Center for Vaccine Ethics and Policy
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# Vaccines: The Week in Review
# 20 July 2013
# Center for Vaccine Ethics & Policy (CVEP)

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

*Comments and suggestions should be directed to*
*David R. Curry, MS*
*Editor and*
*Executive Director*
*Center for Vaccine Ethics & Policy*
*david.r.curry@centerforvaccineethicsandpolicy.org*

**The Sabin Vaccine Institute Product Development Partnership (Sabin PDP) announced the launch of a soil-transmitted helminth (STH) vaccine discovery program.** The new Sabin PDP is supported by the Gary Karlin Michelson, M.D. Charitable Foundation, and will be based at the Baylor College of Medicine and Texas Children's Hospital. The program "will endeavor to advance lead candidate antigens for ascariasis (roundworm) and trichuriasis (whipworm) infections and incorporate them into existing hookworm and schistosomiasis vaccines currently being developed by the Sabin PDP to create a vaccine against all four major human helminth infections." Sabin noted that ascariasis, an infection of the small intestine, afflicts an estimated 800-900 million people and is a significant cause of acute intestinal obstruction in young children with high worm loads, leading to thousands of deaths annually. Trichuriasis, an infection of the large intestine, affects approximately 500 million people and is arguably the primary cause of inflammatory bowel disease in developing countries.
http://www.sabin.org/updates/pressreleases/sabin-vaccine-institute-begins-new-vaccine-discovery-initiative

**DFID: Multilateral Aid Review (MAR) update confirms GAVI as a highly effective organisation**
*Excerpt*
Geneva, 18 July 2013 – The UK Department for International Development (DFID) today confirmed that the GAVI Alliance remains a highly effective organisation that is making progress on areas for improvement highlighted by the UK. DFID's follows the 2011 MAR which found

GAVI to be "very good value for money for UK aid". The MAR update enables the UK Government to assess international organisations on progress made against the reforms proposed in the 2011 MAR. Progress made in all areas for reform "demonstrates GAVI's on-going commitment to improvement," DFID said. The MAR update also found that GAVI provides "highly cost-effective health interventions" and has "effective financial oversight" of its programmes.
http://www.gavialliance.org/library/news/statements/2013/uk-government-recognises-gavi-s-progress/

**The Global Fund to Fight AIDS, Tuberculosis and Malaria welcomed the commitment from France** "to sustain its role as Europe's leading Global Fund contributor with its commitment of EUR 1.08 billion (US$1.4 billion) for the 2014-2016 period."
http://www.theglobalfund.org/en/mediacenter/newsreleases/2013-07-16_Global_Fund_Welcomes_Contribution_by_France/

**WHO Statement: Second Meeting of the IHR Emergency Committee concerning MERS-CoV**
17 July 2013
[Full text, editor's bolding of selected text]

The second meeting of the Emergency Committee convened by the Director-General under the International Health Regulations (2005) [IHR (2005)] was held by teleconference on Wednesday, 17 July 2013, from 12:00 to 16:04 Geneva time (CET).

In addition to Members of the Emergency Committee, an expert advisor to the Committee1 participated in the meeting. During the informational session of the meeting, several affected States Parties were also on the teleconference. The States Parties on the teleconference were: France, Germany, Italy, Jordan, Kingdom of Saudi Arabia, Qatar, Tunisia, and the United Kingdom.

The Committee reviewed and deliberated on information on a range of aspects of MERS-CoV, which was prepared or coordinated by the Secretariat and States in response to questions presented by Members during the first meeting.

**It is the unanimous decision of the Committee that, with the information now available, and using a risk-assessment approach, the conditions for a Public Health Emergency of International Concern (PHEIC) have not at present been met.**

While not considering the events currently to constitute a PHEIC, Members of the Committee did offer technical advice for consideration by WHO and Member States on a broad range of issues, including the following:

- Improvements in surveillance, lab capacity, contact tracing and serological investigation
- Infection prevention and control and clinical management
- Travel-related guidance
- Risk communications
- Research studies (epidemiological, clinical and animal)
- Improved data collection and the need to ensure full and timely reporting of all confirmed and probable cases of MERS-CoV to WHO in accordance with the IHR (2005).

The WHO Secretariat will provide regular updates to the Members and will reconvene the Committee, in September, on a date to be determined. However, serious new developments may require an urgent re-convening of the Committee before then.

Based on these views and the currently available information, the Director-General accepted the Committee's assessment that the current MERS-CoV situation is serious and of great concern, but does not constitute a PHEIC at this time.

The Director-General expressed her gratitude to the Committee on its wide range of advice on health actions for countries to implement, and advice on follow-up work by WHO.

Emergency Committee Members
http://www.who.int/mediacentre/news/statements/2013/mers_cov_20130717/en/index.html

**WHO: Global Alert and Response (GAR) – *Disease Outbreak News***
http://www.who.int/csr/don/2013_03_12/en/index.html
**Middle East respiratory syndrome coronavirus (MERS-CoV) – update** 18 July 2013
*Excerpt*

WHO has been informed of six additional laboratory-confirmed cases of infection with Middle East respiratory syndrome coronavirus (MERS-CoV). Of these, two cases have been reported from Saudi Arabia and four from the United Arab Emirates (UAE).

Both the cases in Saudi Arabia have mild symptoms and are not hospitalized. They are from Asir region. The first case is a 26-year-old man who is a close contact with a previously laboratory-confirmed case and the second case is a 42-year-old woman who is a health care worker.

In the UAE, the four cases are health care workers from two hospitals in Abu Dhabi who took care of an earlier laboratory-confirmed patient. Of these, two cases, a 28-year-old man and 30-year-old woman, did not develop symptoms of illness. The other two cases, both women of 30 and 40 years old, had mild upper respiratory symptoms and are in stable condition.

Globally, from September 2012 to date, WHO has been informed of a total of 88 laboratory-confirmed cases of infection with MERS-CoV, including 45 deaths…

**Poliovirus detected from environmental samples in Israel – update** 15 July 2013

Wild poliovirus type 1 (WPV1) has been isolated in 30 sewage samples from 10 sampling sites in Israel. The samples were collected from 3 February 2013 to 30 June 2013. Most positive WPV1 samples were detected from southern Israel. All viruses have been detected in sewage only; no cases of paralytic polio have been reported.

Detection of viruses across the country indicates increased geographic extent of circulation for a prolonged period of time. WHO assesses the risk of further international spread of WPV from Israel as moderate to high.

Health authorities in Israel are continuing to conduct a full epidemiological and public health investigation to actively search for potential cases of paralytic polio and any un-immunized persons. Routine immunization coverage is estimated at 94 percent or above over last eight years. The frequency of environmental surveillance sampling has been increased….

**Update: Polio this week - *As of 17 July 2013***
Global Polio Eradication Initiative
http://www.polioeradication.org/Dataandmonitoring/Poliothisweek.aspx
*[Editor's extract and bolded text]*
17 July 2013

:: **The outbreak in the Horn of Africa is expanding, with 21 newly-reported cases (one from Kenya, 20 from Somalia).** In Somalia, two immunization campaigns have been conducted since the most recent case occurred. Outbreak response activities are continuing, and planning and approaches continue to be strengthened. See 'Horn of Africa' section for more.

:: **Update on WPV in environmental samples in Israel: WPV1 has now been isolated in 30 sewage samples from 10 sampling sites in Israel**. The samples were collected between February and June 2013. All viruses have been detected in sewage only – no cases of paralytic polio have been reported. Health authorities in Israel are continuing to conduct a full epidemiological and public health investigation. The Government of Israel is planning supplementary immunization activities (SIAs) with OPV, to boost mucosal immunity levels to rapidly interrupt virus circulation. More.

***Pakistan***

:: Three new WPV cases were reported in the past week (WPV1s from Khyber Agency and North Waziristan, Federally Administered Tribal Areas – FATA, and in Peshawar, Khyber Pakhtunkhwa – KP), bringing the total number of WPV cases for 2013 to 21. The case from Peshawar is the most recent WPV in the country, and had onset of paralysis on 30 June…

:: …FATA is the major WPV1 reservoir in Pakistan at the moment. Bara in Khyber Agency is particularly affected. This outbreak is threatening progress achieved elsewhere in the country and in neighbouring Afghanistan.

:: In 2011 and 2012, Bara was the epicentre of a major outbreak which also spread to other areas.

:: The new case in North Waziristan is particularly concerning, as it is in an area where immunizations have been suspended by local leaders since last June. Immunizations in neighbouring high-risk areas are being intensified, to further boost population immunity levels in those areas and prevent further spread of this outbreak. North Waziristan is also affected by cVDPV2 cases.

:: Confirmation of these latest cases underscores the risk ongoing polio transmission (be it due to WPV or cVDPV) in the country continues to pose to children everywhere, and in particular to children living in areas where access has not been possible for extended periods of time.

***Central Africa: Chad and Cameroon***

:: In Chad, no new WPV cases were reported in the past week. The most recent WPV case had onset of paralysis on 14 June 2012 (WPV1 from Lac). No new cVDPV2 cases were reported in the past week. The total number of cVDPV2 cases for 2013 remains four (the most recent cVDPV2 case had onset of paralysis on 12 May from Ennedi).

:: In Cameroon, one new cVDPV2 case was reported in the past week, bringing the total number of cVDPV2 cases for 2013 to two. This latest case had onset of paralysis on 27 May, from Extreme-Nord. The first case had onset of paralysis on 9 May, also from Extreme-Nord.

:: Emergency outbreak response plans are currently being finalized in both countries. In Chad, nationwide campaigns were held on 23-26 June with trivalent OPV, with further campaigns planned in late July and in August. Cameroon will conduct its first round in the north of the country on 26-29 July with trivalent OPV, with further activities in August and September.

***Horn of Africa***

:: 21 new WPV1 cases were reported in the past week (one from Dadaab, Kenya, and 20 from Somalia), bringing the total number of WPV1 cases in the region to 73 (65 WPV1s from Somalia and eight WPV1s from Kenya). The most recent case in the region had onset of paralysis on 14 June (the newly-reported case from Kenya).

:: In Somalia, two immunization campaigns have been conducted since the most recent case occurred.
:: Some of the new cases are from inaccessible areas of south-central Somalia. More than 600,000 children are particularly vulnerable to polio in this area. Vaccination posts are being set up in areas bordering inaccessible areas to immunize all populations entering/leaving such areas (including targeting older age groups). Assessments of high-risk areas and populations continue to be conducted, including mapping chronic conflict-areas and major population movement routes. Local-level access negotiations have intensified, to increase access to populations in inaccessible areas.
:: Outbreak response across the Horn of Africa continues to be implemented. In Somalia, campaigns were held on 1-6 July. Planning is under way for NIDs during Ramadan on 21-24 July. Specific radio messages are being developed with the involvement of the Ministry of Religious Affairs.

The **Weekly Epidemiological Record (WER) for 19 July 2013**, vol. 88, 29 (pp. 301–312) includes:
:: Global Advisory Committee on Vaccine Safety, 12–13 June 2013
http://www.who.int/entity/wer/2013/wer8829.pdf

**CDC/MMWR Watch - July 19, 2013 / Vol. 62 / No. 27**
http://www.cdc.gov/mmwr/mmwr_wk.html
*No new relevant content.*

**WHO - Humanitarian Health Action**
http://www.who.int/hac/en/index.html
*No new content.*

**UN Watch** *to 6 July 2013*
Selected meetings, press releases, and press conferences relevant to immunization, vaccines, infectious diseases, global health, etc. http://www.un.org/en/unpress/
*No new content.*

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

**WHO Report: Priority medicines for Europe and the World 2013 - update**
Joint news release WHO/Geneva & WHO/EURO

*Excerpt*

16 July 2013 | GENEVA/COPENHAGEN - For the first time, EU countries have more people over 65 years of age than under 15 years of age. Echoing the trend seen in Europe, much of the rest of the world, including low-and middle-income countries, is moving in a similar direction. A new WHO report calls for pharmaceutical researchers to adjust their research and development efforts to account for this shifting demographic…

…The report, emphasizes that this shift in EU countries is 'bell weather' for the rest of the world as globally more people will be ageing and face similar health challenges in the future. The report focuses on pharmaceutical 'gaps', where treatments for a disease or condition may soon become ineffective, are not appropriate for the target patient group, does not exist, or are not sufficiently effective.

"Despite an over three-fold rise in spending on pharmaceutical research and development in Europe since 1990, there is an increasing mismatch between people's real needs and pharmaceutical innovation. We must ensure that industry develops safe, effective, affordable and appropriate medicines to meet future health needs," says Nina Sautenkova, Health Technologies and Pharmaceuticals, WHO/Europe.

From a public health view, the trend of an increasing population over 65 leads to greater prevalence of diseases and conditions associated with ageing, such as heart disease, stroke, cancer, diabetes, osteoarthritis, low-back pain, hearing loss, and Alzheimer disease. In combination with health promotion and disease prevention initiatives, these conditions also require more investment in research and innovation to bridge the pharmaceutical gaps.

:: Master document - 2013 Update Report
pdf, 5.09Mb
:: Presentation, Brussels, July 9th 2013
http://www.who.int/medicines/areas/priority_medicines/en/index.html

***Journal Watch***

*Vaccines: The Week in Review* continues its weekly scanning of key peer-reviewed journals to identify and cite articles, commentary and editorials, books reviews and other content supporting our focus on vaccine ethics and policy. ***Journal Watch* is not intended to be exhaustive, but indicative of themes and issues the Center is actively tracking.** We selectively provide full text of some editorial and comment articles that are specifically relevant to our work. Successful access to some of the links provided may require subscription or other access arrangement unique to the publisher.

*If you would like to suggest other journal titles to include in this service, please contact David Curry at: david.r.curry@centerforvaccineethicsandpolicy.org*

**American Journal of Infection Control**
Vol 41 | No. 7 | July 2013 | Pages 575-666
http://www.ajicjournal.org/current
[Reviewed earlier]

**American Journal of Public Health**
Volume 103, Issue 8 (August 2013)

http://ajph.aphapublications.org/toc/ajph/current
[Reviewed earlier]

**Annals of Internal Medicine**
16 July 2013, Vol. 159. No. 2
http://annals.org/issue.aspx
[No relevant content]

**BMC Public Health**
(Accessed 20 July 2013)
http://www.biomedcentral.com/bmcpublichealth/content
***Research article***
**Can informal social distancing interventions minimize demand for antiviral treatment during a severe pandemic?**
Amy L Greer
BMC Public Health 2013, 13:669 doi:10.1186/1471-2458-13-669
Published: 18 July 2013
http://www.biomedcentral.com/1471-2458/13/669/abstract
*Abstract* (provisional)
Background
In the case of a pandemic, individuals may alter their behaviour. A dynamic model incorporating social distancing can provide a mechanism to consider complex scenarios to support decisions regarding antiviral stockpile size while considering uncertainty around behavioural interventions. We have examined the impact of social distancing measures on the demand for limited healthcare resources such as antiviral drugs from a central stockpile during a severe pandemic.
Methods
We used an existing age-structured model for pandemic influenza in Canada and biologically plausible scenarios for severe influenza transmission within the population. We incorporated data from published reports regarding stated intentions to change behaviour during a pandemic as well as the magnitude and duration of time that individuals expected to maintain the behavioural change. We ran simulations for all combinations of parameter values to identify the projected antiviral requirements in each scenario.
Results
With 12 weeks of distancing, the effect is relatively small for the lowest R0 of 1.6 with a projected stockpile to treat 25.6% being required (IQR = 21.7 -- 28.7%) unless the proportion of people involved (81%) and magnitude of the behaviour change is large (69% reduction in contacts). If 24 weeks of distancing occurs, with only a low to moderate reduction in contacts (38% or less), it is not possible to bring treatment requirements below 20% regardless of what proportion of the population engages in distancing measures when transmissibility is high (R0 = 2.0; stockpile size = 31%, IQR = 29.2 -- 33.5%).
Conclusions
Our results demonstrate that the magnitude and duration of social distancing behaviours during a severe pandemic have an impact on the need for antiviral drugs. However, significant investments over a long period of time (>16 weeks) are required to decrease the need for antiviral treatment to below 10% of the total population for a highly transmissible viral strain (R0 > 1.8). Encouraging individuals to adopt behaviours that decrease their daily contact rate

can help to control the spread of the virus until a vaccine becomes available however; relying on these measures to justify stockpiling fewer courses of treatment will not be sufficient in the case of a severe pandemic.
*The complete article is available as a provisional PDF. The fully formatted PDF and HTML versions are in production.*

**British Medical Bulletin**
Volume 106 Issue 1 June 2013
http://bmb.oxfordjournals.org/content/current
[Reviewed earlier; No relevant content]

**British Medical Journal**
20 July 2013 (Vol 347, Issue 7917)
http://www.bmj.com/content/347/7917
[No relevant content]

**Bulletin of the World Health Organization**
Volume 91, Number 7, July 2013, 465-544
http://www.who.int/bulletin/volumes/91/7/en/index.html
[Reviewed earlier]

**Clinical Therapeutics**
Vol 35 | No. 6 | June 2013 | Pages 745-900
http://www.clinicaltherapeutics.com/current
[Reviewed earlier; No relevant content]

**Cost Effectiveness and Resource Allocation**
(Accessed 20 July 2013)
http://www.resource-allocation.com/
[No new relevant content]

**Current Opinion in Infectious Diseases.**
August 2013 - Volume 26 - Issue 4 pp: v-vi,295-398
http://journals.lww.com/co-infectiousdiseases/pages/currenttoc.aspx
[Reviewed earlier]

**Development in Practice**
Volume 23, Issue 4, 2013
http://www.tandfonline.com/toc/cdip20/current
[Reviewed earlier; No relevant content]

**Emerging Infectious Diseases**
Volume 19, Number 7—July 2013
http://www.cdc.gov/ncidod/EID/index.htm
[Reviewed earlier; No relevant content]

**The European Journal of Public Health**
Volume 23 Issue 3 June 2013
http://eurpub.oxfordjournals.org/content/current
[Reviewed earlier; No relevant content]

**Eurosurveillance**
Volume 18, Issue 29, 18 July 2013
http://www.eurosurveillance.org/Public/Articles/Archives.aspx?PublicationId=11678
[No relevant content]

**Forum for Development Studies**
Volume 40, Issue 2, 2013
http://www.tandfonline.com/toc/sfds20/current
[Reviewed earlier; No relevant content]

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

**Globalization and Health**
[Accessed 20 July 2013]
http://www.globalizationandhealth.com/
[No new relevant content]

**Health Affairs**
July 2013; Volume 32, Issue 7
http://content.healthaffairs.org/content/current
*Theme: States, Medicaid & Countdown To Reform*
[Reviewed earlier]

**Health and Human Rights**
Volume 15, Issue 1
http://www.hhrjournal.org/

**Theme: Realizing the Right to Health Through a Framework Convention on Global Health**
[Reviewed earlier]

**Health Economics, Policy and Law**
Volume 8 - Issue 03 - July 2013
http://journals.cambridge.org/action/displayIssue?jid=HEP&tab=currentissue
[Reviewed earlier; No relevant content]

**Health Policy and Planning**
Volume 28 Issue 4 July 2013
http://heapol.oxfordjournals.org/content/current
[No relevant content]

**Human Vaccines & Immunotherapeutics** (formerly Human Vaccines)
Volume 9, Issue 7 July 2013
http://www.landesbioscience.com/journals/vaccines/toc/volume/9/issue/7/
**Special Focus: VR6 Conference**
[Reviewed earlier]

**Infectious Agents and Cancer**
http://www.infectagentscancer.com/content
[No new relevant content]

**Infectious Diseases of Poverty**
http://www.idpjournal.com/content
[Accessed 20 July 2013]
[No new relevant content]

**International Journal of Epidemiology**
Volume 42 Issue 2 April 2013
http://ije.oxfordjournals.org/content/current
[Reviewed earlier]

**International Journal of Infectious Diseases**
Vol 17 | No. 8 | August 2013
http://www.ijidonline.com/current
[Reviewed earlier; No relevant content]

**JAMA**

July 17, 2013, Vol 310, No. 3
http://jama.ama-assn.org/current.dtl
**The 2012 West Nile Encephalitis Epidemic in Dallas, Texas** FREE
Wendy M. Chung, MD, SM; Christen M. Buseman, PhD, MPH; Sibeso N. Joyner, MPH; Sonya M. Hughes, MPH; Thomas B. Fomby, PhD; James P. Luby, MD; Robert W. Haley, MD
Includes: Supplemental Content
Review
**West Nile Virus: Review of the Literature**
Lyle R. Petersen, MD, MPH; Aaron C. Brault, PhD; Roger S. Nasci, PhD

**JAMA Pediatrics**
July 2013, Vol 167, No. 7
http://archpedi.jamanetwork.com/issue.aspx
[Reviewed earlier; No relevant content]

**Journal of Community Health**
Volume 38, Issue 4, August 2013
http://link.springer.com/journal/10900/38/4/page/1
[No relevant content]

**Journal of Health Organization and Management**
Volume 27 issue 5 - Latest Issue
http://www.emeraldinsight.com/journals.htm?issn=1477-7266&show=latest
[No relevant content]

**Journal of Infectious Diseases**
Volume 208 Issue 3 August 1, 2013
http://jid.oxfordjournals.org/content/current
[Reviewed earlier]

**Journal of Global Infectious Diseases (JGID)**
April-June 2013 Volume 5 | Issue 2 Page Nos. 43-90
http://www.jgid.org/currentissue.asp?sabs=n
[Reviewed earlier; No relevant content]

**Journal of Medical Ethics**
August 2013, Volume 39, Issue
http://jme.bmj.com/content/current
[No relevant content]

**Journal of Medical Microbiology**

August 2013; 62 (Pt 8)
http://jmm.sgmjournals.org/content/current
[No relevant content]

**Journal of the Pediatric Infectious Diseases Society (JPIDS)**
Volume 2 Issue 2 June 2013
http://jpids.oxfordjournals.org/content/current
[Reviewed earlier]

**Journal of Pediatrics**
Vol 163 | No. 1 | July 2013 | Pages 1-308
http://www.jpeds.com/current
[Reviewed earlier; No relevant content]

**Journal of Virology**
August 2013, volume 87, issue 15
http://jvi.asm.org/content/current
[Reviewed earlier]

**The Lancet**
Jul 20, 2013 Volume 382 Number 9888 p181 – 284 e1
http://www.thelancet.com/journals/lancet/issue/current
**Burden and aetiology of diarrhoeal disease in infants and young children in developing countries (the Global Enteric Multicenter Study, GEMS): a prospective, case-control study**
Karen L Kotloff, James P Nataro, William C Blackwelder, Dilruba Nasrin, Tamer H Farag, Sandra Panchalingam, Yukun Wu, Samba O Sow, Dipika Sur, Robert F Breiman, Abu SG Faruque, Anita KM Zaidi, Debasish Saha, Pedro L Alonso, Boubou Tamboura, Doh Sanogo, Uma Onwuchekwa, Byomkesh Manna, Thandavarayan Ramamurthy, Suman Kanungo, John B Ochieng, Richard Omore, Joseph O Oundo, Anowar Hossain, Sumon K Das, Shahnawaz Ahmed, Shahida Qureshi, Farheen Quadri, Richard A Adegbola, Martin Antonio, M Jahangir Hossain, Adebayo Akinsola, Inacio Mandomando, Tacilta Nhampossa, Sozinho Acácio, Kousick Biswas, Ciara E O'Reilly, Eric D Mintz, Lynette Y Berkeley, Khitam Muhsen, Halvor Sommerfelt, Roy M Robins-Browne, Myron M Levine
http://www.thelancet.com/journals/lancet/article/PIIS0140-6736%2813%2960844-2/abstract
*Summary*
Background
Diarrhoeal diseases cause illness and death among children younger than 5 years in low-income countries. We designed the Global Enteric Multicenter Study (GEMS) to identify the aetiology and population-based burden of paediatric diarrhoeal disease in sub-Saharan Africa and south Asia.
Methods
The GEMS is a 3-year, prospective, age-stratified, matched case-control study of moderate-to-severe diarrhoea in children aged 0—59 months residing in censused populations at four sites in

Africa and three in Asia. We recruited children with moderate-to-severe diarrhoea seeking care at health centres along with one to three randomly selected matched community control children without diarrhoea. From patients with moderate-to-severe diarrhoea and controls, we obtained clinical and epidemiological data, anthropometric measurements, and a faecal sample to identify enteropathogens at enrolment; one follow-up home visit was made about 60 days later to ascertain vital status, clinical outcome, and interval growth.
Findings
We enrolled 9439 children with moderate-to-severe diarrhoea and 13 129 control children without diarrhoea. By analysing adjusted population attributable fractions, most attributable cases of moderate-to-severe diarrhoea were due to four pathogens: rotavirus, Cryptosporidium, enterotoxigenic Escherichia coli producing heat-stable toxin (ST-ETEC; with or without co-expression of heat-labile enterotoxin), and Shigella. Other pathogens were important in selected sites (eg, Aeromonas, Vibrio cholerae O1, Campylobacter jejuni). Odds of dying during follow-up were 8·5-fold higher in patients with moderate-to-severe diarrhoea than in controls (odd ratio 8·5, 95% CI 5·8—12·5, p<0·0001); most deaths (167 [87·9%]) occurred during the first 2 years of life. Pathogens associated with increased risk of case death were ST-ETEC (hazard ratio [HR] 1·9; 0·99—3·5) and typical enteropathogenic E coli (HR 2·6; 1·6—4·1) in infants aged 0—11 months, and Cryptosporidium (HR 2·3; 1·3—4·3) in toddlers aged 12—23 months.
Interpretation
Interventions targeting five pathogens (rotavirus, Shigella, ST-ETEC, Cryptosporidium, typical enteropathogenic E coli) can substantially reduce the burden of moderate-to-severe diarrhoea. New methods and accelerated implementation of existing interventions (rotavirus vaccine and zinc) are needed to prevent disease and improve outcomes.
Funding
The Bill & Melinda Gates Foundation.

**The Lancet Global Health**
July 2013 Volume 1 Number 1 e1 – 54
http://www.thelancet.com/journals/langlo/issue/current
[Reviewed earlier]

**The Lancet Infectious Diseases**
Jul 2013 Volume 13 Number 7 p559 - 638
http://www.thelancet.com/journals/laninf/issue/current
[Reviewed earlier]

**Medical Decision Making (MDM)**
August 2013; 33 (6)
http://mdm.sagepub.com/content/current
[No relevant content]

**The Milbank Quarterly**
*A Multidisciplinary Journal of Population Health and Health Policy*
June 2013 Volume 91, Issue 2 Pages 219–418

http://onlinelibrary.wiley.com/doi/10.1111/milq.2013.91.issue-2/issuetoc
[Reviewed earlier; No relevant content]

**Nature**
Volume 499 Number 7458 pp253-374 18 July 2013
http://www.nature.com/nature/current_issue.html
***Editorial***
***Active protection***
**Parents should vaccinate their children against human papillomavirus.**
17 July 2013

Scientists at the US Centers for Disease Control and Prevention (CDC) in Atlanta, Georgia, announced good news last month. The prevalence of key strains of disease-causing human papillomavirus (HPV) fell by 56% in US girls aged 14–19 years in the years after 2006, when a vaccine was added to the routine US immunization schedule for girls (L. E. Markowitz et al. J. Infect. Dis. 208, 385–393; 2013).

This is a clear-cut vaccine success story. The decline represents a drop from more than 1 in 10 girls in this age range carrying the relevant strains of the virus to just 1 in 20. This is a significant result. About 14 million people in the United States, most in their late teens and early 20s, become infected with HPV each year. The two most dangerous strains — those targeted by vaccines made by both Merck and GlaxoSmithKline — cause cervical cancer, other anogenital cancers and throat cancer. Merck's vaccine also protects against two further strains that cause genital warts.

The vaccine is given in three doses over six months. The CDC first recommended that all girls aged 11 and 12 be vaccinated. In 2011, it said the same for boys, for whom only the Merck vaccine is licensed. The idea is to immunize children before they become sexually active. Given that HPV is the most common sexually transmitted disease, waiting longer only increases the odds that the protection will be provided too late. The vaccine has been shown to be both safe and highly effective, and continuing experience — as of March, about 56 million doses had been distributed in the United States — reinforces that.

Yet proportional uptake in the United States has been poor. In 2010, a national survey found that only 49% of girls aged 13 to 17 had received at least one dose of vaccine, and only 32% had received all three doses. By comparison, Rwanda has achieved more than 80% vaccination coverage and several Canadian provinces have reached 85%.

"HPV is an equal-opportunity infectious agent."

It is possible that unvaccinated girls in the United States are already benefiting from the compliance of the parents who have stepped up to have their children immunized. When the CDC scientists explored whether the decrease in HPV prevalence among 14–19-year-old girls might be due to herd immunity, they found that vaccinated sexually active girls showed a striking 88% decrease in prevalence of the relevant HPV strains, compared with the pre-vaccine era. But they also found a 28% decrease in prevalence among unvaccinated girls. The finding was not statistically significant, and was difficult to interpret owing to differences in the reported sexual behaviour of the two groups — for instance, the unvaccinated girls reported fewer sexual partners. Nevertheless, herd immunity is a possible explanation, and other studies have indicated that it is at play.

It is worth noting that cervical cancer, almost all of which is caused by HPV, disproportionately affects black and Hispanic women in the United States, possibly because they

have reduced access to screening. And among women who do contract cervical cancer, black women have proportionally the highest death rate.

But neither white people nor parents of boys of any race or ethnicity should be complacent when considering whether to vaccinate. The vaccine is not only about preventing cervical cancer, nor even only about preventing anal cancer in males who have sex with males. Consider that the proportion of US throat cancers associated with HPV has exploded in recent decades among white men and women. (Similar increases have occurred in Canada and some European countries.) As the actor Michael Douglas was frank enough to acknowledge in an interview published last month, throat cancer of the type that he was treated for in 2010 is caused by HPV contracted through oral sex. (Douglas's representatives later denied that he had intended the statement to refer to his own particular case.)

The take-home message is that HPV is an equal-opportunity infectious agent. As the CDC noted when it announced the findings last month, cervical cancer is simply the most common among about 19,000 cases of cancer caused by HPV in US women each year, and throat cancer is the most frequent among 8,000 cases of such cancers in men. The costs are sobering: the CDC calculates, for instance, that 50,000 girls alive today who will get cervical cancer during their lifetimes would not have done so had the country quickly reached 80% vaccination rates.

Squeamishness among parents being asked to vaccinate 11-year-olds against a sexually transmitted disease is understandable. But in the face of such a clearly effective means of protecting our young people, ducking the issue, hoping for the best or relying on the responsible actions of others is not.
http://www.nature.com/news/active-protection-1.13387

**Nature Immunology**
August 2013, Volume 14 No 8 pp765-877
http://www.nature.com/ni/journal/v14/n8/index.html
[No relevant content]

**Nature Medicine**
July 2013, Volume 19 No 7 pp791-945
http://www.nature.com/nm/journal/v19/n7/index.html
[Reviewed earlier]

**Nature Reviews Immunology**
July 2013 Vol 13 No 7
http://www.nature.com/nri/journal/v13/n7/index.html
[Reviewed earlier; No relevant content]

**New England Journal of Medicine**
July 18, 2013 Vol. 369 No. 3
http://www.nejm.org/toc/nejm/medical-journal
***Perspective***
**Communicating and Promoting Comparative-Effectiveness Research Findings**
Peter J. Neumann, Sc.D.

N Engl J Med 2013; 369:209-211July 18, 2013DOI: 10.1056/NEJMp1300312
http://www.nejm.org/doi/full/10.1056/NEJMp1300312
*[Full text]*

The comparative-effectiveness research (CER) movement has sparked an important debate about who may communicate research findings, for what purposes, and using what methodologic standards.1-3 CER is intended to inform discussions about what works in health care. Much of the information comes from research using retrospective databases and quasi-experimental designs rather than randomized clinical trials. The Food and Drug Administration (FDA) prohibits drug companies from using such information to promote pharmaceuticals, requiring that promotions be supported by "substantial evidence" of purported effects (which generally means evidence from two well-controlled trials, though one randomized, controlled trial is permitted in certain circumstances).1,2

Pharmaceutical companies have complained about "asymmetry" between the strict rules for their industry and the absence of restrictions for other organizations — including public and private payers and agencies such as the new Patient-Centered Outcomes Research Institute (PCORI) — which are increasingly conducting CER and communicating its results.3 The counterargument is that permitting drug companies to freely promote CER findings, including those that don't meet the substantial-evidence standard, opens the door for industry to mislead physicians and patients, potentially harming public health and safety.2 It would also remove incentives for companies to conduct confirmatory trials, effectively allowing them to circumvent the FDA requirements for drug approval.2 Moreover, there are existing channels for manufacturers to communicate CER findings, even if the data do not meet the substantial-evidence standard. For example, manufacturers can write letters to the editor in defense of public challenges, distribute peer-reviewed articles discussing unapproved uses (with certain restrictions), and respond to unsolicited requests for information.2 Industry representatives, however, respond that the rules for communication outside of the substantial-evidence standard are vague and that the lack of formal FDA guidance has restricted their actions.3

In part, the issue can be addressed with better standards for the conduct and translation of CER. FDA officials recently noted that such standards are a necessary prerequisite to ensuring that comparative-effectiveness information from observational studies will provide credible evidence.1 Several groups are developing standards for using observational data in CER and, more generally, for including nonrandomized studies in systematic reviews. Eventually, the FDA might be able to determine when such studies meet substantial-evidence requirements.2 But standards alone are unlikely to suffice. Though the field is improving, judging whether a study based on observational data is of high quality will always be challenging, given unmeasured confounders and investigator choices in design and analysis that can affect results.2 The advent of CER organizations such as the PCORI, which has a specific mandate to disseminate CER findings, calls for a more immediate response.

A possible step forward would be for Congress to broaden the scope of a legislative provision — Section 114 of the Food and Drug Administration Modernization Act of 1997 — that enables drug companies to promote information related to health care economics that conforms to a broader "competent and reliable scientific evidence" standard rather than the substantial-evidence criterion, as long as the targets of that promotion are restricted to formulary committees or similar entities and the information is directly related to approved indications (see tableEvidentiary Standards and Intended Audiences under Current Law and Proposed Expansion.).3,4 Extending Section 114 to include CER findings would permit pharmaceutical companies to promote the information using the competent-and-reliable standard, though only to organizations such as health plans. The FDA could use the Federal Trade Commission's

definition of competent and reliable scientific evidence, which encompasses evidence based on the expertise of relevant professionals using generally accepted procedures, rather than requiring two well-controlled trials.[3]

Expanding Section 114 in this way would reflect a grand bargain of sorts, providing a more flexible evidentiary framework for business-to-business communication of CER findings while retaining key protections. It would open the door to promotion of results from a wider range of CER studies, including those using observational data to draw inferences about patients, settings, and end points (e.g., adherence, hospitalizations) that are of interest to payers and are difficult or impossible for drug companies to include in registration trials.

Of course, the plan is not without risks. There remain concerns that allowing drug companies to promote information about end points that have not been adequately studied could still deceive intended audiences and remove incentives for companies to conduct randomized trials. Historical examples of misleading industry marketing and selective reporting of clinical data are warnings to proceed with caution.[2] The proposal presumes that health plans have the expertise and wherewithal to judge CER information, and the situation should be monitored. In addition, Section 114 has proved to be challenging to regulate and interpret. To date, the FDA has never released any guidance or taken any regulatory action on the matter.[5]

However, the plan would preserve key guardrails for public health. Promotion would be restricted to organizations that retain strong incentives to be informed and wary consumers of drug-company promotions and that increasingly employ their own experts, mine their own data, and request CER evidence from companies, sometimes in the form of dossiers using the Academy of Managed Care Pharmacy Format for Formulary Submissions.[4] The substantial-evidence standard would remain in place for industry promotion targeting physicians or consumers. Product manufacturers would retain powerful incentives to conduct trials on appropriate indications, populations, and comparators, because such research would provide them with labeled claims for general promotion. Furthermore, the new legislation requiring the FDA to regulate CER promotions according to the competent-and-reliable standard could include a directive to the agency to issue guidance about when such promotions amounted to non-misleading information, which would help advance the creation of standards for CER.

Other mechanisms for exchanging trusted information, such as peer-reviewed publications, would continue to exist, and the creation of additional ones should be encouraged, including government-supported academic detailing of CER findings and the development of ClinicalTrials.gov-type models for observational research (ideally, with FDA- and journal-imposed requirements that designs for observational studies be posted publicly before initiation of a study).[2] The new law could also require disclaimer or disclosure statements when information does not constitute substantial evidence.[3]

The entire debate over the promotion of CER findings has also been thrown for a loop by a series of recent court decisions, including the December 2012 ruling in United States v. Caronia, in which the Second Circuit court overturned a conviction of a drug company sales representative for off-label promotion on the grounds that FDA prohibitions of such promotion infringed the individual's First Amendment right to free speech. Caronia continues a judiciary trend toward broadening the definition of protected speech and holds that the government cannot restrict truthful, non-misleading off-label promotion. Conceivably, the FDA will have to establish on a case-by-case basis whether any CER promotion, regardless of its intended audience, is "truthful." However, a great deal of uncertainty prevails, and it may be some time before there is clarity around the issue. In the meantime, expanding Section 114 to include CER could help Congress, the FDA, and perhaps even the Courts to consider and define more clearly the circumstances and audiences for which CER promotion can be truthful and non-misleading.

**OMICS: A Journal of Integrative Biology**
July 2013, 17(7)
http://online.liebertpub.com/toc/omi/17/7
[Reviewed earlier; No relevant content]

**Revista Panamericana de Salud Pública/Pan American Journal of Public Health (RPSP/PAJPH)**
May 2013 Vol. 33, No. 5
http://www.paho.org/journal/index.php?option=com_content&task=view&id=125&Itemid=224
[Reviewed earlier; No relevant content]

**The Pediatric Infectious Disease Journal**
August 2013 - Volume 32 - Issue 8 pp: A15-A16,e314-e347,805-929
http://journals.lww.com/pidj/pages/currenttoc.aspx

**Varicella Disease in Beijing in the Era of Voluntary Vaccination, 2007 to 2010**
Lu, Li; Wang, Chengbin; Suo, Luodan; Li, Juan; Liu, Weixiang; Pang, Xinghuo; Seward, Jane F.
Pediatric Infectious Disease Journal. 32(8):e314-e318, August 2013.
doi: 10.1097/INF.0b013e31828d948b
*Abstract:*
Background: In China, varicella vaccine has been available in the private sector to children ≥12 months of age since 1998 with a single-dose indication. In December 2006, varicella became a notifiable disease in Beijing. We used surveillance data to describe varicella vaccine uptake from 2005 to 2010 and varicella epidemiology in Beijing from 2007 to 2010.
Methods: Limited sociodemographic and clinical information was available from the passive surveillance system. Varicella vaccine coverage was estimated for each year for children born between 2004 and 2008 using the number of children in the immunization registry of each birth year as the denominator without adjustment for history of varicella.
Results: Vaccine coverage increased within each birth cohort between 2005 and 2010. The coverage at 2 years of age increased from 62.4% in 2005 to 74.1% in 2010 and was 80.4% in children 3–6 years of age in 2010. Between 2007 and 2010, 15,544 to 18,256 varicella cases were reported annually with stable overall incidence (range: 1.0–1.1/1000 persons), but the incidence in children 1–4 years of age decreased significantly from 6.2 per 1000 children in 2007 to 4.4 per 1000 children in 2010 ($P < 0.001$). Among adults (≥20 years of age), there were significant increases in the number and proportion of cases from 2557 (16.5%) in 2007 to 4277 (23.4%) in 2010 ($P < 0.001$).
Conclusions: Moderately high 1-dose vaccine coverage in young children has been achieved with declining disease incidence, but varicella remains a common, seasonal disease in the population. Current epidemiology suggests that a government-funded varicella vaccine program that includes catch-up vaccination for older children, adolescents and adults needs consideration.

**Infectious Disease Burden Related to Child Day Care in the Netherlands**
Enserink, Remko; Ypma, Rolf; Donker, Gé A.; Smit, Henriette A.; van Pelt, Wilfrid
Pediatric Infectious Disease Journal. 32(8):e334-e340, August 2013.
doi: 10.1097/INF.0b013e318290601e

*Abstract:*
Background: Studying day-care–associated infectious disease dynamics aids in formulating evidence-based guidelines for disease control, thereby supporting day-care centers in their continuous efforts to provide their child population with a safe and hygienic environment. The objective of this study was to estimate the (excess) infectious disease burden related to child day-care attendance in the Netherlands.
Methods: A Dutch surveillance network of child day-care centers (DCCs) prospectively reported on infectious disease episodes and related use of health care among their child population on a daily basis from March 2010 to March 2012.
Results: Gastroenteritis (387 per 1000 child-years) and influenza-like illness (247 per 1000 child-years) were the most frequently reported infectious diseases. DCCs reported these infectious diseases to occur twice as often among children aged 0–2 years compared with children aged 2–4 years. Antibiotic treatment was required in 6%, a general practitioner visit in 29% and hospitalization in 2% of infectious disease episodes. DCC incidences of gastroenteritis and influenza-like illness requiring children to visit a general practitioner were approximately twice as high as general population estimates for this age group. Part of the DCCs indicated to not always wash the hands of children before eating (34%) or after a toilet visit (15%) or to not always clean the toilet and kitchen areas (17%) on a daily basis.
Conclusion: The infectious disease risk associated with child day-care attendance is substantial, particularly among the very young attendees, in excess of general population estimates for this age group and potentially partly preventable.

**Undervaccination of Perinatally HIV-infected and HIV-exposed Uninfected Children in Latin America and the Caribbean**

Succi, Regina C. M.; Krauss, Margot R.; Harris, D. Robert; Machado, Daisy M.; de Moraes-Pinto, Maria Isabel; Mussi-Pinhata, Marisa M.; Ruz, Noris Pavia; Pierre, Russell B.; Kolevic, Lenka; Joao, Esau; Foradori, Irene; Hazra, Rohan; Siberry, George K.; for the NISDI Pediatric Study Group 2012

Pediatric Infectious Disease Journal. 32(8):845-850, August 2013.
doi: 10.1097/INF.0b013e31828bbe68

*Abstract:*
Background: Perinatally HIV-infected (PHIV) children may be at risk of undervaccination. Vaccination coverage rates among PHIV and HIV-exposed uninfected (HEU) children in Latin America and the Caribbean were compared.
Methods: All PHIV and HEU children born from 2002 to 2007 who were enrolled in a multisite observational study conducted in Latin America and the Caribbean were included in this analysis. Children were classified as up to date if they had received the recommended number of doses of each vaccine at the appropriate intervals by 12 and 24 months of age. Fisher's exact test was used to analyze the data. Covariates potentially associated with a child's HIV status were considered in multivariable logistic regression modeling.
Results: Of 1156 eligible children, 768 (66.4%) were HEU and 388 (33.6%) were PHIV. HEU children were significantly ($P < 0.01$) more likely to be up to date by 12 and 24 months of age for all vaccines examined. Statistically significant differences persisted when the analyses were limited to children enrolled before 12 months of age. Controlling for birth weight, sex, primary caregiver education and any use of tobacco, alcohol or illegal drugs during pregnancy did not contribute significantly to the logistic regression models.
Conclusions: PHIV children were significantly less likely than HEU children to be up to date for their childhood vaccinations at 12 and 24 months of age, even when limited to children enrolled before 12 months of age. Strategies to increase vaccination rates in PHIV are needed.

**Vaccination of Healthy Children Against Seasonal Influenza: A European Perspective**
Heikkinen, Terho; Tsolia, Maria; Finn, Adam
Pediatric Infectious Disease Journal. 32(8):881-888, August 2013.
doi: 10.1097/INF.0b013e3182918168
*Abstract:*
Despite ample evidence for the great burden that annual influenza epidemics place on children and society in general, few European countries currently recommend influenza vaccination of healthy children of any age. The most frequently cited reasons for reluctance to extend general vaccine recommendations to children include the view that influenza is a mild illness of limited clinical importance, lack of country-specific data on disease burden, uncertainty about the efficacy and safety of influenza vaccines in children and inadequate evidence of cost-effectiveness of vaccinating children. In recent years, several clinical studies have provided new and important information that help address many of these areas of question and concern. In light of this newly available scientific evidence, influenza vaccine recommendations for children should be properly reevaluated in all European countries. Furthermore, to allow for variation in costs and patterns of healthcare delivery between different countries, cost-effectiveness analyses of influenza vaccination of healthy children should be performed in each country or region. Finally, increased efforts should be made to educate both healthcare professionals and the great public about recent findings and advances in the field of pediatric influenza.

**Pediatrics**
July 2013, VOLUME 132 / ISSUE 1
http://pediatrics.aappublications.org/current.shtml
[Reviewed earlier]

**Pharmaceutics**
Volume 5, Issue 3 (September 2013), Pages 371-
http://www.mdpi.com/1999-4923/5/3
[No relevant content]

**Pharmacoeconomics**
Volume 31, Issue 7, July 2013
http://link.springer.com/journal/40273/31/7/page/1
[Reviewed earlier]

**PLoS One**
[Accessed 20 July 2013]
http://www.plosone.org/
**Comparison of Different Risk Perception Measures in Predicting Seasonal Influenza Vaccination among Healthy Chinese Adults in Hong Kong: A Prospective Longitudinal Study**
Qiuyan Liao, Wing Sze Wong, Richard Fielding
Research Article | published 19 Jul 2013 | PLOS ONE 10.1371/journal.pone.0068019
*Abstract*

Background
Risk perception is a reported predictor of vaccination uptake, but which measures of risk perception best predict influenza vaccination uptake remain unclear.
Methodology
During the main influenza seasons (between January and March) of 2009 (Wave 1) and 2010 (Wave 2),505 Chinese students and employees from a Hong Kong university completed an online survey. Multivariate logistic regression models were conducted to assess how well different risk perceptions measures in Wave 1 predicted vaccination uptake against seasonal influenza in Wave 2.
Principal Findings
The results of the multivariate logistic regression models showed that feeling at risk (beta=0.25, p=0.021) was the better predictor compared with probability judgment while probability judgment (beta=0.25, p=0.029 ) was better than beliefs about risk in predicting subsequent influenza vaccination uptake. Beliefs about risk and feeling at risk seemed to predict the same aspect of subsequent vaccination uptake because their associations with vaccination uptake became insignificant when paired into the logistic regression model. Similarly, to compare the four scales for assessing probability judgment in predicting vaccination uptake, the 7-point verbal scale remained a significant and stronger predictor for vaccination uptake when paired with other three scales; the 6-point verbal scale was a significant and stronger predictor when paired with the percentage scale or the 2-point verbal scale; and the percentage scale was a significant and stronger predictor only when paired with the 2-point verbal scale.
Conclusions/Significance
Beliefs about risk and feeling at risk are not well differentiated by Hong Kong Chinese people. Feeling at risk, an affective-cognitive dimension of risk perception predicts subsequent vaccination uptake better than do probability judgments. Among the four scales for assessing risk probability judgment, the 7-point verbal scale offered the best predictive power for subsequent vaccination uptake.

**A Review of the Evidence to Support Influenza Vaccine Introduction in Countries and Areas of WHO's Western Pacific Region**

Gina Samaan, Michelle McPherson, Jeffrey Partridge

Research Article | published 16 Jul 2013 | PLOS ONE 10.1371/journal.pone.0070003

*Abstract*
Background
Immunization against influenza is considered an essential public health intervention to control both seasonal epidemics and pandemic influenza. According to the World Health Organization (WHO), there are five key policy and three key programmatic issues that decision-makers should consider before introducing a vaccine. These are (a) public health priority, (b) disease burden, (c) efficacy, quality and safety of the vaccine, (d) other inventions, (e) economic and financial issues, (f) vaccine presentation, (g) supply availability and (h) programmatic strength. We analyzed the body of evidence currently available on these eight issues in the WHO Western Pacific Region.
Methodology/Principal Findings
Studies indexed in PubMed and published in English between 1 January 2000 and 31 December 2010 from the 37 countries and areas of the Western Pacific Region were screened for keywords pertaining to the five policy and three programmatic issues. Studies were grouped according to country income level and vaccine target group. There were 133 articles that met the selection criteria, with most (90%) coming from high-income countries. Disease burden (n = 34), vaccine efficacy, quality and safety (n = 27) and public health priority (n = 27) were

most frequently addressed by studies conducted in the Region. Many studies assessed influenza vaccine policy and programmatic issues in the general population (42%), in the elderly (24%) and in children (17%). Few studies (2%) addressed the eight issues relating to pregnant women.
Conclusions/Significance
The evidence for vaccine introduction in countries and areas in this Region remains limited, particularly in low- and middle-income countries that do not currently have influenza vaccination programmes. Surveillance activities and specialized studies can be used to assess the eight issues including disease burden among vaccine target groups and the cost-effectiveness of influenza vaccine. Multi-country studies should be considered to maximize resource utilization for cross-cutting issues such as vaccine presentation and other inventions.

**PLoS Medicine**
(Accessed 20 July 2013)
http://www.plosmedicine.org/
[No new relevant content]

**PLoS Neglected Tropical Diseases**
June 2013
http://www.plosntds.org/article/browseIssue.action
[No new relevant content]

**PNAS - Proceedings of the National Academy of Sciences of the United States of America**
(Accessed 20 July 2013)
http://www.pnas.org/content/early/recent
**Single-dose vaccine against tick-borne encephalitis**
Alexander A. Rumyantsev, Maryann Giel-Moloney, John Catalan, Yuxi Liu, Qing-sheng Gao, Jeff Almond, Harry Kleanthous, and Konstantin V. Pugachev
PNAS 2013 ; published ahead of print July 15, 2013, doi:10.1073/pnas.1306245110
http://www.pnas.org/content/early/2013/07/11/1306245110.abstract
*Abstract*
Tick-borne encephalitis (TBE) virus is the most important human pathogen transmitted by ticks in Eurasia. Inactivated vaccines are available but require multiple doses and frequent boosters to induce and maintain immunity. Thus far, the goal of developing a safe, live attenuated vaccine effective after a single dose has remained elusive. Here we used a replication-defective (single-cycle) flavivirus platform, RepliVax, to generate a safe, single-dose TBE vaccine. Several RepliVax-TBE candidates attenuated by a deletion in the capsid gene were constructed using different flavivirus backbones containing the envelope genes of TBE virus. RepliVax-TBE based on a West Nile virus backbone (RV-WN/TBE) grew more efficiently in helper cells than candidates based on Langat E5, TBE, and yellow fever 17D backbones, and was found to be highly immunogenic and efficacious in mice. Live chimeric yellow fever 17D/TBE, Dengue 2/TBE, and Langat E5/TBE candidates were also constructed but were found to be underattenuated. RV-WN/TBE was demonstrated to be highly immunogenic in Rhesus macaques after a single dose, inducing a significantly more durable humoral immune response

compared with three doses of a licensed, adjuvanted human inactivated vaccine. Its immunogenicity was not significantly affected by preexisting immunity against WN. Immunized monkeys were protected from a stringent surrogate challenge. These results support the identification of a single-cycle TBE vaccine with a superior product profile to existing inactivated vaccines, which could lead to improved vaccine coverage and control of the disease.

**Public Health Ethics**
Volume 6 Issue 2 July 2013
http://phe.oxfordjournals.org/content/current
**Influenza: Prioritizing Homeless and Hard-to-Reach Populations**
Kristy Buccieri
http://phe.oxfordjournals.org/content/6/2/185.abstract
*Abstract*
The manner in which limited vaccines are distributed during a pandemic is an ethical issue. The utility principle has been used to argue priority be given to certain individuals based on factors such as the epidemiology of the spread of disease and maintaining the functioning of society. The equity principle has been used to encourage fair practices that account for the economic and social costs of all decisions made. We argue that both principles are met through priority vaccination of homeless individuals, as this strategy protects a medically vulnerable population while reducing the chances of transmission to others as they move through populated urban spaces. We begin by reviewing debates around ethical vaccine distribution. We then argue the homeless are a medically high-risk population who may contribute to the spread of disease through their mobility. As immunization rates are generally lower among the homeless and many do not access mainstream health care, we argue that community vaccine clinics must be used to reach these individuals. We provide support by analyzing Toronto Public Health's operation of vaccine clinics in shelters and drop-in centres during pH1N1 and conclude that this strategy is effective for immunizing homeless individuals, bringing together the equity and utility principles.
**Enhancing Children against Unhealthy Behaviors—An Ethical and Policy Assessment of Using a Nicotine Vaccine**
Ori Lev, Benjamin S. Wilfond, and Colleen M. McBride
Public Health Ethics (2013) 6 (2): 197-206 doi:10.1093/phe/pht006
http://phe.oxfordjournals.org/content/6/2/197.abstract
*Abstract*
Health behaviors such as tobacco use contribute significantly to poor health. It is widely recognized that efforts to prevent poor health outcomes should begin in early childhood. Biomedical enhancements, such as a nicotine vaccine, are now emerging and have potential to be used for primary prevention of common diseases. In anticipation of such enhancements, it is important that we begin to consider the ethical and policy appropriateness of their use with children. The main ethical concerns raised by enhancing children relate to their impact on children's well-being and autonomy. These concerns are significant, however they do not appear to apply in the case of the nicotine vaccine; indeed the vaccine could even further these goals for children. Nevertheless, concerns about broadly applying this enhancement may be more challenging. The vaccine may be less cost-effective than alternative public efforts to prevent tobacco use, utilizing it could distract from addressing the foundational causes of smoking and it might not be publically acceptable. Empirical research about these concerns is needed to ascertain their likelihood and impact as well as how they could be minimized. This

research could help determine whether behavior-related enhancements hold promise for improving children's health.

**Qualitative Health Research**
August 2013; 23 (8)
http://qhr.sagepub.com/content/current
*Special Issue: Community Care*
[Reviewed earlier; No relevant content]

**Risk Analysis**
July 2013 Volume 33, Issue 7 Pages 1175–1381
http://onlinelibrary.wiley.com/doi/10.1111/risa.2013.33.issue-7/issuetoc
[Reviewed earlier; No relevant content]

**Science**
19 July 2013 vol 341, issue 6143, pages 209-308
http://www.sciencemag.org/current.dtl
[No relevant content]

**Science Translational Medicine**
17 July 2013 vol 5, issue 194
http://stm.sciencemag.org/content/current
[No relevant content]

**Social Science & Medicine**
Volume 92, In Progress (September 2013)
http://www.sciencedirect.com/science/journal/02779536/93
[No new relevant content]

**Vaccine**
Volume 31, Issue 34, Pages 3389-3460 (25 July 2013)
http://www.sciencedirect.com/science/journal/0264410X
*Skin Vaccination Summit 2011*
*Gallaudet University, Washington, DC, USA*
*12–14 October 2011*
**Intradermal delivery for vaccine dose sparing: Overview of current issues**
Original Research Article
Pages 3392-3395
Darin Zehrung, Courtney Jarrahian, Amy Wales
*Abstract*
There is a wide range of methods and technologies aimed at improving human vaccine products and the way they are delivered. Some of these have the potential to increase vaccine

effectiveness in specific populations and may furthermore help to increase vaccine access, reduce costs, and ease the logistical burdens of immunization programs, especially in low-resource settings. One strategy under evaluation is the use of intradermal (ID) delivery of vaccines, which has been shown to result in dose sparing with some vaccines. Novel ID delivery devices could enable needle-free and therefore safer and more reliable ID administration than current ID injection methods, facilitating ID delivery and dose sparing with existing or new vaccines. There are promising clinical data with some vaccines that highlight the potential of reduced-dose immunization via the ID route. And more studies are under way. However, a number of clinical and technical research as well as operational challenges exist, including establishing the optimal doses for different vaccines, reformulating to adjust antigen concentration or add preservatives, matching vaccine vial volume to session size, working with vaccine manufacturers to achieve regulatory clearance for ID delivery, and developing ID delivery devices suitable for the varying scenarios of use of different vaccines. These will need to be addressed before the benefits of ID delivery and the impact of novel ID delivery technologies on human health are fully realized.

**Dose sparing and enhanced immunogenicity of inactivated rotavirus vaccine administered by skin vaccination using a microneedle patch**

Original Research Article

Pages 3396-3402

Sungsil Moon, Yuhuan Wang, Chris Edens, Jon R. Gentsch, Mark R. Prausnitz, Baoming Jiang

*Abstract*

Skin immunization is effective against a number of infectious diseases, including smallpox and tuberculosis, but is difficult to administer. Here, we assessed the use of an easy-to-administer microneedle (MN) patch for skin vaccination using an inactivated rotavirus vaccine (IRV) in mice. Female inbred BALB/c mice in groups of six were immunized once in the skin using MN coated with 5 μg or 0.5 μg of inactivated rotavirus antigen or by intramuscular (IM) injection with 5 μg or 0.5 μg of the same antigen, bled at 0 and 10 days, and exsanguinated at 28 days. Rotavirus-specific IgG titers increased over time in sera of mice immunized with IRV using MN or IM injection. However, titers of IgG and neutralizing activity were generally higher in MN immunized mice than in IM immunized mice; the titers in mice that received 0.5 μg of antigen with MN were comparable or higher than those that received 5 μg of antigen IM, indicating dose sparing. None of the mice receiving negative-control, antigen-free MN had any IgG titers. In addition, MN immunization was at least as effective as IM administration in inducing a memory response of dendritic cells in the spleen. Our findings demonstrate that MN delivery can reduce the IRV dose needed to mount a robust immune response compared to IM injection and holds promise as a strategy for developing a safer and more effective rotavirus vaccine for use among children throughout the world

**Measles vaccination using a microneedle patch**

Original Research Article

Pages 3403-3409

Chris Edens, Marcus L. Collins, Jessica Ayers, Paul A. Rota, Mark R. Prausnitz

*Abstract*

Measles vaccination programs would benefit from delivery methods that decrease cost, simplify logistics, and increase safety. Conventional subcutaneous injection is limited by the need for skilled healthcare professionals to reconstitute and administer injections, and by the need for safe needle handling and disposal to reduce the risk of disease transmission through needle re-use and needlestick injury. Microneedles are micron-scale, solid needles coated with a dry formulation of vaccine that dissolves in the skin within minutes after patch application. By

avoiding the use of hypodermic needles, vaccination using a microneedle patch could be carried out by minimally trained personnel with reduced risk of blood-borne disease transmission. The goal of this study was to evaluate measles vaccination using a microneedle patch to address some of the limitations of subcutaneous injection. Viability of vaccine virus dried onto a microneedle patch was stabilized by incorporation of the sugar, trehalose, and loss of viral titer was less than 1 log10(TCID50) after storage for at least 30 days at room temperature. Microneedle patches were then used to immunize cotton rats with the Edmonston-Zagreb measles vaccine strain. Vaccination using microneedles at doses equaling the standard human dose or one-fifth the human dose generated neutralizing antibody levels equivalent to those of a subcutaneous immunization at the same dose. These results show that measles vaccine can be stabilized on microneedles and that vaccine efficiently reconstitutes in vivo to generate a neutralizing antibody response equivalent to that generated by subcutaneous injection.

**Vaccine: Development and Therapy**
(Accessed 20 July 2013)
http://www.dovepress.com/vaccine-development-and-therapy-journal
[No new relevant content]

**Value in Health**
Vol 16 | No. 4 | June 2013 | Pages 453-698
http://www.valueinhealthjournal.com/current
[Reviewed earlier]

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

**Receipt of human papillomavirus vaccine among privately insured adult women in a US Midwestern Health Maintenance Organization**
EO Kharbanda, E Parker, JD Nordin, B Hedblom… - Preventive Medicine, 2013
Objectives To describe human papillomavirus (HPV) vaccine coverage among adult privately insured women including variation in coverage by race/ethnicity. Methods This cross-sectional, observational study included women 18–26 years of age with continuous ...

**O10. 2 A Community-Randomised Phase IV Human Papillomavirus (HPV) Vaccination Trial of Vaccination Strategy**
J Paavonen - Sexually Transmitted Infections, 2013
... Abstract. High-risk human papillomavirus (hrHPV) is the 2nd leading cause of cancer in women Bivalent Cervarix™ vaccine is highly efficacious against hrHPVs and associated precancers. Mathematical models disagree about the best vaccination strategy. ...

**Novel HIV vaccine strategies: overview and perspective**
Yehuda Z. Cohen, Center for Virus and Vaccine Research, Beth Israel Deaconess Medical Center, Boston, USA; Raphael Dolin, Beth Israel Deaconess Medical Center, Boston, USA

Published online before print July 15, 2013, doi: 10.1177/2051013613494535 Therapeutic Advances in Vaccines July 15, 2013 2051013613494535
http://tav.sagepub.com/content/early/2013/07/14/2051013613494535.abstract
*Abstract*
A human immunodeficiency virus (HIV) vaccine remains a central component in the quest to control the worldwide epidemic. To examine the status of the development of HIV vaccines, we review the results of the efficacy trials carried out to date and the immunologic principles that guided them. Four vaccine concepts have been evaluated in HIV-1 vaccine efficacy trials, and the results of these trials have provided significant information for future vaccine development. While one of these trials demonstrated that a safe and effective HIV vaccine is possible, many questions remain regarding the basis for the observed protection and the most efficient way to stimulate it. Novel HIV vaccine strategies including induction of highly potent broadly neutralizing antibodies, use of novel homologous and heterologous vector systems, and vectored immunoprophylaxis seek to expand and build upon the knowledge gained from these trials.

**Immunogenicity of Quadrivalent Human Papillomavirus Vaccine in Organ Transplant Recipients**
D Kumar, ER Unger, G Panicker, P Medvedev… - American Journal of Transplantation…, 2013
Abstract Solid organ transplant recipients are at risk of morbidity from human papillomavirus (HPV)-related diseases. Quadrivalent HPV vaccine is recommended for post- transplant patients but there are no data on vaccine immunogenicity. We determined the ...

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

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

**Al Jazeera**
http://www.aljazeera.com/Services/Search/?q=vaccine
Accessed 20 July 2013
[No new, unique, relevant content]

**The Atlantic**
http://www.theatlantic.com/magazine/
*Accessed 20 July 2013*
[No new, unique, relevant content]

**BBC**
http://www.bbc.co.uk/
*Accessed 20 July 2013*
[No new, unique, relevant content]

**Brookings**
http://www.brookings.edu/
*Accessed 20 July 2013*
[No new, unique, relevant content]

**Council on Foreign Relations**
http://www.cfr.org/
*Accessed 20 July 2013*
[No new, unique, relevant content]

**Economist**
http://www.economist.com/
*Accessed 20 July 2013*
[No new, unique, relevant content]

**Financial Times**
http://www.ft.com
*Accessed 20 July 2013*
[No new, unique, relevant content]

**Forbes**
http://www.forbes.com/
*Accessed 20 July 2013*
**What Jenny McCarthy Should Do Before Her Debut On 'The View'**
What we'd like to see, before McCarthy joins "The View is for her to simply state what the evidence demonstrates: She was wrong on both vaccines and autism.
Emily Willingham, Contributor Jul 16, 2013
**Jenny McCarthy Is A Dangerous Example of Medical Celebrity**
Even a Nobel laureate recognizes the limits of their expertise. Not a Playboy Playmate. It's Dr. Robert J. Lefkowitz, Duke University Medical Center, 2012 Nobel laureate in chemistry. (Photo credit: D.L. Anderson/INDY Week) Earlier this year, I had a cover story in INDY Week, the Research Triangle area alt-weekly, on Dr. Bob [...] read »
David Kroll, Contributor

**Foreign Affairs**
http://www.foreignaffairs.com/
*Accessed 20 July 2013*
[No new, unique, relevant content]

**Foreign Policy**
http://www.foreignpolicy.com/
*Accessed 20 July 2013*

[No new, unique, relevant content]

**The Guardian**
http://www.guardiannews.com/
*Accessed 20 July 2013*
[No new, unique, relevant content]

**The Huffington Post**
http://www.huffingtonpost.com/
Accessed 20 July 2013
[No new, unique, relevant content]

**Le Monde**
http://www.lemonde.fr/
*Accessed 20 July 2013*
[No new, unique, relevant content]

**New Yorker**
http://www.newyorker.com/
*Accessed 20 July 2013*
Blog: Elements
**Jenny McCarthy's Dangerous Views**
McCarthy has spent much of the past ten years campaigning against vaccines—which are the most effective instruments of public health in human history, aside from clean water.
by Michael Specter

**New York Times**
http://www.nytimes.com/
*Accessed 20 July 2013*
[No new, unique, relevant content]

**Reuters**
http://www.reuters.com/
*Accessed 20 July 2013*
[No new, unique, relevant content]

**Wall Street Journal**
http://online.wsj.com/home-page
*Accessed 20 July 2013*
[No new, unique, relevant content]

**Washington Post**
http://www.washingtonpost.com/
*Accessed 20 July 2013*
[No new, unique, relevant content]

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