is the first and currently the only country in the world to use killed OCVs routinely in its public health program. This article describes the cholera problem in Vietnam and how an oral cholera vaccine was developed and used as a component of a public health strategy against the disease…

**PLoS Neglected Tropical Diseases**
(Accessed 6 September 2014)
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Peter J. Hotez
Viewpoints | published 04 Sep 2014 | PLOS Neglected Tropical Diseases
10.1371/journal.pntd.0003012

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**Pneumonia**
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**Public Health Ethics**
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**Qualitative Health Research**
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**Revista Panamericana de Salud Pública/Pan American Journal of Public Health (RPSP/PAJPH)**
July 2014 Vol. 36, No. 1
http://www.paho.org/journal/index.php?option=com_content&view=article&id=148&Itemid=261&lang=en
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**Risk Analysis**
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[Reviewed earlier]

**Science**
5 September 2014 vol 345, issue 6201, pages 1093-1208
http://www.sciencemag.org/current.dtl
[No relevant content]

**Social Science & Medicine**
Volume 118, In Progress (October 2014)
http://www.sciencedirect.com/science/journal/02779536/118
[Reviewed earlier]

**Tropical Medicine and Health**
Vol. 42(2014) No. 2
https://www.jstage.jst.go.jp/browse/tmh/42/2/_contents
[Reviewed earlier]

**Vaccine**
Volume 32, Issue 41, Pages 5259-5370 (15 September 2014)
http://www.sciencedirect.com/science/journal/0264410X/32/41
[Reviewed earlier]

**Vaccine: Development and Therapy**
(Accessed 6 September 2014)
http://www.dovepress.com/vaccine-development-and-therapy-journal
[No new relevant content]

**Vaccines — Open Access Journal**
(Accessed 6 September 2014)
http://www.mdpi.com/journal/vaccines
[No new relevant content]

**Value in Health**
Vol 17 | No. 5 | July 2014 | Pages 491-660
http://www.valueinhealthjournal.com/current
[Reviewed earlier]

## ***From Google Scholar & other sources: Selected Journal Articles, Newsletters, Dissertations, Theses, Commentary***

**International Health**
Volume 6, Issue 3 Pp. 160-161.
**Vaccination in humanitarian crises: satisficing should no longer suffice**
Rebecca F. Graisa, and Aitana Juan-Ginera,b
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bInternational Vaccination Working Group, Médecins Sans Frontières, Paris, France
Received May 22, 2014.
Revision received July 9, 2014.
Accepted July 9, 2014. doi: 10.1093/inthealth/ihu051
*Abstract*
There are more possible vaccination interventions to mitigate the adverse health consequences of populations in crises than ever before, but recent reviews suggest delivering these vaccines has been fraught with difficulty. The decision to implement vaccination interventions in crises remains, more often than not, an exercise in satisficing. The sparse credible epidemiologic and effectiveness data in populations affected by crises contributes greatly to decision-making difficulty, as do the limits of vaccine presentations, formulations and storage. Political considerations and lack of decision-making guidance contribute further. Moving forward requires sound effectiveness studies to help ensure that decision-making is based to the degree possible on substance.

**Journal of Medical Internet Research**
2014;16(9):e198)
Original Paper
**Estimation of Geographic Variation in Human Papillomavirus Vaccine Uptake in Men and Women: An Online Survey Using Facebook Recruitment**
Erik J Nelson1, MPH, PhD; John Hughes2, PhD; J Michael Oakes1, PhD; James S Pankow1, MPH, PhD; Shalini L Kulasingam1, PhD
1School of Public Health, Division of Epidemiology and Community Health, University of Minnesota, Minneapolis, MN, United States
2School of Public Health, Division of Biostatistics, University of Minnesota, Minneapolis, MN, United States
*ABSTRACT*

Background: Federally funded surveys of human papillomavirus (HPV) vaccine uptake are important for pinpointing geographically based health disparities. Although national and state level data are available, local (ie, county and postal code level) data are not due to small sample sizes, confidentiality concerns, and cost. Local level HPV vaccine uptake data may be feasible to obtain by targeting specific geographic areas through social media advertising and recruitment strategies, in combination with online surveys.
Objective: Our goal was to use Facebook-based recruitment and online surveys to estimate local variation in HPV vaccine uptake among young men and women in Minnesota.
Methods: From November 2012 to January 2013, men and women were recruited via a targeted Facebook advertisement campaign to complete an online survey about HPV vaccination practices. The Facebook advertisements were targeted to recruit men and women by location (25 mile radius of Minneapolis, Minnesota, United States), age (18-30 years), and language (English).
Results: Of the 2079 men and women who responded to the Facebook advertisements and visited the study website, 1003 (48.2%) enrolled in the study and completed the survey. The average advertising cost per completed survey was US $1.36. Among those who reported their postal code, 90.6% (881/972) of the participants lived within the previously defined geographic study area. Receipt of 1 dose or more of HPV vaccine was reported by 65.6% women (351/535), and 13.0% (45/347) of men. These results differ from previously reported Minnesota state level estimates (53.8% for young women and 20.8% for young men) and from national estimates (34.5% for women and 2.3% for men).
Conclusions: This study shows that recruiting a representative sample of young men and women based on county and postal code location to complete a survey on HPV vaccination uptake via the Internet is a cost-effective and feasible strategy. This study also highlights the need for local estimates to assess the variation in HPV vaccine uptake, as these estimates differ considerably from those obtained using survey data that are aggregated to the state or federal level.

**British Journal of Cancer**
(2 September 2014) | doi:10.1038/bjc.2014.479

**Reduction of low-and high-grade cervical abnormalities associated with high uptake of the HPV bivalent vaccine in Scotland**

K G J Pollock, K Kavanagh, A Potts, J Love, K Cuschieri, H Cubie, C Robertson, M Cruickshank, T J Palmer, S Nicoll and M Donaghy

*Abstract*
Background:
In Scotland, a national HPV immunisation programme began in 2008 for 12- to 13-year olds, with a catch-up campaign from 2008 to 2011 for those under the age of 18. To monitor the impact of HPV immunisation on cervical disease at the population level, a programme of national surveillance was established.
Methods:
We analysed colposcopy data from a cohort of women born between 1988 and 1992 who entered the Scottish Cervical Screening Programme (SCSP) and were aged 20–21 in 2008–2012.
Results:
By linking datasets from the SCSP and colposcopy services, we observed a significant reduction in diagnoses of cervical intraepithelial neoplasia 1 (CIN 1; RR 0.71, 95% CI 0.58 to 0.87;

P=0.0008), CIN 2 (RR 0.5, 95% CI 0.4 to 0.63; P<0.0001) and CIN 3 (RR 0.45, 95% CI 0.35 to 0.58; P<0.0001) for women who received three doses of vaccine compared with unvaccinated women.
Conclusions:
To our knowledge, this is one of the first studies to show a reduction of low- and high-grade CIN associated with high uptake of the HPV bivalent vaccine at the population level. These data are very encouraging for countries that have achieved high HPV vaccine uptake.

## ***Media/Policy Watch***

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

We acknowledge the Western/Northern bias in this initial selection of titles and invite suggestions for expanded coverage. We are conservative in our outlook in adding news sources which largely report on primary content we are already covering above. Many electronic media sources have tiered, fee-based subscription models for access. We will provide full-text where content is published without restriction, but most publications require registration and some subscription level.

**Al Jazeera**
http://www.aljazeera.com/Services/Search/?q=vaccine
*Accessed 6 September 2014*
[No new, unique, relevant content]

**The Atlantic**
http://www.theatlantic.com/magazine/
*Accessed 6 September 2014*
[No new, unique, relevant content]

**BBC**
http://www.bbc.co.uk/
*Accessed 6 September 2014 16:38*
Sierra Leone's Ebola lockdown will not help, says MSF
A three-day lockdown announced by Sierra Leone to combat Ebola will not help contain the virus, medical charity Medecins Sans Frontieres (MSF) says.

**Brookings**
http://www.brookings.edu/
*Accessed 6 September 2014*
[No new, unique, relevant content]

**Council on Foreign Relations**
http://www.cfr.org/
*Accessed 6 September 2014*

[No new, unique, relevant content]
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**Economist**
http://www.economist.com/
*Accessed 6 September 2014*
[No new, unique, relevant content]

**Financial Times**
http://www.ft.com
*Accessed 6 September 2014*
[No new, unique, relevant content]

**Forbes**
http://www.forbes.com/
*Accessed 6 September 2014*
Ebola, Experimental Drugs and Informed Consent: Should Those At Risk Simply Take What The Doctor Orders?
Elaine Schattner, Contributor
Is it possible to apply the principle of informed consent when giving experimental drugs during a rapid and devastating epidemic?

**Foreign Affairs**
http://www.foreignaffairs.com/
*Accessed 6 September 2014*
[No new, unique, relevant content]

**Foreign Policy**
http://www.foreignpolicy.com/
*Accessed 6 September 2014*
[No new, unique, relevant content]

**The Guardian**
http://www.guardiannews.com/
*Accessed 6 September 2014*
[No new, unique, relevant content]

**The Huffington Post**
http://www.huffingtonpost.com/
*Accessed 6 September 2014*
[No new, unique, relevant content]

**Le Monde**
http://www.lemonde.fr/
*Accessed 6 September 2014*
[No new, unique, relevant content]

**New Yorker**
http://www.newyorker.com/

[No new, unique, relevant content]

**New York Times**
http://www.nytimes.com/
*Accessed 6 September 2014*
Cuts at W.H.O. Hurt Response to Ebola Crisis
SHERI FINK
3 September 2014
With treatment centers overflowing, and alarmingly little being done to stop Ebola from sweeping through West African villages and towns, Dr. Joanne Liu, the president of Doctors Without Borders, knew that the epidemic had spun out of control.

The only person she could think of with the authority to intensify the global effort was Dr. Margaret Chan, the director general of the World Health Organization, which has a long history of fighting outbreaks. If the W.H.O., the main United Nations health agency, could not quickly muster an army of experts and health workers to combat an outbreak overtaking some of the world's poorest countries, then what entity in the world would do it?

"I wish I could do that," Dr. Chan said when the two met at the W.H.O.'s headquarters in Geneva this summer, months after the outbreak burgeoned in a Guinean rain forest and spilled into packed capital cities. The W.H.O. simply did not have the staffing or ability to flood the Ebola zone with help, said Dr. Chan, who recounted the conversation. It was a fantasy, she argued, to think of the W.H.O. as a first responder ready to lead the fight against deadly outbreaks around the world.

The Ebola epidemic has exposed gaping holes in the ability to tackle outbreaks in an increasingly interconnected world, where diseases can quickly spread from remote villages to cities housing millions of people.

The W.H.O., the United Nations agency assigned in its constitution to direct international health efforts, tackle epidemics and help in emergencies, has been badly weakened by budget cuts in recent years, hobbling its ability to respond in parts of the world that need it most. Its outbreak and emergency response units have been slashed, veterans who led previous fights against Ebola and other diseases have left, and scores of positions have been eliminated — precisely the kind of people and efforts that might have helped blunt the outbreak in West Africa before it ballooned into the worst Ebola epidemic ever recorded…

**Reuters**
http://www.reuters.com/
*Accessed 6 September 2014*
[No new, unique, relevant content]

**Wall Street Journal**
http://online.wsj.com/home-page?_wsjregion=na,us&_homepage=/home/us
*Accessed 6 September 2014*
Ebola's Economic Toll on Africa Starts to Emerge
September 5, 2014
The impact on trade, mining, agriculture and tourism in countries directly affected could mean a tough hit to growth just as these economies were gaining momentum.

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

*Accessed 6 September 2014*

What's missing in the Ebola fight in West Africa: Jim Yong Kim and Paul Farmer

By Jim Yong Kim and Paul Farmer August 31

*Jim Yong Kim is president of the World Bank. Paul Farmer is the Kolokotrones University professor at Harvard University. Farmer and Kim, who are infectious disease physicians, co-founded the nonprofit organization Partners in Health.*

If the Ebola epidemic devastating the countries of Guinea, Liberia and Sierra Leone had instead struck Washington, New York or Boston, there is no doubt that the health systems in place could contain and then eliminate the disease.

Hospitals would isolate suspected cases. Health workers would be outfitted with proper protective clothing and equipment. Doctors and nurses would administer effective supportive care, including comprehensive management of dehydration, impaired kidney and liver function, bleeding disorders and electrolyte disturbance. Labs would dispose of hazardous materials properly. And a public health command center would both direct the response and communicate clearly to the public about the outbreak.

Ebola is spread by direct physical contact with infected bodily fluids, making it less transmissible than an airborne disease such as tuberculosis. A functioning health system can stop Ebola transmission and, we believe, save the lives of a majority of those who are afflicted. So why isn't this happening in West Africa, where more than 1,500 people have already died?

As international groups pull staff from the three countries, airlines suspend commercial flights and neighboring countries close their borders, some have argued that it will be next to impossible to contain the outbreak — that public health systems are too weak, the cost of providing effective care too high and health workers too scarce.

But Ebola has been stopped in every other outbreak to date, and it can be stopped in West Africa, too. The crisis we are watching unfold derives less from the virus itself and more from deadly and misinformed biases that have led to a disastrously inadequate response to the outbreak.

These biases, tragically, live on, despite evidence that disproves them again and again. Just 15 years ago, Western experts said confidently that there was little that rich countries could do to stop the global AIDS crisis, which was killing millions of people in Africa and elsewhere.

Today, thanks to leadership and advocacy from President George W. Bush, a bipartisan coalition of members in Congress, courageous faith-based organizations and U.S. government researchers such as Tony Fauci and Mark Dybul, more than 10 million Africans are getting life-saving treatment.

The take-no-action argument has been used over the years as an excuse not to mount an effort to control drug-resistant tuberculosis, malaria and many other diseases that afflict primarily the poor.

But the reality is this: The Ebola crisis today is a reflection of long-standing and growing inequalities of access to basic health care. Guinea, Liberia and Sierra Leone do not have the staff, stuff and systems required to halt the outbreak on their own. According to its ministry of health, before the outbreak Liberia had just 50 doctors working in public health facilities serving a population of 4.3 million.

To halt this epidemic, we need an emergency response that is equal to the challenge. We need international organizations and wealthy countries that possess the required resources and knowledge to step forward and partner with West African governments to mount a serious, coordinated response as laid out in the World Health Organization's Ebola response roadmap.

Many are dying needlessly. Historically, in the absence of effective care, common acute infections have been characterized by high mortality rates. What's happening with Ebola in Africa has been no different.

A 1967 outbreak in Germany and Yugoslavia of Marburg hemorrhagic fever — a disease similar to Ebola — had a 23 percent fatality rate. Compare that with an 86 percent rate for cases across sub-Saharan Africa in the years since. The difference is that Germany and Yugoslavia had functioning health systems and the resources to treat patients effectively. The West African countries coping with Ebola today have neither.

With a strong public health response led by the United Nations, the World Health Organization, the United States, Britain, France and other wealthy nations, the virus could be contained and the fatality rate — which, based on the most conservative estimates, exceeds 50 percent in the present outbreak — would drop dramatically, perhaps to below 20 percent.

We are at a dangerous moment in these three West African countries, all fragile states that have had strong economic growth in recent years after decades of wars and poor governance. It would be scandalous to let this crisis escalate further when we have the knowledge, tools and resources to stop it. Tens of thousands of lives, the future of the region and hard-won economic and health gains for millions hang in the balance.

* * * *

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