Center for Vaccine Ethics and Policy
NYU | Wistar Institute | CHOP

Vaccines: The Week in Review
4 May 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

UNICEF: Mass vaccination campaigns in Syria, Jordan, Lebanon, Iraq and Turkey amid measles outbreaks

Press release - 30 April 2013

Excerpt

UNICEF and partners have stepped up vaccination campaigns in Syria, Jordan, Lebanon, Iraq and Turkey amid a number of measles outbreaks in a region already struggling to provide humanitarian assistance to millions of people affected by the Syrian crisis.

"With large population movements and the breakdown of regular health services in Syria, additional precautions are required to ensure that children are protected against killer diseases like measles no matter where they are," said Mahendra Sheth, UNICEF Regional Health Advisor…

…Since the start of the crisis more than two years ago, over 1.4 million Syrian refugees have fled into neighbouring Jordan, Lebanon, Iraq, Turkey and Egypt, with a current average of up to 8,000 Syrians fleeing the country daily.

In addition, some 4.25 million Syrians have been internally displaced – nearly half of them children. Many live in cramped and unsanitary conditions where disease can easily spread. The on-going conflict has seriously damaged the health system including the national routine immunization programme.

In Iraq, since December 2012, about 332 cases of measles have been reported in the northern Domiz refugee camp. In Lebanon, since January, some 300 cases of measles have been reported by the Ministry of Health, while Syria has registered 133 confirmed cases. In Jordan, at least five cases have been identified among Syrian refugees in the densely populated Za'atari refugee camp. Meanwhile in Turkey over the past year, there have been some 3,000 to 4,000 reported measles cases, including 300 among Syrian refugees…

…In Syria, some 550,000 children have been vaccinated by Ministry of Health teams recently as part of a national campaign that is targeting 2.5 million children with the support of UNICEF and the WHO. In Lebanon, 462,000 Syrian, Lebanese and Palestinian children have been vaccinated this year alone.

In Jordan, a mass vaccination campaign at Za'atari camp has immunized 60,000 refugees against measles. A national vaccination campaign is expected shortly.

Meanwhile, in Iraq's Domiz camp, about 19,300 refugees from the age of six months to 30 years were vaccinated with the support of UNICEF. In Turkey, the Ministry of Health has stepped up immunizations in eight provinces where most of the around 292,000 Syrian refugees are concentrated…
http://www.unicef.org/media/media_68943.html

Update: Polio this week - *As of 1 May 2013*
Global Polio Eradication Initiative
http://www.polioeradication.org/Dataandmonitoring/Poliothisweek.aspx
[Editor's extract and bolded text]
- Multi-country immunization campaigns took place this week (26-29 April) across West Africa. Benin, Burkina Faso, Côte d'Ivoire, Guinea, Liberia, Mali and Sierra Leone all participated, aiming to reach nearly 30 million children under the age of five years with oral polio vaccine (OPV).
- The Horn of Africa TAG is meeting this week (30 April to 1 May) in Nairobi, Kenya, to review the status of polio eradication activities and impact in the region. Outbreak response is ongoing, to an ongoing circulating vaccine-derived poliovirus type 2 (cVDPV2) outbreak in south-central Somalia, which in 2012 had also spread across the border into Kenya.

Nigeria
Two new WPV cases were reported in the past week (WPV1s from Borno), bringing the total number of WPV cases for 2013 to 16. The most recent WPV case had onset of paralysis on 28 March (WPV1 from Borno).

Horn of Africa
Outbreak response is continuing in various parts of the Horn of Africa, in response to the ongoing cVDPV2 outbreak in south-central Somalia. Staggered SNIDs are being implemented in parts of Somalia throughout May.

WHO: Global Alert and Response (GAR) – *Disease Outbreak News*
http://www.who.int/csr/don/2013_03_12/en/index.html
Novel coronavirus infection – update 2 May 2013
Excerpt

The Ministry of Health in Saudi Arabia has informed WHO of seven new laboratory confirmed cases of infection with the novel coronavirus (nCoV), including five deaths.

Two patients are currently in critical condition.

The government is conducting ongoing investigation into this outbreak.

Preliminary investigation show no indication of recent travel or animal contact of any of the confirmed cases. The confirmed cases are not from the same family.

From September 2012 to date, WHO has been informed of a global total of 24 laboratory confirmed cases of human infection with nCoV, including 16 deaths…

Human infection with avian influenza A(H7N9) virus – update 2 May 2013

Excerpt

As of 2 May 2013 (16:00 CET), the National Health and Family Planning Commission, China notified WHO of an additional two laboratory-confirmed cases of human infection with avian influenza A(H7N9) virus.

The first patient is a 58-year-old man from Fujian province who became ill on 21 April 2013 and the second patient is a 69-year-old man from Hunan province who became ill on 23 April 2013.

Additionally, two patients earlier reported have died…

…So far, there is no evidence of sustained human-to-human transmission…

WHO Europe: Regional decline in measles with large rubella outbreaks in two countries: epidemiological overview for 2012

WHO EpiBrief
2 May 2013

Excerpt

The EpiBrief provides an epidemiological assessment based on surveillance data for selected vaccine-preventable diseases in the WHO European Region for 2012. The report reveals that measles declined by over a third in the European Region last year (with 23 871 cases) compared with the total number of reported cases in 2011. Despite gains in controlling rubella in most countries of the Region, however, outbreaks in Poland and Romania contributed to a more than 200% increase in the total number of rubella cases in the Region in 2012 (with 29 361 cases) compared with 2011, when 9461 cases were reported.

Data for the first two months of 2013, published today in "WHO EpiData" summary tables, indicate that outbreaks of both diseases continue in various parts of the Region. Measles outbreaks have been reported in Azerbaijan, Georgia, Turkey and the United Kingdom totalling over 3500 cases in January and February. For the same period, over 4500 cases of rubella have been reported, primarily in Poland. More cases are expected to be reported over the next few weeks as outbreaks persist, but these numbers are, so far, lower than those reported for the same period in 2011 and 2012…

http://www.euro.who.int/en/what-we-do/health-topics/disease-prevention/vaccines-and-immunization/news/news/2013/05/regional-decline-in-measles-with-large-rubella-outbreaks-in-two-countries-epidemiological-overview-for-2012

- WHO EpiBrief, Issue 1, April 2013
  Epidemiological overview and analysis of measles and rubella in the WHO European Region in 2012
- WHO EpiData, March 2012–February 2013
  Summary tables of epidemiological data on selected vaccine-preventable diseases in the WHO European Region

WHO Campaign: *SAVE LIVES - Clean Your Hands* Hand Hygiene Day - 5 May

WHO's global annual campaign

http://www.who.int/gpsc/5may/en/index.html

WHO encourages patient participation for hand hygiene in health care

News release - Excerpt

3 May 2013 | Geneva - On Hand Hygiene Day (5 May), the World Health Organization (WHO) is encouraging patients and their family members to join health workers in their efforts to practice good hand hygiene. Every year, hundreds of millions of patients around the world are affected by health care-associated infections. These lead to significant physical and psychological suffering and sometimes death of patients, and financial losses for health systems. More than half of these infections could be prevented by caregivers properly cleaning their hands at key moments in patient care…

http://www.who.int/mediacentre/news/releases/2013/hand_hygiene_20130503/en/index.html

WHO: SAGE meeting of April 2013

Salle A, CCV, Geneva, 9-11 April 2013

Presentations:

http://www.who.int/immunization/sage/meetings/2013/april/presentations_background_docs/en/index1.html

Background documents:

http://www.who.int/immunization/sage/meetings/2013/april/presentations_background_docs/en/index.html

The **Weekly Epidemiological Record (WER) for 3 May 2013**, vol. 88, 18(pp. 181–188) includes:

- Progress towards global interruption of wild poliovirus transmission, January 2012–March 2013
- WHO Strategic Advisory Group of Experts (SAGE) on immunization: request for nominations

http://www.who.int/entity/wer/2013/wer8818.pdf

WHO - Humanitarian Health Action

http://www.who.int/hac/en/index.html

No relevant updates published

UN Watch to 4 May 2013

Selected meetings, press releases, and press conferences relevant to immunization, vaccines, infectious diseases, etc. http://www.un.org/en/unpress/

No new relevant 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

Report: Yellow Fever Vaccination: The Potential of Dose-Sparing to Increase Vaccine Supply and Availability

PATH*

May 2013

Excerpt

A new special report commissioned and published by PATH concludes that delivering yellow fever vaccine at a reduced dose through a method referred to as dose-sparing could be a pragmatic and low-risk strategy for maximizing the availability of yellow fever vaccine…

… Each year, yellow fever affects more than 200,000 people, with about 30,000 dying of the infection. Although there is no cure, the infection can be prevented with one dose of live attenuated yellow fever vaccine. Only four manufacturers currently produce yellow fever vaccines that have received prequalification status from the World Health Organization (WHO), allowing for the purchase and use of the vaccine by United Nations agencies. This can result in insufficient vaccine supply to compensate for problems or disruptions in vaccine production or to meet spikes in demand when outbreaks occur.

As part of PATH's ongoing efforts to explore innovative ways to improve vaccine delivery in low-resource settings, the new report investigates the potential benefits, obstacles, and costs of dose-sparing for yellow fever vaccine. It also assesses to what extent different delivery routes and novel delivery devices, such as needle-free jet injectors, could help facilitate the implementation of dose-reduction strategies.

Among the key findings:

- Dose-sparing can induce levels of immunity comparable to a standard dose for some vaccines, including yellow fever vaccine, potentially helping to stretch limited supplies of existing vaccines.
- Dose-sparing could result in a fivefold increase in the number of vaccine doses per vial.
- Preventive yellow fever vaccination campaigns that include dose-sparing strategies could help conserve 24 to 42 million doses of yellow fever vaccine annually and up to 420 million doses by 2022—a savings of US$340 million in vaccine purchase costs over the next decade.
- To prevent vaccine wastage, dose-sparing strategies are likely to be more appropriate for immunization settings that involve a large number of vaccinations, such as preventive or outbreak-control campaigns.
- A reduced dose of yellow fever vaccine could potentially be administered through the intradermal and/or subcutaneous delivery route.

Additional clinical trials are needed to confirm the safety and immunogenicity of reduced doses of yellow fever vaccines and to determine the best route of delivery.

**Authorship*

This report was written by Julian Hickling, MBA PhD, and Rebecca Jones, MSc, PhD, from Working in Tandem Ltd., and commissioned with funds provided by the Bill & Melinda Gates Foundation through the Disposable Syringe Jet Injector project within the Delivery portfolio of the Vaccine Technologies Group at PATH

http://www.path.org/news/an130425-yellow-fever.php

Conference: Sixth Conference of African Union Ministers of Health (CAMH6)
22-26 April 2013
ADDIS ABABA, ETHIOPIA
Excerpt

The Sabin Vaccine Institute reported that the CAMH6 conference concluded on April 26, 2013 "with a strong call for African countries and development partners to increase support for neglected tropical disease (NTD) control and elimination programs. This call for action supports the World Health Organization's (WHO) goal to control or eliminate ten of the most common NTDs by 2020."

…The African Ministers of Health acknowledged "the tremendous work done by country governments, the WHO Regional Office for Africa, and development partners, highlighting the development of 36 multi-year, national NTD control and elimination plans, the WHO Roadmap for Implementation titled, Accelerating Work to Overcome the Global Impact of Neglected Tropical Diseases, and the January 2012 London Declaration on NTDs. The Ministers called on African governments and partners to build on this momentum by making financial commitments towards the implementation of the national NTD control and elimination plans…"
http://www.sabin.org/updates/pressreleases/africa-union-joins-global-fight-end-neglected-tropical-diseases-2020

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. 5 | May 2013 | Pages 389-480
http://www.ajicjournal.org/current
Haemophilus influenzae as an airborne contamination in child day care centers
Danuta O. Lis, PhD, Rafał L. Górny, PhD
13 September 2012
Abstract
Background
The aim of this study was to assess the exposure of children to airborne Haemophilus influenzae in day care centers.
Methods
Air samples were taken using an Andersen impactor in 32 rooms designed for children stay. The concentrations of airborne bacteria were calculated as colony forming units (CFU) (growing on trypticase soy agar) per cubic meter of air (CFU/m3). The compositions of bioaerosol were

determined on blood trypticase soy agar and Haemophilus selective agar. Isolated strains were identified using API NH strips and apiweb software. The antibiotic resistance of H influenzae strains was determined by the disk diffusion method.
Results
Compared with the proposed criteria for microbiologic quality of indoor air, the rooms were characterized by the very high bacterial contamination of the air. The prevailing component of bacterial aerosol was gram-positive cocci. Airborne H influenzae strains were found in 25% of the investigated rooms and were mostly classified as biotype II (33%).
Conclusion
It may be accepted that the exposure to airborne H influenzae is typical of child day care centers in contrast to indoor environments with older population. Child day care center contribute to the expansion of H influenzae in human population via air. Generally, airborne H influenzae isolates from the investigated child day care centers were susceptible to older antibiotics such as ampicillin and amoxicillin-clavulanic acid.
http://www.ajicjournal.org/article/S0196-6553%2812%2900885-1/abstract

Compliance with hygiene guidelines: The effect of a multimodal hygiene intervention and validation of direct observations

Sara Mernelius, MS, Per-Olof Svensson, RN, BSc; Gunhild Rensfeldt, RN, BSc; Ewa Davidsson, RN, BSc; Barbro Isaksson, MD, PhD; Sture Löfgren, MD, PhD; Andreas Matussek, MD, PhD

Abstract

Background
Good compliance with hygiene guidelines is essential to prevent bacterial transmission and health care-associated infections. However, the compliance is usually <50%.
Methods
A multimodal and multidisciplinary hygiene intervention was launched once the baseline compliance was determined through direct observations in 4 departments of obstetrics and gynecology. Detailed evaluations of the compliance rates were performed at point of stability (at 80%) and follow-up (3 years after hygiene intervention). Validation of direct observations was performed using blinded double appraisal and multiappraisal.
Results
At baseline, the compliance with barrier precautions and the dress code at the 4 departments were 39% to 47% and 79% to 98%, respectively. Point of stability was reached approximately 1 year after the hygiene intervention was launched. The compliance with barrier precautions was significantly higher at follow-up compared with baseline in 3 departments. In the validation by double appraisal, 471 of 483 components were judged identical between observers. In the multiappraisal, 95% to 100% of the observers correctly judged the 7 components.
Conclusion
It is possible to improve compliance with hygiene guidelines, but, to ensure a long-lasting effect, a continuous focus on barrier precautions is required. Observation is a valid method to monitor compliance.
http://www.ajicjournal.org/article/S0196-6553%2812%2901249-7/abstract

American Journal of Public Health
Volume 103, Issue 5 (May 2013)
http://ajph.aphapublications.org/toc/ajph/current
[Reviewed earlier; No relevant content]

Annals of Internal Medicine
16 April 2013, Vol. 158. No. 8
http://www.annals.org/content/current
[Reviewed earlier; No relevant content]

BMC Public Health
(Accessed 4 May 2013)
http://www.biomedcentral.com/bmcpublichealth/content
Research article
Health economics of rubella: a systematic review to assess the value of rubella vaccination
Joseph B Babigumira1,2*, Ian Morgan3 and Ann Levin4
Abstract
Background
Most cases of rubella and congenital rubella syndrome (CRS) occur in low- and middle-income countries. The World Health Organization (WHO) has recently recommended that countries accelerate the uptake of rubella vaccination and the GAVI Alliance is now supporting large scale measles-rubella vaccination campaigns. We performed a review of health economic evaluations of rubella and CRS to identify gaps in the evidence base and suggest possible areas of future research to support the planned global expansion of rubella vaccination and efforts towards potential rubella elimination and eradication.
Methods
We performed a systematic search of on-line databases and identified articles published between 1970 and 2012 on costs of rubella and CRS treatment and the costs, cost-effectiveness or cost-benefit of rubella vaccination. We reviewed the studies and categorized them by the income level of the countries in which they were performed, study design, and research question answered. We analyzed their methodology, data sources, and other details. We used these data to identify gaps in the evidence and to suggest possible future areas of scientific study.
Results
We identified 27 studies: 11 cost analyses, 11 cost-benefit analyses, 4 cost-effectiveness analyses, and 1 cost-utility analysis. Of these, 20 studies were conducted in high-income countries, 5 in upper-middle income countries and two in lower-middle income countries. We did not find any studies conducted in low-income countries. CRS was estimated to cost (in 2012 US$) between $4,200 and $57,000 per case annually in middle-income countries and up to $140,000 over a lifetime in high-income countries. Rubella vaccination programs, including the vaccination of health workers, children, and women had favorable cost-effectiveness, cost-utility, or cost-benefit ratios in high- and middle-income countries.
Conclusions
Treatment of CRS is costly and rubella vaccination programs are highly cost-effective. However, in order for research to support the global expansion of rubella vaccination and the drive towards rubella elimination and eradication, additional studies are required in low-income countries, to tackle methodological limitations, and to determine the most cost-effective programmatic strategies for increased rubella vaccine coverage.
http://www.biomedcentral.com/1471-2458/13/406/abstract

British Medical Bulletin
Volume 105 Issue 1 March 2013
http://bmb.oxfordjournals.org/content/current
[Reviewed earlier]

British Medical Journal
04 May 2013 (Vol 346, Issue 7906)
http://www.bmj.com/content/346/7906

Editorial

Measles in the UK: a test of public health competency in a crisis

Can new agencies work effectively together to meet the challenge?

Felix Greaves, honorary clinical research fellow1, Liam Donaldson, professor of health policy2

Excerpt

The recent surge in measles cases in south Wales signals a discomfiting failure by a G8 nation to control an easily preventable disease. Far from the measles virus being holed up in outposts in poor countries, the spectre of large outbreaks of measles in England is now looming large. By contrast, elimination of endemic measles in the Americas has been achieved by treating it as an emergency.1 Prevention of more measles cases in the United Kingdom, and avoidance of embarrassment for the government, will turn on the effectiveness of the public health delivery system.

In the north of England there have been 354 cases in 2013 so far.2 The pool of vulnerable children nationally is worrying: 8% of those aged 10-16 years have had no measles, mumps, and rubella (MMR) vaccine, and 8% have had only one of the required two doses.3 Susceptible children are distributed throughout the country, making the site of the next outbreak impossible to predict. In London, where immunisation levels for all vaccines are traditionally lower,4 there have been few cases so far. However, London is a prime location for a major outbreak, with its transient and diverse population and its pockets of low MMR vaccination coverage.

It is hard to manage risk in epidemics, is even harder to explain risk to the public. In a well-nourished population, with good healthcare services, measles has a much lower mortality rate than in developing countries. Furthermore, within living memory, it was seen as a natural part of childhood. For most of those who catch it, measles is an unpleasant self-limiting illness. That said, so far in England in 2013, 18% of patients with the disease have been admitted to hospital, and in a small but important minority,3 the possibility of further complications and permanent disability, or even death, is real. The question society needs to answer is whether it is ethically acceptable to tolerate any serious complication, or death, from measles when an effective vaccine is available.

In a public health emergency, which is what the current measles threat is, it is vital that the response is well coordinated. All organisations and professionals involved in managing it must know their own role and each other's, and they must work well together. Strong leadership, excellent communication, and a modicum of command and control are also essential. There is a concern that, with the recent health system reforms in England, bodies that were key in crises like severe acute respiratory syndrome, pandemic influenza, and foot-and-mouth disease (such as strategic health authorities and primary care trusts) have been devolved and swept away. Public health teams are now spread across local authorities, with links to the NHS much weaker than in the past. A newly established agency, Public Health England, is charged with protecting the population's health, but resources for immunisation are with NHS England,5 an entity

devoid of public health expertise at board level. It is not acceptable for the elements of this new public health system to learn on the job. An agreed operating relationship is needed quickly. There is the opportunity for a natural experiment to compare the performance of the more mature Welsh system and its brand new English equivalent. Rigorous evaluation of health sector reforms in their early stages would be a novel event in recent British public policy…
http://www.bmj.com/content/346/bmj.f2793

Bulletin of the World Health Organization
Volume 91, Number 5, May 2013, 313-388
http://www.who.int/bulletin/volumes/91/5/en/index.html

Policy coherence for improved medical innovation and access

Zafar Mirza a, Anatole Krattiger b, Antony Taubman c, Hans Georg Bartels c, Peter Beyer a, Roger Kampf c & Jayashree Watal c
a. World Health Organization, avenue Appia 20, 1211 Geneva 27, Switzerland.
b. World Intellectual Property Organization, Geneva, Switzerland.
c. World Trade Organization, Geneva, Switzerland.

Bulletin of the World Health Organization 2013;91:315-315A.
http://dx.doi.org/10.2471/BLT.13.122705

Excerpt

Public policy-making is an increasingly complex undertaking in a globalizing world, especially as policy domains formerly viewed in isolation become more intertwined. This complexity marks the interplay between health, intellectual property and trade policies. Can such interplay be managed so as to enhance the discovery, development and delivery of medical technologies for better health services and outcomes? This question is at the heart of a joint study on promoting access to medical technologies and innovation recently launched by the World Health Organization (WHO), the World Intellectual Property Organization (WIPO) and the World Trade Organization (WTO).1

Excerpt

The study, conceived as a coherent, systematic and transparent information base for the capacity-building programmes run by the three agencies, is a practical compendium of useful policy information that showcases the value of multilateral interagency cooperation…
http://www.who.int/bulletin/volumes/91/5/13-122705/en/index.html

Entry and exit screening of airline travellers during the A(H1N1) 2009 pandemic: a retrospective evaluation

Kamran Khan, Rose Eckhardt, John S Brownstein, Raza Naqvi, Wei Hu, David Kossowsky, David Scales, Julien Arino, Michael MacDonald, Jun Wang, Jennifer Sears & Martin S Cetron

Objective
To evaluate the screening measures that would have been required to assess all travellers at risk of transporting A(H1N1)pdm09 out of Mexico by air at the start of the 2009 pandemic.
Methods
Data from flight itineraries for travellers who flew from Mexico were used to estimate the number of international airports where health screening measures would have been needed, and the number of travellers who would have had to be screened, to assess all air travellers who could have transported the H1N1 influenza virus out of Mexico during the initial stages of the 2009 A(H1N1) pandemic.
Findings

Exit screening at 36 airports in Mexico, or entry screening of travellers arriving on direct flights from Mexico at 82 airports in 26 other countries, would have resulted in the assessment of all air travellers at risk of transporting A(H1N1)pdm09 out of Mexico at the start of the pandemic. Entry screening of 116 travellers arriving from Mexico by direct or connecting flights would have been necessary for every one traveller at risk of transporting A(H1N1)pdm09. Screening at just eight airports would have resulted in the assessment of 90% of all air travellers at risk of transporting A(H1N1)pdm09 out of Mexico in the early stages of the pandemic.
Conclusion
During the earliest stages of the A(H1N1) pandemic, most public health benefits potentially attainable through the screening of air travellers could have been achieved by screening travellers at only eight airports.
http://www.who.int/bulletin/volumes/91/5/12-114777/en/index.html

Clinical Therapeutics
Vol 35 | No. 4 | April 2013 | Pages 351-540
http://www.clinicaltherapeutics.com/current
[Reviewed earlier]

Cost Effectiveness and Resource Allocation
(Accessed 4 May 2013)
http://www.resource-allocation.com/
[No new relevant content]

Current Opinion in Infectious Diseases.
June 2013 - Volume 26 - Issue 3 pp: v-v,213-293
http://journals.lww.com/co-infectiousdiseases/pages/currenttoc.aspx
[Reviewed earlier]

Development in Practice
Volume 23, Issue 2, 2013
http://www.tandfonline.com/toc/cdip20/current
[Reviewed earlier; No relevant content]

Emerging Infectious Diseases
Volume 19, Number 5—May 2013
http://www.cdc.gov/ncidod/EID/index.htm
[No relevant content]

Eurosurveillance
Volume 18, Issue 18, 02 May 2013
http://www.eurosurveillance.org/Public/Articles/Archives.aspx?PublicationId=11678
[No relevant content]

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

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

Globalization and Health
[Accessed 4 May 2013]
http://www.globalizationandhealth.com/
[No new relevant content]

Health Affairs
April 2013; Volume 32, Issue 4
http://content.healthaffairs.org/content/current
Theme: The 'Triple Aim' Goes Global
[Reviewed earlier; No specific relevant content on vaccines/immunization]

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

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

Health Policy and Planning
Volume 28 Issue 3 May 2013
http://heapol.oxfordjournals.org/content/current
Has Global Fund support for civil society advocacy in the Former Soviet Union established meaningful engagement or 'a lot of jabber about nothing'?
Andrew Harmer1,*, Neil Spicer2, Julia Aleshkina3, Daryna Bogdan4, Ketevan Chkhatarashvili5, Gulgun Murzalieva3, Natia Rukhadze5, Arnol Samiev6 and Gill Walt2
+ Author Affiliations

1Centre for Research on Health and Social Care Management (CERGAS), Bocconi University, Milan, Italy, 2London School of Hygiene and Tropical Medicine, London, UK, 3Health Policy Analysis Center, Bishkek, Kyrgyzstan, 4Kyiv-Mohyla Academy, Kyiv, Ukraine, 5Curatio International Foundation, Tbilisi, Georgia and 6Independent consultant, Bishkek, Kyrgyzstan
↵*Corresponding author. CERGAS, Bocconi University, via Roentgen, 1 – 20136 Milano, Italy. E-mail: andrew.harmer@unibocconi.it
Accepted April 20, 2012.
Abstract
Although civil society advocacy for health issues such as HIV transmission through injecting drug use is higher on the global health agenda than previously, its impact on national policy reform has been limited. In this paper we seek to understand why this is the case through an examination of civil society advocacy efforts to reform HIV/AIDS and drugs-related policies and their implementation in three former Soviet Union countries. In-depth semi-structured interviews were conducted in Georgia, Kyrgyzstan and Ukraine by national researchers with representatives from a sample of 49 civil society organizations (CSOs) and 22 national key informants. We found that Global Fund support resulted in the professionalization of CSOs, which increased confidence from government and increased CSO influence on policies relating to HIV/AIDS and illicit drugs. Interviewees also reported that the amount of funding for advocacy from the Global Fund was insufficient, indirect and often interrupted. CSOs were often in competition for Global Fund support, which caused resentment and limited collective action, further weakening capacity for effective advocacy.
http://heapol.oxfordjournals.org/content/28/3/299.abstract

Human Vaccines & Immunotherapeutics (formerly Human Vaccines)
Volume 9, Issue 5 May 2013
http://www.landesbioscience.com/journals/vaccines/toc/volume/9/issue/5/
Commentary
Tolerogenic vaccines for Multiple sclerosis
Volume 9, Issue 5 May 2013
http://dx.doi.org/10.4161/hv.23685
Keywords: T lymphocytes, autoimmune disease, experimental autoimmune encephalomyelitis, immune, multiple sclerosis, myelin, neuroantigen, therapy, tolerance, vaccine
Authors: Mark D. Mannie and Alan D. Curtis, II
Abstract:
Tolerogenic vaccines represent a new class of vaccine designed to re-establish immunological tolerance, restore immune homeostasis, and thereby reverse autoimmune disease. Tolerogenic vaccines induce long-term, antigen-specific, inhibitory memory that blocks pathogenic T cell responses via loss of effector T cells and gain of regulatory T cell function. Substantial advances have been realized in the generation of tolerogenic vaccines that inhibit experimental autoimmune encephalomyelitis in a preclinical setting, and these vaccines may be a prequel of the tolerogenic vaccines that may have therapeutic benefit in Multiple Sclerosis. The purpose here is to provide a snapshot of the current concepts and future prospects of tolerogenic vaccination for Multiple Sclerosis, along with the central challenges to clinical application.
http://www.landesbioscience.com/journals/vaccines/article/23685/
Research Paper
Economic analysis of the first 20 y of universal hepatitis B vaccination program in Italy: An a posteriori evaluation and forecast of future benefits

Sara Boccalini, Cristina Taddei, Vega Ceccherini, Angela Bechini, Miriam Levi, Dario Bartolozzi and Paolo Bonanni

Abstract:
Italy was one of the first countries in the world to introduce a routine vaccination program against HBV for newborns and 12-y-old children. From a clinical point of view, such strategy was clearly successful. The objective of our study was to verify whether, at 20 y from its implementation, hepatitis B universal vaccination had positive effects also from an economic point of view. An a posteriori analysis evaluated the impact that the hepatitis B immunization program had up to the present day. The implementation of vaccination brought an extensive reduction of the burden of hepatitis B-related diseases in the Italian population. As a consequence, the past and future savings due to clinical costs avoided are particularly high. We obtained a return on investment nearly equal to 1 from the National Health Service perspective, and a benefit-to-cost ratio slightly less than 1 for the Societal perspective, considering only the first 20 y from the start of the program. In the longer-time horizon, ROI and BCR values were positive (2.78 and 2.46, respectively). The break-even point was already achieved few years ago for the NHS and for the Society, and since then more and more money is progressively saved. The implementation of universal hepatitis B vaccination was very favorable during the first 20 y of adoption, and further benefits will be increasingly evident in the future. The hepatitis B vaccination program in Italy is a clear example of the great impact that universal immunization is able to provide in the medium-long-term when health care authorities are so wise as to invest in prevention.

http://www.landesbioscience.com/journals/vaccines/article/23827/

Short Report

Improving adherence rates to a cocooning program: A pilot experience in Italy

Downloads and Tools

Volume 9, Issue 5 May 2013
http://dx.doi.org/10.4161/hv.23795

Vairo, Pasquale Piscopo and Federico Marchetti

Abstract:
Cocoon is defined as a strategy to reduce the risk for transmission of pertussis to newborn infants by vaccinating household members including parents and siblings. Programmatic challenges make implementation of cocooning program complex. At the local health care unit "ASL Napoli 1 Centro," a one-year pilot project to evaluate the newborn contacts adherence to a cocoon strategy was started on May, 1st 2011. Healthcare providers (HCPs) offered for free a dTpa booster dose to newborns parents (mothers were immunized after delivery) and household contacts. Until June 30th, overall only 7 dTpa booster doses out of 261 newborns (2.6%) were administered for cocooning. Then, an improvement in communication strategy to the families was introduced by preparing specific information leaflets, increasing the HCPs devoted to the cocoon, and focusing the interaction with families during the visiting time at the maternity ward. Overall, 601 out of 762 (78,8%) contacted new mothers received dTpa booster. Cocoon high acceptance rates could be reached providing that proper communication tools and enough skilled HCPs were engaged in the interaction with the families. This report is, to our knowledge, the first to document successful implementation of pertussis cocooning in an Italian setting.

http://www.landesbioscience.com/journals/vaccines/article/23795/

Research Paper

Using risk to target HPV vaccines in high-risk, low-resource organizations

Volume 9, Issue 5 May 2013

http://dx.doi.org/10.4161/hv.23456
Stephanie L. Small, Carolyn M. Sampselle, Kristy K. Martyn and Amanda F. Dempsey
Abstract:
Organizations in developed countries with limited financial resources may find it difficult to determine whether it is preferable to use these resources for HPV vaccination, management of HPV-related diseases, or a "hybrid" strategy, such as vaccinating only the highest risk individuals. We determined the organizational costs and clinical impacts of three different organizational approaches to female HPV vaccination in a low-resource setting, including vaccinating everyone, vaccinating no one, or vaccinating only those considered high-risk. To determine patients at highest risk, HPV risk factors were identified using information routinely gathered at the annual preventive maintenance visit. The three vaccination strategies were then compared using a decision tree analysis. The three strategies demonstrated very little difference in cost. However, the least expensive strategy was to vaccinate no one. In contrast, the strategy with the best clinical outcomes was for the organization to vaccinate everyone. Organizations with limited resources must decide how to best allocate these funds to provide the greatest clinical benefits. This study showed little difference in costs but improved clinical outcomes when using the universal HPV vaccination strategy. Thus, the improvement in clinical outcomes when vaccinating everyone may be worth the relatively small increase in cost of vaccinating everyone.
http://www.landesbioscience.com/journals/vaccines/article/23456/

Commentary

Vaccination against herpes zoster in developed countries: State of the evidence
Mélanie Drolet, Michael N. Oxman, Myron J. Levin, Kenneth E. Schmader, Robert W. Johnson, David Patrick, James A. Mansi and Marc Brisson
Abstract:
Although progress has been made in the treatment of herpes zoster (HZ) and postherpetic neuralgia (PHN), available therapeutic options are only partially effective. Given evidence that a live-attenuated varicella-zoster-virus vaccine is effective at reducing the incidence of HZ, PHN and the burden of illness, policymakers and clinicians are being asked to make recommendations regarding the use of the zoster vaccine. In this report, we summarize the evidence regarding the: (1) burden of illness; (2) vaccine efficacy and safety; and (3) cost-effectiveness of vaccination, to assist evidence-based policy making and guide clinicians in their recommendations. First, there is general agreement that the overall burden of illness associated with HZ and PHN is substantial. Second, the safety and efficacy of the zoster vaccine at reducing the burden of illness due to HZ and the incidence of PHN have been clearly demonstrated in large placebo-controlled trials. However, uncertainty remains about the vaccine's duration of protection. Third, vaccination against HZ is likely to be cost-effective when the vaccine is given at approximately 65 y of age, if vaccine duration is longer than 10 y.
http://www.landesbioscience.com/journals/vaccines/article/23491/

Infectious Diseases of Poverty
http://www.idpjournal.com/content
[Accessed 4 May 2013]

Research Article

Inferring the potential risks of H7N9 infection by spatiotemporally characterizing bird migration and poultry distribution in eastern China
Benyun Shi, Shang Xia, Guo-Jing Yang, Xiao-Nong Zhou and Jiming Liu

Infectious Diseases of Poverty 2013, 2:8 doi:10.1186/2049-9957-2-8
Published: 3 May 2013
Abstract (provisional)
Background
In view of the rapid geographic spread and the increased number of confirmed cases of novel influenza A(H7N9) virus infections in eastern China, we developed a diffusion model to spatiotemporally characterize the impacts of bird migration and poultry distribution on the geographic spread of H7N9 infection.
Methods
The three types of infection risks were estimated for 12 weeks, from February 4 to April 28, 2013, including (i) the risk caused by bird migration, (ii) the risk caused by poultry distribution, and (iii) the integrated risk caused by both bird migration and poultry distribution. To achieve this, we first developed a method for estimating the likelihood of bird migration based on available environmental and meteorological data. Then, we adopted a computational mobility model to estimate poultry distribution based on annual poultry production and consumption of each province/municipality. Finally, the spatiotemporal risk maps were created based on the integrated impact of both bird migration and poultry distribution.
Results
In the study of risk estimation caused by bird migration, the likelihood matrix was estimated based on the 7-day temperature, from February 4 to April 28, 2013. It was found the estimated migrant birds mainly appear in the southeastern provinces of Zhejiang, Shanghai and Jiangsu during Weeks 1 to 4, and Week 6, followed by appear in central eastern provinces of Shandong, Hebei, Beijing, and Tianjin during Weeks 7 to 9, and finally appear in northeastern provinces of Liaoning, Jilin, and Heilongjiang during Weeks 10 to 12. In the study of risk estimation caused by bird migration, the likelihood matrix was estimated based on the 7-day temperature, from February 4 to April 28, 2013. It was found the estimated migrant birds mainly appear in the southeastern provinces of Zhejiang, Shanghai and Jiangsu during Weeks 1 to 4, and Week 6, followed by appearing in central eastern provinces of Shandong, Hebei, Beijing, and Tianjin during Weeks 7 to 9, and finally appear in northeastern provinces of Liaoning, Jilin, and Heilongjiang during Weeks 10 to 12.
In the study of risk caused by poultry distribution, poultry distribution matrix was created to show the probability of poultry distribution. Although the fact that the majority of the initial infections are reported in Shanghai and Jiangsu province, the relative risk of H7N9 infection estimated based on the poultry distribution model predicted that Jiangsu may have a slightly higher likelihood of H7N9 infection than that in Zhejiang and Shanghai, if we only take the probability of poultry distribution into consideration.
In the study of integrated risk caused by both bird migration and poultry distribution, the higher risk in southeastern provinces occurred during the first 8 weeks, and that in central eastern provinces appeared during Weeks 8 to 12, and that in northeastern provinces since Week 12. Therefore, it is necessary to regulate the poultry markets as long as the poultry-to-poultry transmission is not so well understood.
Conclusion
With reference to the reported infection cases, the demonstrated risk mapping results will provide guidance in active surveillance and control of human H7N9 infections by taking intensive intervention in poultry markets.
http://www.idpjournal.com/content/2/1/8/abstract

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. 6 | June 2013
http://www.ijidonline.com/current
Focus on Bacterial Resistance
[No relevant content]

JAMA
May 01, 2013, Vol 309, No. 17
http://jama.ama-assn.org/current.dtl
Viewpoint | May 01, 2013
The Transformation of Child Health Research: Innovation, Market Failure, and the Public Good
Barbara J. Stoll, MD; David K. Stevenson, MD; Paul H. Wise, MD, MPH
JAMA. 2013;309(17):1779-1780. doi:10.1001/jama.2013.3257.
Excerpt
Despite a remarkable record of accomplishments, the pediatric research community faces mounting evidence that the nature and scope of current research are inadequate. The Editorial "Challenges to Excellence in Child Health Research," by Zylke et al,1 casts this paradox in sharp relief by summarizing a series of articles suggesting that the quality and number of pediatric research studies lag behind research focused on adults. For measurable and sustainable gains in child health, pediatric research should be informed by the changing epidemiology of childhood illness, the need to monitor both survival and long-term outcomes, and the increasing recognition of pediatric origins of adult chronic disease and social determinants of health. Recent advances in genetics, imaging, and bioinformatics provide new venues for productive research. Moreover, the status of children in society must be elevated and the political will necessary to provide adequate financial support for research enhanced.
http://jama.jamanetwork.com/article.aspx?articleid=1682950
Editorial | May 01, 2013
Contrasts in Child Health Care and Child Health Research
Jody W. Zylke, MD; Frederick P. Rivara, MD, MPH; Howard Bauchner, MD
JAMA. 2013;309(17):1834-1836. doi:10.1001/jama.2013.4284.
http://jama.jamanetwork.com/article.aspx?articleid=1682921
Original Contribution | May 01, 2013
Immunogenicity of 2 Doses of HPV Vaccine in Younger Adolescents vs 3 Doses in Young Women: A Randomized Clinical Trial
Simon R. M. Dobson, MD; Shelly McNeil, MD; Marc Dionne, MD; Meena Dawar, MD; Gina Ogilvie, MD; Mel Krajden, MD, PhD; Chantal Sauvageau, MD; David W. Scheifele, MD; Tobias R. Kollmann, MD, PhD; Scott A. Halperin, MD; Joanne M. Langley, MD; Julie A. Bettinger, PhD; Joel Singer, PhD; Deborah Money, MD; Dianne Miller, MD; Monika Naus, MD; Fawziah Marra, PharmD; Eric Young, MD

[+] Author Affiliations
JAMA. 2013;309(17):1793-1802. doi:10.1001/jama.2013.1625.
ABSTRACT

Importance

Global use of human papillomavirus (HPV) vaccines to prevent cervical cancer is impeded by cost. A 2-dose schedule for girls may be possible.

Objective

To determine whether mean antibody levels to HPV-16 and HPV-18 among girls receiving 2 doses was noninferior to women receiving 3 doses.

Design, Setting, and Patients

Randomized, phase 3, postlicensure, multicenter, age-stratified, noninferiority immunogenicity study of 830 Canadian females from August 2007 through February 2011. Follow-up blood samples were provided by 675 participants (81%).

Intervention

Girls (9-13 years) were randomized 1:1 to receive 3 doses of quadrivalent HPV vaccine at 0, 2, and 6 months (n = 261) or 2 doses at 0 and 6 months (n = 259). Young women (16-26 years) received 3 doses at 0, 2, and 6 months (n = 310). Antibody levels were measured at 0, 7, 18, 24, and 36 months.

Main Outcomes and Measures

Primary outcome was noninferiority (95% CI, lower bound >0.5) of geometric mean titer (GMT) ratios for HPV-16 and HPV-18 for girls (2 doses) compared with young women (3 doses) 1 month after last dose. Secondary outcomes were noninferiority of GMT ratios of girls receiving 2 vs 3 doses of vaccine; and durability of noninferiority to 36 months.

Results

The GMT ratios were noninferior for girls (2 doses) to women (3 doses): 2.07 (95% CI, 1.62-2.65) for HPV-16 and 1.76 (95% CI, 1.41-2.19) for HPV-18. Girls (3 doses) had GMT responses 1 month after last vaccination for HPV-16 of 7736 milli-Merck units per mL (mMU/mL) (95% CI, 6651-8999) and HPV-18 of 1730 mMU/mL (95% CI, 1512-1980). The GMT ratios were noninferior for girls (2 doses) to girls (3 doses): 0.95 (95% CI, 0.73-1.23) for HPV-16 and 0.68 (95% CI, 0.54-0.85) for HPV-18. The GMT ratios for girls (2 doses) to women (3 doses) remained noninferior for all genotypes to 36 months. Antibody responses in girls were noninferior after 2 doses vs 3 doses for all 4 vaccine genotypes at month 7, but not for HPV-18 by month 24 or HPV-6 by month 36.

Conclusions and Relevance

Among girls who received 2 doses of HPV vaccine 6 months apart, responses to HPV-16 and HPV-18 one month after the last dose were noninferior to those among young women who received 3 doses of the vaccine within 6 months. Because of the loss of noninferiority to some genotypes at 24 to 36 months in girls given 2 doses vs 3 doses, more data on the duration of protection are needed before reduced-dose schedules can be recommended.

Trial Registration clinicaltrials.gov Identifier: NCT00501137
http://jama.jamanetwork.com/article.aspx?articleid=1682939

Editorial | May 01, 2013

HPV Vaccination Too Soon for 2 Doses?

Jessica A. Kahn, MD, MPH; David I. Bernstein, MD, MA
JAMA. 2013;309(17):1832-1834. doi:10.1001/jama.2013.4147.
Excerpt

Cervical cancer is the second most common cancer among women globally, according to age-standardized incidence rates.1 Approximately 530 000 women are diagnosed with cervical

cancer and 275 000 die of the disease every year; 88% of deaths occur in developing regions of the world.1 Human papillomavirus (HPV) infection is a well-established cause of cervical cancer as well as other anogenital and oropharyngeal cancers; therefore, prophylactic HPV vaccines have the potential to substantially reduce the incidence of cervical cancer and other HPV-associated diseases.2 Three-dose schedules of the bivalent vaccine (HPV-16 and -18) and the quadrivalent vaccine (HPV-6, -11, -16, and -18) have been shown to be highly efficacious in preventing persistent infection with HPV-16 and -18, which cause approximately 70% of cervical cancers, as well as precancerous lesions associated with these types.3- 5 The quadrivalent vaccine has also been shown to prevent anogenital warts associated with HPV-6 and -11.3,5
http://jama.jamanetwork.com/article.aspx?articleid=1682919

JAMA Pediatrics
May 2013, Vol 167, No. 5
http://archpedi.jamanetwork.com/issue.aspx
[No relevant content]

Journal of Community Health
Volume 38, Issue 3, June 2013
http://link.springer.com/journal/10900/38/3/page/1
Health Information During the H1N1 Influenza Pandemic: Did the Amount Received Influence Infection Prevention Behaviors?
Bella Etingen, Sherri L. LaVela, Scott Miskevics, Barry Goldstein
Abstract
In the wake of uncertainty due to the H1N1 influenza pandemic, amount and sources of H1N1-related information were examined in a cohort at high-risk for respiratory complications. Factors associated with adequate amount of information were identified. A cross-sectional mailed survey was conducted in 2010 with veterans with spinal cord injuries and disorders. Bivariate comparisons assessed adequate H1N1-realted information versus not enough and too much. Multivariate regression identified variables associated with receipt of adequate information. A greater proportion who received adequate versus not enough information received H1N1 vaccination (61.87 vs. 48.49 %, $p < 0.0001$). A greater proportion who received adequate versus too much information received seasonal vaccination (84.90 vs. 71.02 %, $p < 0.0001$) and H1N1 vaccination (61.87 vs. 42.45 %, $p < 0.0001$). Variables associated with greater odds of receiving adequate information included being white, a college graduate, and having VA health professionals as their primary information source. Receiving adequate information was associated with lower odds of staying home with flu/flu-like symptoms, and higher odds of H1N1 vaccine receipt and wearing a facemask. Receiving appropriate amounts of information from valid sources may impact adherence to infection control recommendations during pandemics. Findings can be used to facilitate efforts ensuring information is received by high-risk populations.
http://link.springer.com/article/10.1007/s10900-012-9647-8

Journal of Health Organization and Management
Volume 27 issue 2 - Published: 2013
http://www.emeraldinsight.com/journals.htm?issn=1477-7266&show=latest

[Reviewed earlier; No relevant content]

Journal of Infectious Diseases
Volume 207 Issue 11 June 1, 2013
http://www.journals.uchicago.edu/toc/jid/current
[Reviewed earlier]

Journal of Global Infectious Diseases (JGID)
January-March 2013 Volume 5 | Issue 1 Page Nos. 1-36
http://www.jgid.org/currentissue.asp?sabs=n
[Reviewed earlier; No relevant content]

Journal of Medical Ethics
May 2013, Volume 39, Issue 5
http://jme.bmj.com/content/current
[No relevant content]

Journal of Medical Microbiology
May 2013; 62 (Pt 5)
http://jmm.sgmjournals.org/content/current
[No relevant content]

Journal of the Pediatric Infectious Diseases Society (JPIDS)
Volume 2 Issue 1 March 2013
http://jpids.oxfordjournals.org/content/current
[Reviewed earlier]

Journal of Pediatrics
May 2013, Vol. 162, No. 5
http://www.jpeds.com/
[Reviewed earlier]

Journal of Virology
May 2013, volume 87, issue 9
http://jvi.asm.org/content/current
[Reviewed earlier]

The Lancet
May 04, 2013 Volume 381 Number 9877 p1511 - 1596
http://www.thelancet.com/journals/lancet/issue/current

Comment

Linking child survival and child development for health, equity, and sustainable development

Margaret Chan

Preview

Considerable progress has been made over the past decade towards Millennium Development Goal 4. The number of deaths among children younger than 5 years has declined from 12 million in 1990 to 6·9 million in 2011.1 But do the surviving children have an equal chance to realise their human potential, achieve social justice, and contribute to sustainable development? The global community has an obligation to ensure that all children develop to full capacity, not only as a human right but also for equitable prosperity and sustainable progress of societies.

http://www.thelancet.com/journals/lancet/article/PIIS0140-6736%2813%2960944-7/fulltext

Comment

Poliomyelitis in Pakistan: time for the Muslim world to step in

Qanta A Ahmed, Sania Nishtar, Ziad A Memish

Preview

Global poliomyelitis eradication is almost within reach—this disease persists only in Nigeria, Afghanistan, and Pakistan, which are countries with substantial Muslim populations.1 Today this ambitious goal is threatened, partly by misinformed and politicised religious views that not only seed suspicion about polio vaccination but recently led to murder of polio workers. In Pakistan, 16 workers engaged in a polio vaccination campaign have been killed since December, 2012, halting vaccination in many parts of the country and placing Pakistan's 2012 gains in poliomyelitis eradication at risk.

The Lancet Infectious Diseases

May 2013 Volume 13 Number 5 p377 - 464

http://www.thelancet.com/journals/laninf/issue/current

[Reviewed earlier]

Medical Decision Making (MDM)

May 2013; 33 (4)

http://mdm.sagepub.com/content/current

The Milbank Quarterly

A Multidisciplinary Journal of Population Health and Health Policy

March 2013 Volume 91, Issue 1 Pages 1–218

http://onlinelibrary.wiley.com/doi/10.1111/milq.2013.91.issue-1/issuetoc

[Reviewed earlier]

Medical Surveillance Monthly Report (MSMR)

March 2013 - Volume 20 / Number 03

http://www.afhsc.mil/viewMSMR?file=2013/v20_n02.pdf#Page=01

[No relevant content]

Nature

Volume 497 Number 7447 pp5-152 2 May 2013
http://www.nature.com/nature/current_issue.html
[No relevant content]

Nature Immunology
May 2013, Volume 14 No 5 pp415-522
http://www.nature.com/ni/journal/v14/n5/index.html
[Reviewed earlier]

Nature Medicine
April 2013, Volume 19 No 4 pp379-505
http://www.nature.com/nm/journal/v19/n4/index.html
[Reviewed earlier]

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

New England Journal of Medicine
May 2, 2013 Vol. 368 No. 18
http://www.nejm.org/toc/nejm/medical-journal
[No relevant content]

OMICS: A Journal of Integrative Biology
April 2013, 17(4)
http://online.liebertpub.com/toc/omi/17/4
[No relevant content]

Revista Panamericana de Salud Pública/Pan American Journal of Public Health (RPSP/PAJPH)
March 2013 Vol. 33, No. 3
http://www.paho.org/journal/index.php?option=com_content&task=view&id=122&Itemid=222
[Reviewed earlier]

The Pediatric Infectious Disease Journal
May 2013 - Volume 32 - Issue 5 pp: A15-A16,431-583,e182-e229
http://journals.lww.com/pidj/pages/currenttoc.aspx
[Reviewed earlier; No relevant content]

Pediatrics
May 2013, VOLUME 131 / ISSUE 5
http://pediatrics.aappublications.org/current.shtml

Article

Long-term Effectiveness of Varicella Vaccine: A 14-Year, Prospective Cohort Study

Roger Baxter, MDa, Paula Ray, MPHa, Trung N. Tran, MD, PhDb, Steve Black, MDc, Henry R. Shinefield, MDd, Paul M. Coplan, ScD, MBAe, Edwin Lewis, MPHa, Bruce Fireman, MAa, and Patricia Saddier, MD, PhDb

Abstract

BACKGROUND: Varicella vaccine was licensed in the United States in 1995 for individuals ≥12 months of age. A second dose was recommended in the United States in June 2006. Varicella incidence and vaccine effectiveness were assessed in a 14-year prospective study conducted at Kaiser Permanente Northern California.

METHODS: A total of 7585 children vaccinated with varicella vaccine in their second year of life in 1995 were followed up prospectively for breakthrough varicella and herpes zoster (HZ) through 2009. A total of 2826 of these children received a second dose in 2006–2009. Incidences of varicella and HZ were estimated and compared with prevaccine era rates.

RESULTS: In this cohort of vaccinated children, the average incidence of varicella was 15.9 per 1000 person-years, nine- to tenfold lower than in the prevaccine era. Vaccine effectiveness at the end of the study period was 90%, with no indication of waning over time. Most cases of varicella were mild and occurred early after vaccination. No child developed varicella after a second dose. HZ cases were mild, and rates were lower in the cohort of vaccinated children than in unvaccinated children during the prevaccine era (relative risk: 0.61 [95% confidence interval: 0.43–0.89]).

CONCLUSIONS: This study confirmed that varicella vaccine is effective at preventing chicken pox, with no waning noted over a 14-year period. One dose provided excellent protection against moderate to severe disease, and most cases occurred shortly after the cohort was vaccinated. The study data also suggest that varicella vaccination may reduce the risks of HZ in vaccinated children.

http://pediatrics.aappublications.org/content/131/5/e1389.abstract

Article

The Impact of Social Networks on Parents' Vaccination Decisions

Emily K. Brunson, MPH, PhD
Department of Anthropology, Texas State University, San Marcos, Texas

Abstract

BACKGROUND AND OBJECTIVE: Parents decide whether their children are vaccinated, but they rarely reach these decisions on their own. Instead parents are influenced by their social networks, broadly defined as the people and sources they go to for information, direction, and advice. This study used social network analysis to formally examine parents' social networks (people networks and source networks) related to their vaccination decision-making. In addition to providing descriptions of typical networks of parents who conform to the recommended vaccination schedule (conformers) and those who do not (nonconformers), this study also quantified the effect of network variables on parents' vaccination choices.

METHODS: This study took place in King County, Washington. Participation was limited to US-born, first-time parents with children aged ≤18 months. Data were collected via an online survey. Logistic regression was used to analyze the resulting data.

RESULTS: One hundred twenty-six conformers and 70 nonconformers completed the survey. Although people networks were reported by 95% of parents in both groups, nonconformers

were significantly more likely to report source networks (100% vs 80%, P < .001). Model comparisons of parent, people, and source network characteristics indicated that people network variables were better predictors of parents' vaccination choices than parents' own characteristics or the characteristics of their source networks. In fact, the variable most predictive of parents' vaccination decisions was the percent of parents' people networks recommending nonconformity.
CONCLUSIONS: These results strongly suggest that social networks, and particularly parents' people networks, play an important role in parents' vaccination decision-making.
http://pediatrics.aappublications.org/content/131/5/e1397.abstract

Pharmaceutics
Volume 5, Issue 1 (March 2013)
http://www.mdpi.com/1999-4923/5/1
[Reviewed earlier]

Pharmacoeconomics
Volume 31, Issue 4, April 2013
http://link.springer.com/journal/40273/31/4/page/1
[Reviewed earlier]

PLoS One
[Accessed 4 May 2013]
http://www.plosone.org/
[No new relevant content]

PLoS Medicine
(Accessed 4 May 2013)
http://www.plosmedicine.org/
Editorial
Focusing the Spotlight on Lack of Access to Health Information
The PLoS Medicine Editors
http://www.plosmedicine.org/article/info%3Adoi%2F10.1371%2Fjournal.pmed.1001438
Published: April 30, 2013

Funding: The authors are each paid a salary by the Public Library of Science, and they wrote this editorial during their salaried time.
Competing interests: The authors' individual competing interests are at http://www.plosmedicine.org/static/editorsInterests.action. PLOS is funded partly through manuscript publication charges, but the PLOS Medicine Editors are paid a fixed salary (their salary is not linked to the number of papers published in the journal). PLOS is a HIFA 2015 financial supporting organisation and has actively contributed to HIFA 2015 webinars.

"In the 21st century, knowledge is the key element to improving health. In the same way that people need clean, clear water, they have a right to clean, clear knowledge" [1]. This is how Sir Muir Gray, Director of the UK's National Health Service (NHS) National Knowledge Service, describes the importance of health knowledge. Knowledge underpins every medical advance, every intervention, and every clinical decision. However, access to reliable health information for even the most basic health needs remains elusive for much of the world's population.

Access to reliable health information remains a problem even in settings where clean water is taken for granted. Despite the recognition of the importance of evidence-based health information, the problems of publication bias [2], missing trial data [3], influence from commercial organizations [4], and distortion of study implications [5] are well known and continue to haunt medical science and the information available to health workers and the general public. In addition to these challenges to the medical evidence, the process of translating available knowledge into appropriate action is a complex and ongoing endeavor [6].

It is in the poorest settings where basic health information may prove most valuable. For example, postpartum hemorrhage (PPH) is a leading cause of maternal death worldwide; yet despite being recommended by the WHO and other professional bodies, active management of the third stage of labor to prevent PPH was found to be correctly used in only 0.5% to 32% of observed deliveries in seven developing countries [7]. Worryingly, six of the seven countries were found to have multiple guidelines and conflicting recommendations for active management of the third stage of labor [7]. While lack of reliable information may well be a symptom of a weak health system in the most extreme cases, it can be the result of misinformation. It has been estimated that more than 330,000 lives were lost between 2000 and 2005 because the then-government of South Africa questioned whether HIV was the cause of AIDS, and they failed to implement a feasible and timely antiretroviral treatment program [8].

Medical journals remain a key part of the knowledge translation process, almost exclusively dealing with the final stages of knowledge creation (primary research), distillation (systematic reviews and guidelines), and commentary (editorializing and contextualizing by experts) via peer review and finally dissemination. Although making research openly available to be both read and reused is an essential step toward a vision of wider access to healthcare knowledge, disseminating information on its own is not enough to ensure evidence is used in decision-making [9]. In many settings it is access to secondary reference and educational materials based on the best available evidence that is severely lacking yet probably more crucial for clinical practice than the most recent observational study or clinical trial findings.

Organizations such as the WHO among others play an important role in providing reliable healthcare information. However, in low- and middle-income countries, such information is often not available where it is needed, or the information is not usable because it is in the wrong language or because it does not match the context or level of education of the healthcare provider.

In a recently published white paper, Neil Pakenham-Walsh and Molly Land argue that, because access to health information is a key determinant to the human right to the highest attainable standard of health, governments have a legal responsibility under international human rights law to provide access to healthcare information to citizens and health workers [10]. That is not to say that governments are required to generate this information, but they must ensure its availability and an enabling policy environment that does not hinder access to health information. States should provide access to information about health services and health policy so that a country's citizens can access those services when needed and the educational health needs of both the general population and health workers are met.

If governments are legally obliged to enable access to reliable health information, what can be done to ensure that they do so? It is unlikely that governments will be held legally responsible for not ensuring that health information is available to their citizens and health workers, and a legal approach would be inappropriate in most cases. Furthermore, it is unrealistic to expect governments to react quickly to calls for change. However, by placing access to reliable health information into the broader human rights framework it may be possible to benefit from the momentum already generated by human rights organizations.

One model that has been effectively used by organizations such as Human Rights Watch (www.hrw.org) and Amnesty International (www.amnesty.org) to promote change is holding up a light to practices of governments, raising awareness of where they fail to meet their responsibilities. Healthcare Information for All by 2015 (HIFA2015) has taken this approach by setting up a campaign called HIFA-Watch (http://www.hifa2015.org/hifa-watch/). The campaign aims to highlight positive examples, such as recent legislation in Pakistan to ensure that commercial companies cannot claim that formula milk is a substitute for breast milk [11], as well as negative examples of government practices, such as countries that do not legally require pictorial warnings on tobacco products [12]. Of course, a webpage alone will not ensure change, and research into the practices of individual governments and sustained momentum are needed in order for the campaign to be a success.

The challenge of improving healthcare information in countries with meager resources will require more than just highlighting insufficiencies. Access to health information is a key component of a strong health system, but to be effective it requires evaluation and synthesis of evidence, translation of evidence into educational materials, and implementation and dissemination. Health information is one key component of the complex task of improving weak health systems, along with cooperation, political will, and funding.

Acknowledgments

The authors thank Neil Pakenham-Walsh for a helpful discussion and comments on a draft of this manuscript.

Author Contributions

Wrote the first draft of the manuscript: PS. Contributed to the writing of the manuscript: VB JC LC AR PS EV MW. ICMJE criteria for authorship read and met: VB JC LC AR PS EV MW. Agree with manuscript results and conclusions: VB JC LC AR PS EV MW.

References

1. NHS Choices (2011) What is behind the headlines? Available: http://www.nhs.uk/news/Pages/about-behind-the-headlines.aspx.Accessed 17 March 2013.

2. Melander H, Ahlqvist-Rastad J, Meijer G, Beermann B (2003) Evidence b(i)ased medicine—selective reporting from studies sponsored by pharmaceutical industry: review of studies in new drug applications. BMJ 326: 1171–1173. doi: 10.1136/bmj.326.7400.1171. Find this article online

3. Lee K, Bacchetti P, Sim I (2008) Publication of clinical trials supporting successful new drug applications: A literature analysis. PLoS Med 5: e191 doi:10.1371/journal.pmed.0050191. . doi: 10.1371/journal.pmed.0050191.

4. Sismondo S (2007) Ghost management: How much of the medical literature is shaped behind the scenes by the pharmaceutical industry? PLoS Med 4: e286 doi:10.1371/journal.pmed.0040286. . doi: 10.1371/journal.pmed.0040286.

5. Yavchitz A, Boutron I, Bafeta A, Marroun I, Charles P, et al. (2012) Misrepresentation of randomized controlled trials in press releases and news coverage: A cohort study. PLoS Med 9: e1001308 doi:10.1371/journal.pmed.1001308. . doi: 10.1371/journal.pmed.1001308.

6. Kitson A, Straus SE (2010) The knowledge-to-action cycle: identifying the gaps. CMAJ 182: E73–E77 doi:10.1503/cmaj.081231. . doi: 10.1503/cmaj.081231.
7. Stanton C, Armbruster D, Knight R, Ariawan I, Gbangbade S, et al. (2009) Use of active management of the third stage of labour in seven developing countries. Bull World Health Organ 87: 207–215 doi:10.2471/BLT.08.052597. . doi: 10.2471/BLT.08.052597.
8. Chigwedere P, Seage GR 3rd, Gruskin S, Lee TH, Essex M (2008) Estimating the lost benefits of antiretroviral drug use in South Africa. J Acquir Immune Defic Syndr 49: 410–415. doi: 10.1097/QAI.0b013e31818a6cd5. Find this article online
9. Straus SE, Tetroe J, Graham I (2009) Defining knowledge translation. CMAJ 181: 165–168. doi: 10.1503/cmaj.081229. Find this article online
10. New York Law School (2012) Access to health information under international human rights law. White paper series 11/12 #01. Available: http://www.nyls.edu/user_files/1/2/23/144/1345/Access%20to%20Health%20Information%20White%20Paper.pdf. Accessed 17 March 2013..
11. Murtaza A (2013) PAKISTAN: Important legislation to restrict infant formula milk manufactures. Available: http://www.humanrights.asia/opinions/columns/AHRC-ETC-010-2013. Accessed 20 March 2013.
12. Cunningham R (2010) Cigarette package warning size and use of pictures: International summary. Available: http://www.tobaccolabels.ca/labelima/healthwarn. Accessed 20 March 2013.

PLoS Neglected Tropical Diseases
April 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 4 May 2013)
http://www.pnas.org/content/early/recent
[No new relevant content]

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

Qualitative Health Research
June 2013; 23 (6)
http://qhr.sagepub.com/content/current
Special Issue: Responses to Illness
[No relevant content]

Risk Analysis
April 2013 Volume 33, Issue 4 Pages 505–749
http://onlinelibrary.wiley.com/doi/10.1111/risa.2013.33.issue-4/issuetoc
Special Issue Theme: Poliovirus Eradication
[Reviewed earlier]

Science
3 May 2013 vol 340, issue 6132, pages 517-652
http://www.sciencemag.org/current.dtl
[No relevant content]

Science Translational Medicine
1 May 2013 vol 5, issue 183
http://stm.sciencemag.org/content/current
[No relevant content]

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

Vaccine
Volume 31, Issue 20, Pages 2417-2480 (7 May 2013
http://www.sciencedirect.com/science/journal/0264410X
[No new relevant content]

Vaccine: Development and Therapy
(Accessed 4 May 2013)
http://www.dovepress.com/vaccine-development-and-therapy-journal
[No new relevant content]

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

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

WHO Preferred Product Characteristics for Malaria Vaccines: Bridging Vaccine R&D with Public Health

V Moorthy - SAGE, 11 Apr 2013

Excerpt

Updated Vision

Safe and effective vaccines against Plasmodium falciparum and Plasmodium vivax that prevent transmission, disease and death to enable malaria eradication.

Updated Strategic Goals

By 2030, license vaccines targeting Plasmodium falciparum and Plasmodium vivax and encompassing the following two goals, for use by the international public health community:

- Malaria vaccines with a protective efficacy of at least 70-80 % against clinical malaria, suitable for administration to appropriate at risk groups in malaria-endemic areas.
- Malaria vaccines that reduce transmission of the parasite and thereby substantially reduce the incidence of human malaria infection. This will enable elimination in multiple settings.

Price discrimination and bargaining power in the global vaccine market

[PDF] 2013

Linda Li

Professor David Ridley, Faculty Advisor

Honors Thesis submitted in partial fulfillment of the requirements for Graduation with Distinction in Economics in Trinity College of Duke University

Abstract

Since the 1980s, the market structure of vaccines has become increasingly oligopolistic, and in some cases, monopolistic. Alongside these supply trends, we see the emergence and growth of group procurement schemes on the demand side of the market. National governments and international organizations procure vaccines on behalf of end users. Two such organizations include the UNICEF Supply Division and the PAHO EPI Revolving Fund, for which participation is based on income or geography. Consistent with one of the main goals of group procurement, these groups obtain price discounts on vaccines relative to the private sector. This paper seeks to disentangle two possible explanations for this observed price dispersion using vaccine price data over the years 2002-2012 from UNICEF, PAHO, and the U.S. The two explanations are that of price discrimination and bargaining power. Using proxy variables in a fixed effects model, I find that price discrimination does have a significant impact on price discount. I also find support for a bargaining power effect, however, with less certainty, and the existence of supply constraints. These findings have important policy implications for national governments, as well as procurement groups.

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
26 April 2013
Inside Story
The fight for global immunisation
Can funding keep pace with the will to vaccinate every child worldwide?
Excerpt
It is universally recognised as one of the most successful and cost effective health programmes in the world. Immunising children against a range of diseases that can cause serious illness, disability or death.
The World Health Organization (WHO) estimates that immunisation prevents up to three million deaths every year, but it says an estimated 22 million children worldwide are missing out on basic vaccines.
And the children's charity UNICEF says 4,000 children will die every day and many more will fall ill from diseases that can be prevented from a simple vaccination…
(TV interviews of Kate Elder, Adel Mahmoud)
http://www.aljazeera.com/programmes/insidestory/2013/04/201342682033272868.html

The Atlantic
http://www.theatlantic.com/magazine/
Accessed 4 May 2013
[No new, unique, relevant content]

BBC
http://www.bbc.co.uk/
Accessed 4 May 2013
2 May 2013 Last updated at 22:15 ET
'Manipulation' of vaccination fears
By Dr Seth Berkley CEO of the GAVI Alliance
Most parents who opt-out of vaccinations are being guided by "irrational fears" that are a luxury of living in the developed world, a leading world health expert says.
In this week's Scrubbing Up, Dr Seth Berkley, CEO of the GAVI Alliance - which provides children in developing countries with access to vaccines - says there is a real danger such fears will trickle down into the developing world where lives are even more vulnerable….
http://www.bbc.co.uk/news/health-22384788

Brookings
http://www.brookings.edu/
Accessed 4 May 2013
[No new, unique, relevant content]

Economist
http://www.economist.com/
Accessed 4 May 2013
[No new, unique, relevant content]

Financial Times
http://www.ft.com
Accessed 4 May 2013
May 2, 2013 7:01 pm
Prevention is better than cure when it comes to health scares
By Ben Goldacre
The media and scientific institutions can help counter vaccine panics
[Measles outbreak in Swansea, Wales]

Forbes
http://www.forbes.com/
Accessed 4 May 2013
[No new, unique, relevant content]

Foreign Affairs
http://www.foreignaffairs.com/
Accessed 4 May 2013
[No new, unique, relevant content]

Foreign Policy
http://www.foreignpolicy.com/
Accessed 4 May 2013
[No new, unique, relevant content]

The Guardian
http://www.guardiannews.com/
Accessed 4 May 2013
[No new, unique, relevant content]

The Huffington Post
http://www.huffingtonpost.com/
Accessed 4 May 2013
[No new, unique, relevant content]

Le Monde
http://www.lemonde.fr/
Accessed 4 May 2013
[No new, unique, relevant content]

New Yorker
http://www.newyorker.com/
Accessed 4 May 2013
[No new, unique, relevant content]

NPR/National Public Radio [U.S.]
Public Health
Accessed 4 May 2013
[No new, unique, relevant content]

New York Times
http://www.nytimes.com/
Accessed 4 May 2013
It's the Economy
Is It Crazy to Think We Can Eradicate Poverty?
By ANNIE LOWREY
Published: April 30, 2013
At a news conference during the spring meetings of the International Monetary Fund and the World Bank in late April, Jim Yong Kim held up a piece of paper with the year "2030" scribbled on it in pen. "This is it," said Kim, the genial American physician who took over as president of the World Bank last summer. "This is the global target to end poverty."…
http://www.nytimes.com/2013/05/05/magazine/is-it-crazy-to-think-we-can-eradicate-poverty.html?_r=1&

Reuters
http://www.reuters.com/
Accessed 4 May 2013
[No new, unique, relevant content]

Wall Street Journal
http://online.wsj.com/home-page
Accessed 4 May 2013
May 1, 2013, 8:50 PM ET
Glaxo Mined Online Parent Discussion Boards For Vaccine Worries
The U.K. pharmaceutical company used text analytics to analyze public discussion boards on BabyCenter.com and WhattoExpect.com, to learn what factors motivate parents to either go ahead or delay vaccinating their children for diseases like measles and mumps, said Dominic Hein, executive director of the company unit that plans new vaccines. The two month project, conducted last year, collected only anonymized excerpts and topics from posts, and no user identities, the company said.
The study concluded that parents often had a lack of "comfort" with the safety of shots, and were unconvinced that they needed to vaccinate their kids against diseases like measles and mumps. The text analytics software allowed Glaxo to gather the themes of thousands of posts into topical clusters like "safety," "timing" and "comfort" and sentiments, like "happiness" and "unhappiness," giving the company a broader, more candid view than what parents might express through an official survey or focus group…
http://blogs.wsj.com/cio/2013/05/01/glaxo-mined-online-parent-discussion-boards-for-vaccine-worries/

Washington Post
http://www.washingtonpost.com/
Accessed 4 May 2013

[No new, unique, relevant content]

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

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

* * * *

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

* * * *