Vaccines and Global Health: The Week in Review
1 April 2017
Center for Vaccine Ethics & Policy (CVEP)

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

*Vaccines and Global Health: The Week in Review is also **posted in pdf form** and as a set of blog posts at https://centerforvaccineethicsandpolicy.net. This blog allows full-text searching of over 8,000 entries.*

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

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Milestones :: Perspectives :: Featured Journal Content

2017 CANADA GAIRDNER AWARDS RECOGNIZE BASIC AND TRANSFORMATIVE RESEARCH IN CANADA AND INTERNATIONALLY

TORONTO, ON (March 28, 2017) - The Gairdner Foundation is pleased to announce the 2017 Canada Gairdner Award laureates, recognizing some of the most significant medical discoveries from around the world. The Awards carry an honorarium of $100,000 for each of the seven awards and will be presented at a Gala in Toronto on October 26, 2017.

[Among the laureates:]

Dr. Rino Rappuoli

Chief Scientist and Head External R&D at GSK Vaccines, Siena, Italy

Awarded "For pioneering the genomic approach, known as reverse vaccinology, used to develop a vaccine against meningococcus B which has saved many lives worldwide"

The work:

Dr. Rappuoli is a pioneer in the world of vaccines and has introduced several novel scientific concepts. First, he introduced the concept that bacterial toxins can be detoxified by manipulation of their genes (genetic detoxification, 1987). Next, the concept that microbes are better studied in the context of the cells they interact with (cellular microbiology, 1996), and then the use of genomes to develop new vaccines (reverse vaccinology, 2000). In the process of reverse vaccinology, the entire genomic sequence of a pathogen is screened using bioinformatics tools to help determine which genes code for which proteins, against which vaccines can be developed.

The impact:

Dr. Rappuoli also worked on several molecules which became part of licensed vaccines. He characterized a molecule, CRM197, that today is the most widely used carrier for vaccines against Haemophilus influenzae, meningococcus and pneumococcus. Later he developed a vaccine against pertussis containing genetically detoxified pertussis toxin and the first conjugate vaccine against meningococcus C that eliminated the disease in the United Kingdom in 2000. His work on reverse vaccinology led to the licensure of the first meningococcus B vaccine approved in Europe and Canada in 2013 and USA in 2015.

NFID Honors Three Infectious Disease Heroes and Issues Call for 2018 Nominations

Bethesda, MD (March 30, 2017) - The National Foundation for Infectious Diseases (NFID) will celebrate three infectious disease heroes during the 2017 annual awards dinner on the evening of May 18 and is calling for nominations for 2018 awards – a landmark year that commemorates the 45th year anniversary of NFID.

This year, NFID will honor:

:: **Peter Piot, MD, PhD**, as recipient of the 2017 Jimmy and Rosalynn Carter Humanitarian Award in recognition of his lifetime public health contributions and leadership, including his role in the first isolation of the Ebola virus and outbreak investigation, his early AIDS research in Africa, his leadership of the global AIDS response and his service as head of the London School of Hygiene & Tropical Medicine.

:: **Myron M. Levine, MD**, who will receive the 2017 Maxwell Finland Award for Scientific Achievement for his unparalleled accomplishments in public health to identify solutions to major sources of disease in the developing world including cholera, typhoid and Shigella dysentery.

:: **Thomas M. File, Jr., MD**, who will receive the 2017 John P. Utz Leadership Award in recognition of his commitment as a national leader in infectious diseases and an exceptional teacher, clinician, scientist and prolific contributor to the infectious disease literature, including his work on the diagnosis, prevention and treatment of pneumonia…

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Featured Journal Content

Vaccine
Volume 35, Issue 17, Pages 2101-2278 (19 April 2017)
http://www.sciencedirect.com/science/journal/0264410X/35/17
Building Next Generation Immunization Supply Chains
Edited by Bruce Y. Lee, Benjamin Schreiber and Raja Rao
Twenty-nine articles organized under thematic areas:
:: Making the Case: how immunization supply chains impact vaccine coverage
:: Challenges
:: Toward next generation supply chains: Successful pilots
:: Toward next generation supply chains: Promising ideas and innovations
:: Toward next generation supply chains: Upstream solutions

Global Immunization Impact Constrained by Outdated Vaccine Delivery Systems, Researchers Say

Press release | March 30, 2017 *[Issued by PATH and WHO]*
New research finds persistent stockouts and exposure to freezing are among problems in vaccine supply chains designed during an era with fewer childhood immunizations

SEATTLE, 30 March 2017—Outdated vaccine supply and distribution systems are delaying and limiting the impact that vaccines have on safeguarding people's health, according to the editors of a collection of new articles published today in Vaccine journal. Among the challenges of ensuring a consistent supply of potent vaccines identified by researchers: one in every three countries in the world experiences at least one stockout of at least one vaccine for at least one month; and 19 to 38 percent of vaccines worldwide are accidentally exposed to freezing temperatures, potentially compromising the potency of those vaccines.

Some countries are implementing changes and adopting new technologies like solar "direct drive" refrigerators and redesigning delivery systems. These changes are helping increase vaccine availability and coverage, even in more remote areas, according to the editors.

The 29 articles are part of a special supplement to Vaccine coordinated by the global health nonprofit, PATH—with guest editors from the Bill & Melinda Gates Foundation, UNICEF, and the Johns Hopkins Bloomberg School of Public Health—that identify challenges and point to solutions that countries can employ to modernize their immunization supply chains.

need them most," says Steve Davis, president and CEO of PATH. "We need to apply the same ambitious investments to vaccine delivery as we apply to vaccine development."

According to the World Health Organization (WHO), vaccines prevent an estimated 2 to 3 million deaths every year, but an additional 1.5 million deaths could be avoided if global immunization coverage improves. In 2015, an estimated 19.4 million infants worldwide did not receive routine immunizations.

"We must act to close the global immunization gap," says Dr. Matshidiso Moeti, WHO regional director for Africa. "Achieving the Global Vaccine Action Plan goal of universal access to immunization by 2020 would benefit the health of millions of Africans."
Immunization supply chains—the network of staff, equipment, vehicles, and data needed to get vaccines safely from the manufacturer to the people who need them—were first developed in the late 1970s with the establishment of the Expanded Program on Immunization.

Since 2010, however, immunization services have expanded with additional vaccines. Immunization programs are storing and transporting four times the volume of vaccines, according to WHO, and health care workers are administering up to six times as many doses per person, including to older children, adolescents, and adults.

"Too many children still lack access to lifesaving vaccines because of outdated and inefficient supply chains." says Dr. Seth Berkley, CEO of Gavi, the Vaccine Alliance. "Unless we drive change and deliver comprehensive improvements now, countries won't have the systems in place to protect the next generation of children, particularly the most vulnerable."…

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Emergencies

WHO Grade 3 Emergencies [to 1 April 2017]

Iraq -

Iraq: Within hours of opening its doors, Athbah trauma field hospital treats casualties from west Mosul

29 March 2017 - Mosul, Iraq -- With medical capacities to treat severely wounded people significantly reduced due to conflict and coupled with the increased trend of traumatic injuries among civilians, the World Health Organization, the Federal Ministry of Health and Ninewa Department of Health has opened a trauma field hospital in Athba.

South Sudan -

WHO's famine response plan in South Sudan focuses on working with partners to prevent spread of diseases amongst people weakened by food insecurity

Juba, 30 March 2017 - The World Health Organization (WHO) continues to scale up its response to reduce preventable deaths and diseases, and provide health services in famine-affected areas of South Sudan. In February 2017, famine was declared in the former Unity State, where 100 000 people face starvation and another 1 million are on the brink of famine.

WHO joins partners at South Sudan's National Health Summit to build a resilient health system and attain greater access to health services

Juba, 27 March 2017— The third National Health Summit for South Sudan opened today with some 500 participants coming together to consider the challenges and opportunities of delivering health in South Sudan, and to establish a clear vision for health in the years ahead.

The Syrian Arab Republic -

Addressing the silent impact of war: WHO expands mental health care services across Syria 27 March 2017

Nigeria - *No new announcements identified*
Yemen - *No new announcements identified*

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WHO Grade 2 Emergencies [to 1 April 2017]
Cameroon - *No new announcements identified.*
Central African Republic - *No new announcements identified.*
Democratic Republic of the Congo - *No new announcements identified.*
Ethiopia - *No new announcements identified.*
Libya - *No new announcements identified.*
Myanmar - *No new announcements identified.*
Niger - *No new announcements identified.*
Ukraine - *No new announcements identified.*

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UN OCHA – L3 Emergencies
The UN and its humanitarian partners are currently responding to three 'L3' emergencies. This is the global humanitarian system's classification for the response to the most severe, large-scale humanitarian crises.
Iraq
:: Iraq: Mosul Humanitarian Response Situation Report No. 26 (20-26 March 2017) [EN/AR/KU]

Syria
:: 31 Mar 2017 Syria: US $3.4 billion needed to provide life-saving assistance for 13 million people
:: 30 Mar 2017 Statement to the Security Council on the humanitarian situation in Syria

Yemen –
:: Humanitarian coordinator in Yemen, Jamie McGoldrick, statement on the humanitarian situation in Yemen two years into the escalation of the conflict [EN/AR]
Sana'a, 28 March 2017
Two years of relentless conflict in Yemen have devastated the lives of millions of people. An alarming 18.8 million of them- almost two thirds of the population- need some kind of humanitarian or protection support. This man-made disaster has been brutal on civilians. Some seven million women, children, and men could risk famine in 2017.
:: Under-Secretary General for Humanitarian Affairs and Emergency Relief Coordinator, Stephen O'Brien - Statement on Yemen 26 Mar 2017

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POLIO [to 1 April 2017]
Public Health Emergency of International Concern (PHEIC)

Polio this week as of 29 March 2017
:: This week, synchronized polio campaigns were conducted across 13 countries in west and central Africa including Nigeria, Chad, Cameroon, Guinea, Mali, and Niger. Over 190 000 vaccinators aimed to immunize more than 116 million children over the course of the campaign.

Country Updates [Selected Excerpts]
New cases or environmental samples reported across the monitored country/region settings: Afghanistan, Pakistan, Nigeria, Lake Chad Basin. Guinea and West Africa, and Lao People's Democratic Republic have been removed from the monitored geographies list.
Afghanistan
:: One new wild poliovirus type 1 (WPV1) case was reported in the past week, from Kunduz province, with onset of paralysis on 21 February. It is the most recent case in the country, and brings the total number of WPV1 cases for 2017 to three. For 2016, the case count remains 13.
:: One new WPV1 environmental positive sample was reported in the past week, from Kandahar, collected on 26 January.
Pakistan
:: Two new WPV1 positive environmental samples were reported in the past week, from Killa Abdullah and Pishin, Balochistan, collected on 1 and 2 March, respectively.

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Editor's Note:
We will cluster these recent emergencies as below and continue to monitor the WHO webpages for updates and key developments.

Zika virus [to 1 April 2017]
http://www.who.int/emergencies/zika-virus/en/
WHO podcast episodes 2017
Zika virus has been reported in dozens of countries around the world from 2015 onwards. WHO's experience over 2016 has shown that Zika virus and the associated neurological complications represent a long-term public health challenge.
In a series of 5 podcasts on Zika, we bring you stories of *Evidence in action.*

Yellow Fever [to 1 April 2017]
http://www.who.int/emergencies/yellow-fever/en/
March 28, 2017
Brazil Works to Control Yellow Fever Outbreak, with PAHO/WHO support
Washington, D.C., (PAHO/WHO)—Brazil is carrying out mass vaccination campaigns for yellow fever in the states of Minas Gerais, Espirito Santo, Sao Paulo, Rio de Janeiro and Bahia, while strengthening surveillance and case management throughout the country since an outbreak of sylvatic yellow fever began in January. More than 18.8 million doses of vaccine have been distributed, in addition to routine immunization efforts.
The Pan American Health Organization/World Health Organization (PAHO/WHO) is providing specialized technical cooperation to the federal authorities managing the outbreak and has mobilized more than 15 experts, including experts from the Global Outbreak Alert and Response Network (GOARN), in disease control, surveillance, virology, immunization and other fields to

collaborate with health officials in the affected states. These experts have been operating with field teams in surveillance, response, and control operations in Minas Gerais, Espirito Santo and Rio de Janeiro States…

Disease outbreak news
Yellow fever – Suriname
28 March 2017
On 9 March 2017, the National Institute for Public Health and the Environment (RIVM) in the Netherlands reported a case of yellow fever to WHO. The patient is a Dutch adult female traveller who visited Suriname from the middle of February until early March 2017. She was not vaccinated against yellow fever…

EBOLA/EVD [to 1 April 2017]
http://www.who.int/ebola/en/
No new digest content identified for this edition.

MERS-CoV [to 1 April 2017]
http://www.who.int/emergencies/mers-cov/en/
No new digest content identified for this edition.

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Meningococcal disease – Nigeria
Disease outbreak news - 24 March 2017
As of 19 March 2017 (epidemiological week 11), a total of 1407 suspected cases of meningitis and 211 deaths (case fatality rate: 15%) have been reported from 40 local government areas (LGAs) in five states of Nigeria since December 2016. Zamfara, Katsina and Sokoto account for 89% of these cases. Twenty-six LGAs from all five states reported 361 cases in epidemiological week 11 alone. Twenty-two wards in 15 LGAs have crossed the epidemic threshold. Three of these LGAs share borders with Niger. NmC is the predominant serotype in this outbreak.

The most affected age group is 5 to 14 year olds and they are responsible for about half of reported cases. Both sexes are almost equally affected.

Public health response
WHO and partners including National Primary Health Care Development Authority, UNICEF, Nigeria Field Epidemiology and Laboratory Training Program, eHealth Africa, Médecins Sans Frontières, Rotary International, Nigeria Centre for Disease Control, and Gavi, the Vaccine Alliance (Gavi) are providing support to this outbreak.*

The following measures are being implemented:
:: Nigeria Centre for Disease Control, with support from the WHO, is taking the overall lead in coordinating the response at the national level.
:: Daily coordination meetings are being held at the state and LGA levels.
:: The rapid response teams are conducting active case finding, performing lumbar puncture of suspect cases and training local staff on case management.

:: Case management is being carried out at the public health centres at the LGA level.
:: 19,600 persons were vaccinated with the meningococcal ACWY vaccine in Gora ward in Zamfara state.
:: 500,000 doses of Gavi-supported meningococcal AC PS vaccines and injection supplies were approved by the International Coordination Group (ICG) for use in Zamfara State and arrived on 27 March 2017.**
;; Katsina state is preparing an ICG request for submission.

WHO risk assessment
The successful roll-out of MenA conjugate vaccine has resulted to the decreasing trend of meningitis A, however, other meningococcal serogroups are still causing epidemics. The most recent outbreak that has been reported was in Togo due to Neisseria meningitidis serogroup W (see Disease Outbreak News as published by WHO on 23 February 2017).

WHO advice
The outbreak response consists of appropriate case management with reactive mass vaccination of populations. Promptness of the reactive campaign is essential, ideally within four weeks of crossing the epidemic threshold.
WHO does not recommend any travel or trade restriction to Nigeria based on the current information available on this outbreak.

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WHO & Regional Offices [to 1 April 2017]

WHO launches global effort to halve medication-related errors in 5 years
29 March 2017 – WHO today launched a global initiative to reduce severe, avoidable medication-associated harm in all countries by 50% over the next 5 years.

Marshall Islands triumphs against lymphatic filariasis
1 April 2017 – The country is the latest to join six others in WHO's Western Pacific Region: Cambodia, China, Cook Islands, Niue, the Republic of Korea and Vanuatu are already validated for eliminating the disease as a public health problem. In 2016, WHO validated the Maldives and Sri Lanka – both from the South East-Asia Region – for having achieved elimination. Lymphatic filariasis is a mosquito-borne disease that damages the lymphatic system, leading to severe disfigurement, pain and disability.

Depression tops list of causes of ill health
31 March 2017 – WHO's World Health Day campaign, the high point of which is 7 April, is themed "Depression: let's talk". The campaign's aim is to have more people with depression, in all countries, both seek and get help. According to the latest WHO estimates, more than 300 million people are now living with depression, an increase of more than 18% between 2005 and 2015.

Highlights

WHO's famine response in South Sudan focuses on working with partners to prevent spread of diseases

April 2017 – WHO continues to scale up its response to reduce preventable deaths and diseases, and provide health services in famine-affected areas of South Sudan. Currently 100,000 people in the region face starvation and another 1 million are on the brink of famine.

France to recommend colour-coded nutrition labelling system

March 2017 – France has decided to recommend an easy to read labelling system that uses colour codes to guide consumers on the nutritional value of food products. The Nutri-Score system can help limit the consumption of foods high in energy, saturated fats, sugar or salt.

10th meeting of the Strategic and Technical Advisory Group for Neglected Tropical Diseases

March 2017 – The meeting, taking place on 29–30 March 2017, will cover issues on Global Vector Control Response, examination of dossiers requesting the potential inclusion of diseases as NTDs, gaps in disease elimination, eradication of dracunculiasis, integrated data management, and the 2nd WHO NTD Global Partners' Meeting.

Global Health Sector Strategy on Viral Hepatitis

March 2017 – Worldwide, approximately 240 million people have chronic hepatitis B infection and 80 million people have chronic hepatitis C infection. A dedicated portal has been developed for the first ever Global Health Sector Strategy on Viral Hepatitis 2016–2021.

Weekly Epidemiological Record, 31 March 2017, vol. 92, 13 (pp. 145–164)

:: Epidemic meningitis control in countries of the African meningitis belt, 2016
:: Ensuring the timely supply and management of medicines for preventive chemotherapy against neglected tropical diseases

IVB Announcements

:: **STI vaccine consultant pdf, 224kb** 28 March 2017
Deadline for application: 21 April 2017

:: WHO Regional Offices

Selected Press Releases, Announcements

WHO African Region AFRO

No new digest content identified.

WHO Region of the Americas PAHO

:: Brazil Works to Control Yellow Fever Outbreak, with PAHO/WHO support (03/28/2017)

WHO South-East Asia Region SEARO

:: Saima Wazed Hossain is WHO Champion for Autism in South-East Asia Region 1 April 2017

WHO European Region EURO

:: Helping Syrians cope with depression 30-03-2017

:: Feeling low in adolescence 29-03-2017
:: New report offers in-depth analysis of health situation in Republic of Moldova 27-03-2017
:: Measles outbreaks across Europe threaten progress towards elimination
Copenhagen, 28 March 2017
Over 500 measles cases were reported for January 2017 in the WHO European Region. Measles continues to spread within and among European countries, with the potential to cause large outbreaks wherever immunization coverage has dropped below the necessary threshold of 95%.
"With steady progress towards elimination over the past 2 years, it is of particular concern that measles cases are climbing in Europe," says Dr Zsuzsanna Jakab, WHO Regional Director for Europe. "Today's travel patterns put no person or country beyond the reach of the measles virus. Outbreaks will continue in Europe, as elsewhere, until every country reaches the level of immunization needed to fully protect their populations."
Two-thirds of the Region's 53 countries have interrupted endemic transmission of measles; however, 14 remain endemic, according to the Regional Verification Commission for Measles and Rubella Elimination (RVC)…
"I urge all endemic countries to take urgent measures to stop transmission of measles within their borders, and all countries that have already achieved this to keep up their guard and sustain high immunization coverage. Together we must make sure that the hard-earned progress made towards regional elimination is not lost," continues Dr Jakab…

WHO Eastern Mediterranean Region EMRO
:: Within hours of opening, Athbah trauma field hospital treats casualties from west Mosul
Mosul, Iraq 29 March 2017

WHO Western Pacific Region
:: Republic of the Marshall Islands eliminates lymphatic filariasis as a public health problem
MANILA, 30 March 2017

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CDC/ACIP [to 1 April 2017]
http://www.cdc.gov/media/index.html

MMWR Weekly March 31, 2017 / No. 12
[Excerpts]
:: Zika Virus Transmission — Region of the Americas, May 15, 2015–December 15, 2016
:: Yellow Fever Outbreak — Kongo Central Province, Democratic Republic of the Congo, August 2016
:: Evaluation of Automated Molecular Testing Rollout for Tuberculosis Diagnosis Using Routinely Collected Surveillance Data — Uganda, 2012–2015
:: Notes from the Field: Adverse Events Following a Mass Yellow Fever Immunization Campaign — Kongo Central Province, Democratic Republic of the Congo, September 2016

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Announcements

NIH [to 1 April 2017]
http://www.nih.gov/news-events/news-releases
March 31, 2017
Phase 2 Zika vaccine trial begins in U.S., Central and South America
— Study will evaluate NIH's experimental DNA vaccine.
Vaccinations have begun in a multi-site Phase 2/2b clinical trial testing an experimental DNA vaccine designed to protect against disease caused by Zika infection. The vaccine was developed by government scientists at the National Institute of Allergy and Infectious Diseases (NIAID), part of the National Institutes of Health (NIH). NIAID is leading the trial, which aims to enroll at least 2,490 healthy participants in areas of confirmed or potential active mosquito-transmitted Zika infection, including the continental United States and Puerto Rico, Brazil, Peru, Costa Rica, Panama and Mexico. The two-part trial, called VRC 705, further evaluates the vaccine's safety and ability to stimulate an immune response in participants, and assesses the optimal dose for administration. It also will attempt to determine if the vaccine can effectively prevent disease caused by Zika infection…
"We are pleased to have advanced rapidly one of NIAID's experimental Zika vaccines into this next stage of testing in volunteers. We expect this study will yield valuable insight into the vaccine's safety and ability to prevent disease caused by Zika infection," said NIAID Director Anthony S. Fauci, M.D. "A safe and effective Zika vaccine is urgently needed to prevent the often-devastating birth defects that can result from Zika virus infection during pregnancy. Evidence also is accumulating that Zika can cause a variety of health problems in adults as well. This trial marks a significant milestone in our efforts to develop countermeasures for a pandemic in progress."…

Antimicrobial Resistance Diagnostic Challenge selects 10 semifinalists in first phase of competition
March 27, 2017 — Each will receive $50,000 to develop prototypes of diagnostics to improve detection of drug resistant bacteria.

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GHIT Fund [to 1 April 2017]
https://www.ghitfund.org/
GHIT was set up in 2012 with the aim of developing new tools to tackle infectious diseases that devastate the world's poorest people. Other funders include six Japanese pharmaceutical companies, the Japanese Government and the Bill & Melinda Gates Foundation.
Press Room
GHIT Fund Invests in Late-stage Trial for Child-friendly "Snail Fever" Medicines—One of the Most Debilitating and Widespread Parasitic Diseases in Africa
2017.03.30
Completion of Phase 3 trial for treatment of "Snail Fever" (aka schistosomiasis) is final step before regulatory and WHO submission; GHIT also announces new investment in novel malaria vaccine and therapeutic for dengue, continued support for innovative tools to tackle malaria and neglected tropical diseases
TOKYO, JAPAN (March 30, 2017)—The Global Health Innovative Technology Fund (GHIT Fund), a unique Japanese public-private partnership formed to battle infectious diseases around

the globe, today announced 11 new investments totaling US$23 million* that could help deliver a range of new innovative therapies for a host of debilitating conditions.

This latest round of targeted support includes funding for a Phase 3 clinical trial testing a pediatric formulation of a drug considered the gold standard for treating schistosomiasis, a water-borne parasitic disease linked to an assortment of acute and chronic health problems. Young children are most at risk, but the existing drug is so bitter and hard to swallow that kids often go untreated, leading to serious lifelong health and learning problems.

This clinical trial is one of the most advanced partnerships invested by the GHIT Fund, an organization that combines Japan's historic leadership in global health and innovation with groundbreaking research from across the globe. The GHIT Fund also is making new investments in two malaria vaccine candidates, while accelerating work to find new drug treatments for malaria, dengue, Chagas disease, cryptosporidiosis and leishmaniasis.

"We're reaching an exciting phase where GHIT's approach to partnerships and drug and vaccine development is starting to produce tangible progress towards product deployment that could eventually lead to revolutionary breakthroughs," said BT Slingsby, MD, PhD, MPH, who is CEO of the GHIT Fund. "We knew that combining Japan's wealth of biomedical research talent and pharmaceutical capabilities with leading infectious disease experts near and far was likely to be a winning combination, and that's been validated by the progress we are seeing across a rich diversity of projects."…

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Hilleman Laboratories [to 1 April 2017]
http://www.hillemanlabs.org/
29/03/2017

Hilleman Laboratories signs MoU with NICED, ICMR to develop Shigella Vaccine

March 29th, 2017, New Delhi: Hilleman Laboratories, a joint-venture partnership between MSD and Wellcome Trust, today, signed a Memorandum of Understanding (MoU) with National Institute of Cholera and Enteric Diseases (NICED), an ICMR organization for further development and commercialization of the Shigella vaccines and other enteric vaccines for diarrheal diseases. This agreement was signed as an effort of Hilleman's mission to make affordable vaccines for the developing world population…

Addressing the press conference at the signing-in, Dr. Davinder Gill said, "Shigella is the second most fatal organism after Rotavirus that causes severe diarrhea in children with no approved vaccine available at this time. We are pleased at this opportunity to collaborate with NICED and jointly develop Shigella vaccine for a disease whose basic pathology is not yet properly understood. NICED comes with a variety of strengths in research and developing strategies for treatment, prevention and control of enteric infections. This will also be a strategic shift for Hilleman, since till now, our focus has been to optimise existing vaccines and address the gaps in low resource settings. We will now endeavour to develop an entirely new line of treatment and we look forward to jointly abating this fatal disease which threatens the Nation's health".

Dr. Soumya Swaminathan added by saying, "This is a step in a new direction. India has immense potential in clinical research, drug and device manufacturing and we would like to see more of these types of partnerships to happen within the country to realize the 'Make in India' dream. We are keen that ICMR becomes more collaborative and partners with organizations in this direction and mutually expand capacities through cross-functional partnerships"…

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Wellcome Trust [to 1 April 2017]
https://wellcome.ac.uk/news
Published: 30 March 2017
We are pledging £125m to tackle drug-resistant infections
Wellcome is committing £125 million over five years to tackle drug-resistant infections through a transatlantic partnership, CARB-X

CARB-X, which stands for Combating Antibiotic Resistant Bacteria Biopharmaceutical Accelerator, has named its first projects to receive funding – three in the UK and eight in the US.

Drug-resistant infections kill 700,000 people a year globally. Within a generation, the death toll could be 10 million. The last new antibiotic class to be approved was discovered in 1984.

Tim Jinks, Wellcome's Head of Drug Resistant Infections, said: "Antibiotic discovery is absolutely vital if we are to tackle drug-resistant infections, but it has been long neglected.

"New medicines and diagnosistic tools are needed so patients get better treatment. Through CARB-X, we're filling the current void of support for early research."

The CARB-X projects

UK biotech's Oppilotech (opens in a new tab) and Redx (opens in a new tab) are among three projects working on potential new classes of antibiotics.

The funded projects also include four products offering new approaches to targeting and killing bacteria.

And University of Edinburgh is leading the Proteus (opens in a new tab) project to develop a new imaging tool that can rapidly diagnose bacterial lung infections and help prevent unnecessary use of antibiotics in intensive care units.

All 11 projects are targeting the most resistant and deadly Gram-negative bacteria.

Kevin Outterson, Executive Director of CARB-X, said: "The projects in the new CARB-X portfolio are in the early stages of research, and there is always a high risk of failure. But if successful, these projects hold exciting potential in the fight against the deadliest antibiotic-resistant bacteria."

The aim is that over five years CARB-X funding will result in 20 new antibiotic products, and that at least two will progress to clinical trials for a medicine safe for human use.
Wellcome is calling on other governments and organisations to support CARB-X…

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Global Fund [to 1 April 2017]
http://www.theglobalfund.org/en/news/?topic=&type=NEWS;&country=
News
Global Fund Names Sylvie Billion Interim Chief Financial Officer
31 March 2017

The Global Fund to Fight Aids, Tuberculosis and Malaria today announced that Sylvie Billion, Deputy CFO and Treasurer, will become Interim Chief Financial Officer.

News
Japan Secures US$313 million Contribution to the Global Fund
27 March 2017

The Global Fund to Fight AIDS, Tuberculosis and Malaria welcomes the Japanese Diet's passage of the fiscal 2016 supplementary budget and the fiscal 2017 budget, which includes Japan's contribution of US$313 million to the Global Fund.

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UNAIDS [to 1 April 2017]
http://www.unaids.org/
Press release
UNAIDS welcomes David Beasley as new Executive Director of the World Food Programme

GENEVA, 31 March 2017—UNAIDS welcomes the appointment of David Beasley as the Executive Director of the World Food Programme (WFP).

"The appointment of David Beasley comes at a critical moment," said UNAIDS Executive Director Michel Sidibé. "WFP's work to achieve food security is at the heart of global efforts to break the cycle of hunger and poverty and essential to achieving the Sustainable Development Goals which include ending the AIDS epidemic."…

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PATH [to 1 April 2017]
http://www.path.org/news/index.php
Press release | March 28, 2017
Carla Sandine to oversee PATH's cross-cutting communications efforts on global health innovation and impact
Seattle-born entrepreneur sells Phoenix marketing agency to lead communications for PATH

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FDA [to 1 April 2017]
http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/default.htm
What's New for Biologics
:: March 24, 2017 Approval Letter - Prevnar 13 (PDF - 32KB)
Posted: 3/27/2017

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Industry Watch [to 1 April 2017]
:: Takeda's Dengue Vaccine Candidate Elicited Broad Immune Responses in Children and Adolescents Living in Dengue-Endemic Areas; Interim Phase 2 Analysis Published in The Lancet Infectious Diseases
- Analysis showed two doses of the vaccine candidate induced antibody responses against all four types of dengue virus in a large population of participants ages two through 17
- No safety concerns were observed, further supporting the vaccine candidate's safety profile
March 29, 2017

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AERAS [to 1 April 2017]
http://www.aeras.org/pressreleases
No new digest content identified.

BIO [to 1 April 2017]
https://www.bio.org/insights
No new digest content identified.

BMGF - Gates Foundation [to 1 April 2017]
http://www.gatesfoundation.org/Media-Center/Press-Releases
No new digest content identified.

CEPI – Coalition for Epidemic Preparedness Innovations [to 1 April 2017]
http://cepi.net/
No new digest content identified.

DCVMN [to 1 April 2017]
http://www.dcvmn.org/
No new digest content identified

EDCTP [to 1 April 2017]
http://www.edctp.org/
The European & Developing Countries Clinical Trials Partnership (EDCTP) aims to accelerate the development of new or improved drugs, vaccines, microbicides and diagnostics against HIV/AIDS, tuberculosis and malaria as well as other poverty-related and neglected infectious diseases in sub-Saharan Africa, with a focus on phase II and III clinical trials
No new digest content identified.

European Medicines Agency [to 1 April 2017]
http://www.ema.europa.eu/ema/
No new digest content identified

European Vaccine Initiative [to 1 April 2017]
http://www.euvaccine.eu/news-events
No new digest content identified.

Fondation Merieux [to 1 April 2017]
http://www.fondation-merieux.org/news
Mission: Contribute to global health by strengthening local capacities of developing countries to reduce the impact of infectious diseases on vulnerable populations.
No new digest content identified.

Gavi [to 1 April 2017]
http://www.gavi.org/library/news/press-releases/
No new digest content identified.

Human Vaccines Project [to 1 April 2017]

http://www.humanvaccinesproject.org/media/press-releases/
No new digest content identified.

IAVI – International AIDS Vaccine Initiative [to 1 April 2017]
https://www.iavi.org/
No new digest content identified.

IFPMA [to 1 April 2017]
http://www.ifpma.org/resources/news-releases/
No new digest content identified.

IVI [to 1 April 2017]
http://www.ivi.int/
No new digest content identified.

PhRMA [to 1 April 2017]
http://www.phrma.org/press-room
No new digest content identified.

Sabin Vaccine Institute [to 1 April 2017]
http://www.sabin.org/updates/pressreleases
No new digest content identified.

* * * *

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

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

Equitable Access Initiative - 2016

42 pages :: PDF -
https://www.theglobalfund.org/media/1322/eai_equitableaccessinitiative_report_en.pdf
The convening partners of the Equitable Access Initiative include: the World Health Organization; the World Bank; Gavi, The Vaccine Alliance; UNAIDS; UNICEF; UNDP; UNFPA; UNITAID; and the Global Fund, with support from the Bill & Melinda Gates Foundation and the Wellcome Trust.

Executive Summary [Excerpts]
Key Findings
The analyses find that policymaking should not rely on a single variable to inform complex health financing polices on the eligibility for and the prioritisation of investments. It is proposed that policymakers consider a more comprehensive framework for decision making that accounts

for countries' position on a health development continuum, based on the analysis of countries' needs, fiscal capacity and policies. 5

For instance, eligibility policies should not only consider the level of wealth in a society, as measured by GNI per capita, but account for health need relative to income as well as mitigate the effects of discrete thresholds that render a country ineligible for support once it passes a certain GNI per capita level. Further, in order to prioritize investments, a government's resources and policies to meet this health need should be taken into account. Finally, the analyses highlight the need to account for equity considerations, particularly within country inequity, suggesting that context-specific analyses are relevant when assessing the level and type of support to be provided.

Based on the analyses and findings of the EAI analytical work, a conceptual framework to guide policymaking in external financing for health is proposed that accounts for the following considerations:

Recommendations

:: To inform complex external health financing decisions such as eligibility and the prioritisation of investments with a multi-criteria framework that takes into account income levels and health needs, in addition to domestic capacity and policies, where relevant.

:: To inform eligibility policies by health need relative to income, and to design complimentary policies that allow for a planned gradual transition, in order to mitigate the risk of a country losing gains in health when external financing decreases rapidly in spite of significant health needs and/or limited fiscal space.2

:: To consider domestic fiscal capacity characteristics when prioritising investments and to develop policies that favour improved health outcomes and increased domestic finance.

Long-term actions

:: To consider greater investments in data collection systems towards developing a more nuanced, comprehensive framework that captures sub-national equity considerations, including the needs of key populations and vulnerable groups, through better quality and more reliable data that support the inclusion of relevant indicators.

::::::

Health Governance Capacity: Enhancing Private Sector Investment in Global Health
The Brookings Private Sector Global Health R&D Project
Darrell M. West, John Villasenor, and Jake Schneider
March 2017 :: 28 pages
PDF: https://www.brookings.edu/wp-content/uploads/2017/03/cti_20170329_health_governance_capacity.pdf

Executive Summary [Excerpt]
…In this report, we examine the quality of healthcare governance in a set of low- and middle-income countries. In particular, we look at management capacity, regulatory processes, health infrastructure, and policy conditions in sub-Saharan Africa and Asia. We argue that good governance is a foundational condition for global health investment and that it conditions the

overall environment in which both public and private sector health investment takes place. This report is the first in a series of planned publications under the Brookings Private Sector Global Health R&D Project, which was launched in fall 2016. Subsequent reports will examine funding levels, rate of return on investment, and the financial benefits of global health R&D.

To explore governance, we compile data on 25 aspects of health governance in 18 different countries. As we explain later in this report, we chose these indicators based on the research literature that outlines the measures associated with investment decisions. In particular, we focus on measures that reflect key aspects related to health management, policies, regulations, infrastructure and financing, and health systems. The countries assessed are Bangladesh, China, Democratic Republic of Congo, Ethiopia, Ghana, India, Indonesia, Kenya, Liberia, Mozambique, Nigeria, Pakistan, Philippines, Sierra Leone, South Africa, Tanzania, Uganda, and Vietnam. These places were chosen based on geographic diversity, opportunities to improve health outcomes, and having a large population.

Among the important findings of our analysis are the following:
1. Factors which can help low- and middle-income countries attract greater private investment in healthcare R&D are improving transparency, strengthening management capacity, lowering tariffs on incoming medical products to the extent that is fiscally possible, expediting regulatory reviews of new drugs, building effective health infrastructure, and increasing appropriately-targeted and efficient public spending on healthcare.

2. Of the countries in the study, Vietnam, South Africa, China, and Ghana rank the highest on aspects of overall health governance that we believe have the greatest potential to help attract private sector investment in health R&D.

3. Several countries have components of good governance that show promise in creating an attractive investment environment. For example, South Africa and Uganda have a notably effective approach to health regulations, while South Africa and China have invested significantly in health infrastructure and Vietnam has worked hard to build its health system.

4. Ghana and Liberia do well on health leadership and management capacity, while Tanzania does well on several of its health policies.

5. Nigeria, Pakistan, the Democratic Republic of Congo, and Bangladesh perform less well on key health governance metrics.

More broadly, countries require enabling policy, regulatory, and administrative mechanisms in order to encourage positive health outcomes in general and global health R&D investments in particular. If there is a strengthened capacity to make effective use of resources, governments, businesses, and non-governmental organizations will be better able to absorb new investments relevant to global health goals. Private investors will be more likely to make global health R&D investments if it is clear that the resulting vaccines, drugs, and diagnostics will pass regulatory, policy, and legal muster, and produce positive health outcomes…

* * * *

Journal Watch

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

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

American Journal of Infection Control
April 01, 2017 Volume 45, Issue 4, p341-46
http://www.ajicjournal.org/current
Major Articles

Antibiotic knowledge and self-medication practices in a developing country: A cross-sectional study
Antoun Jamhour, Ammar El-Kheir, Pascale Salameh, Pierre Abi Hanna, Hanine Mansour
p384–388
Published online: January 12, 2017

Influenza vaccination among workers—21 U.S. states, 2013
Data from 21 states using the 2013 Behavioral Risk Factor Surveillance System industry-occupation module were analyzed. Influenza vaccination coverage was reported by select industry and occupation groups, including health care personnel (HCP) and other occupational groups who may have first priority to receive influenza vaccination during a pandemic (tier 1). The t *tests were used to make comparisons between groups.*
Alissa C. O'Halloran, Peng-jun Lu, Walter W. Williams, Pamela Schumacher, Aaron Sussell, Jan Birdsey, Winifred L. Boal, Marie Haring Sweeney, Sara E. Luckhaupt, Carla L. Black, Tammy A. Santibanez
p410–416
Published in issue: April 01, 2017

Brief Reports

Despite awareness of recommendations, why do health care workers not immunize pregnant women?
Anat Gesser-Edelsburg, Yaffa Shir-Raz, Samah Hayek, Sharon Aassaraf, Lior Lowenstein
p436–439
Published online: January 4, 2017
Highlights
:: Uncertainty about vaccination safety and efficacy for pregnant women is a health issue.
:: Gap between physicians' knowledge about recommendations and implementation.
:: Some health care workers have fears and concerns about vaccine efficacy and safety.

Studies indicate uncertainty surrounding vaccination safety and efficacy for pregnant women, causing a central problem for health authorities. In this study, approximately 26% of participants do not recommend the tetanus, diphtheria, and acellular pertussis and influenza vaccines to their patients, although being aware of the health ministry recommendations. We

found significant statistical discrepancies between the knowledge about the recommendations and their actual implementation, revealing the concerns of health care workers regarding vaccine safety

American Journal of Preventive Medicine
April 2017 Volume 52, Issue 4, p417-556, e95-e122
http://www.ajpmonline.org/current
Research Articles
Parental-Reported Full Influenza Vaccination Coverage of Children in the U.S.
Yusheng Zhai, Tammy A. Santibanez, Katherine E. Kahn, Anup Srivastav
e103–e113
Published online: December 22, 2016
Abstract
Introduction
Depending upon influenza vaccination history, children aged 6 months–8 years need one or two doses of influenza vaccine to be considered fully vaccinated. The objectives of this study were to quantify the percentage of children aged 6 months–8 years who were fully vaccinated against influenza based on parental report, overall, by state, and by sociodemographic characteristics, and to examine sociodemographic characteristics associated with being fully vaccinated.
Methods
Data from the National Immunization Survey-Flu for the 2012–2013 and 2013–2014 influenza seasons were analyzed in 2015 using the Kaplan–Meier method to produce vaccination coverage estimates. Wald chi-square tests were used to test for bivariate associations, and Cox proportional hazards models were used to test for demographic characteristics independently associated with the child being fully vaccinated.
Results
The percentages of children aged 6 months–8 years who were fully vaccinated during the 2012–2013 and 2013–2014 influenza seasons were 41.0% and 45.2%, respectively. Full vaccination varied widely by state and was more likely for children requiring only one dose. Based on the statistical models, children likely to be fully vaccinated were older, non-black, had a mother with an education >12 years, or lived in a high-income household.
Conclusions
Most children in the U.S. are not fully vaccinated against influenza. Reminder systems and interventions that reduce or remove barriers to children receiving their second doses of influenza vaccine may improve full influenza vaccination coverage among all children.

American Journal of Public Health
Volume 107, Issue 4 (April 2017)
http://ajph.aphapublications.org/toc/ajph/current
AJPH LAW & ETHICS - ZIKA
Engaging Human Rights in the Response to the Evolving Zika Virus Epidemic
American Journal of Public Health: April 2017, Vol. 107, No. 4: 525–531
Jennifer J. K. Rasanathan, Sarah MacCarthy, Debora Diniz, Els Torreele, Sofia Gruskin
ABSTRACT

In late 2015, an increase in the number of infants born with microcephaly in poor communities in northeast Brazil prompted investigation of antenatal Zika infection as the cause. Zika now circulates in 69 countries, and has affected pregnancies of women in 29 countries.

Public health officials, policymakers, and international organizations are considering interventions to address health consequences of the Zika epidemic. To date, public health responses have focused on mosquito vector eradication, sexual and reproductive health services, knowledge and technology including diagnostic test and vaccine development, and health system preparedness.

We summarize responses to date and apply human rights and related principles including nondiscrimination, participation, the legal and policy context, and accountability to identify shortcomings and to offer suggestions for more equitable, effective, and sustainable Zika responses.

American Journal of Tropical Medicine and Hygiene
Volume 96, Issue 3, 2017
http://www.ajtmh.org/content/current
[Reviewed earlier]

Annals of Internal Medicine
21 March 2017 Vol: 166, Issue 6
http://annals.org/issue.aspx
[Reviewed earlier]

BMC Cost Effectiveness and Resource Allocation
http://resource-allocation.biomedcentral.com/
(Accessed 1 April 2017)
[No new content]

BMJ Global Health
January 2017; volume 2, issue 1
http://gh.bmj.com/content/2/1?current-issue=y
[Reviewed earlier]

BMC Health Services Research
http://www.biomedcentral.com/bmchealthservres/content
(Accessed 1 April 2017)
[No new digest content identified]

BMC Infectious Diseases
http://www.biomedcentral.com/bmcinfectdis/content
(Accessed 1 April 2017)
[No new digest content identified]

BMC Medical Ethics
http://www.biomedcentral.com/bmcmedethics/content
(Accessed 1 April 2017)
[No new content]

BMC Medicine
http://www.biomedcentral.com/bmcmed/content
(Accessed 1 April 2017)
[No new digest content identified]

BMC Pregnancy and Childbirth
http://www.biomedcentral.com/bmcpregnancychildbirth/content
(Accessed 1 April 2017)
[No new digest content identified]

BMC Public Health
http://bmcpublichealth.biomedcentral.com/articles
(Accessed 1 April 2017)
Research article
Systematic review of cost-effectiveness analyses for combinations of prevention strategies against human papillomavirus (HPV) infection: a general trend
Frédéric Gervais, Kyle Dunton, Yiling Jiang and Nathalie Largeron
BMC Public Health 2017 17:283
Published on: 28 March 2017
Abstract
Background
Due to the arrival of multi-valent HPV vaccines, it is more and more important to have a better understanding of the relationship between vaccination and screening programmes. This review aimed to: (1) collect published evidence on the cost-effectiveness profile of different HPV prevention strategies and, in particular, those combining vaccination with changes in screening practices; (2) explore the cost-effectiveness of alternative preventive strategies based on screening and vaccination.
Methods
A systematic literature review was conducted in order to identify the relevant studies regarding the cost-effectiveness of prevention strategies against HPV infection. Analysis comparing the modelling approaches between studies was made along with an assessment of the magnitude of impact of several factors on the cost-effectiveness of different screening strategies.
Results
A total of 18 papers were quantitatively summarised within the narrative. A high degree of heterogeneity was found in terms of how HPV prevention strategies have been assessed in terms of their economic and epidemiological impact, with variation in screening practice and valence of HPV vaccination found to have large implications in terms of cost-effectiveness.
Conclusions

This review demonstrated synergies between screening and vaccination. New prevention strategies involving multi-valence vaccination, HPV DNA test screening, delayed commencement and frequency of screening could be implemented in the future. Strategies implemented in the future should be chosen with care, and informed knowledge of the potential impact of all possible prevention strategies. Highlighted in this review is the difficulty in assessing multiple strategies. Appropriate modelling techniques will need to be utilised to assess the most cost-effective strategies.

BMC Research Notes
http://www.biomedcentral.com/bmcresnotes/content
(Accessed 1 April 2017)
[No new digest content identified]

BMJ Open
April 2017 - Volume 7 - 4
http://bmjopen.bmj.com/content/current
Smoking and tobacco
[No new digest content identified]

Bulletin of the World Health Organization
Volume 95, Number 4, April 2017, 241-312
http://www.who.int/bulletin/volumes/95/4/en/
EDITORIALS
Antimicrobial resistance: translating political commitment into national action
Hajime Inoue & Ren Minghui
http://dx.doi.org/10.2471/BLT.17.191890

Progress in promoting data sharing in public health emergencies
Katherine Littler, Wee-Ming Boon, Gail Carson, Evelyn Depoortere, Sophie Mathewson, Daniel Mietchen, Vasee S Moorthy, Denise O'Connor, Cathy Roth & Carlos Segovia
http://dx.doi.org/10.2471/BLT.17.192096
In February 2016, the World Health Organization (WHO) declared the Zika virus-related cluster of microcephaly cases and other neurological disorders reported in Brazil, a Public Health Emergency of International Concern (PHEIC).1 Following the declaration, over 30 global health bodies issued a joint statement committing to data sharing to ensure that the global response to the Zika virus and future emergencies, could be informed by the best and most current evidence.2 The statement represented a concerted effort by those involved to address past failures of timely access to relevant data. It also highlighted the lack of a clear path to implementation for data sharing during public health emergencies. In March 2016, the Global Research Collaboration for Infectious Disease Preparedness (GloPID-R) established a data-sharing working group which has been working in coalition with other stakeholders including WHO, scientists, nongovernmental organizations, journals and other agencies. 3 This group is working to identify barriers to data sharing in public health emergencies that should be addressed to better prepare for any future epidemic. We review the progress since the joint

statement was made, outline the key challenges related to data sharing and summarize the group's activities to date.

The experiences from the 2013–2016 Ebola virus disease outbreak and the 2015 Zika virus outbreak demonstrated the importance of research in public health emergencies and the difficulties associated with sharing research findings rapidly and outside of conventional scientific publications.[4–7] Research – whether epidemiological, genetic, preclinical, microbiological, behavioural or operational – can generate new knowledge about an outbreak in rapidly changing situations. Research can inform risk communication, surveillance, clinical care, product development and other interventions. The WHO consensus and policy statements called for a paradigm shift in information sharing in public health emergencies and described the particularities to consider in dealing with different data types. [8,9]

Despite these efforts, rapid data sharing during public health emergencies remains challenging for various reasons. First, there are limited incentives for researchers and other people responding to the emergency to share data. Second, there is a lack of appropriate infrastructure for data sharing such as repositories and information technology platforms. Such rapid data sharing requires a clear governance structure that ensures a balance between privacy and access, as well as adheres to national and international ethical and legal requirements. Implementation of calls for data sharing is hampered by barriers, including: (i) inequity in capacity and funding between researchers in high-and low-income settings; (ii) varying concepts of data ownership by data providers and data users; (iii) no clear mechanism for attribution and academic recognition for data providers and data users related to published products; (iv) costs and varying degrees of access to data management systems within research groups or institutions; (v) reputational risk from premature sharing of data and results; (vi) ethical and regulatory issues related to privacy and consent in the context of experimental treatment and clinical care; (vii) access to the benefits of research; (viii) concerns about loss of potential financial benefits from eventual commercialization and intellectual property rights.[10]

The GloPID-R working group has developed, and requests comment on, a set of principles to underpin future implementation of timely data sharing.[11] These new principles draw on others, such as the FAIR Guiding Principles for scientific data management and stewardship,[12] and are intended to provide an initial framework for discussion. The group is also preparing case studies to document data-sharing practices in past emergencies; developing a decision tool to guide data sharing to address knowledge gaps in outbreaks and has commissioned studies on good practice and standards. The intention is to use the emerging evidence base to inform the design and implementation of new systems and approaches that address the data needs of the different groups responding to public health emergencies. The collective work is intended to support WHO's Research and Development Blueprint and include other stakeholders, such as the Global Outbreak Alert and Response Network and the Coalition for Epidemic Preparedness.

Effective data sharing requires flexibility by all stakeholders to adapt to unforeseen events and challenges. A data-sharing system needs to allow collaboration between stakeholders in the absence of pre-existing relationships and all collaborators need to adhere to fundamental ethical principles of data use. Above all, it must ensure that people in all affected countries benefit from timely access to evidence-based interventions in emergencies.

RESEARCH

Increased immunization coverage addresses the equity gap in Nepal
Ashish KC, Viktoria Nelin, Hendrikus Raaijmakers, Hyung Joon Kim, Chahana Singh & Mats Målqvist
http://dx.doi.org/10.2471/BLT.16.178327
Abstract
Objective
To compare immunization coverage and equity distribution of coverage between 2001 and 2014 in Nepal.
Methods
We used data from the Demographic and Health Surveys carried out in 2001, 2006 and 2011 together with data from the 2014 Multiple Indicator Cluster Survey. We calculated the proportion, in mean percentage, of children who had received Bacille Calmette–Guérin (BCG) vaccine, three doses of polio vaccine, three doses of diphtheria–pertussis–tetanus (DPT) vaccine and measles vaccine. To measure inequities between wealth quintiles, we calculated the slope index of inequality (SII) and relative index of inequality (RII) for all surveys.
Findings
From 2001 to 2014, the proportion of children who received all vaccines at the age of 12 months increased from 68.8% (95% confidence interval, CI: 67.5–70.1) to 82.4% (95% CI: 80.7–84.0). While coverage of BCG, DPT and measles immunization statistically increased during the study period, the proportion of children who received the third dose of polio vaccine decreased from 93.3% (95% CI: 92.7–93.9) to 88.1% (95% CI: 86.8–89.3). The poorest wealth quintile showed the greatest improvement in immunization coverage, from 58% to 77.9%, while the wealthiest quintile only improved from 84.8% to 86.0%. The SII for children who received all vaccines improved from 0.070 (95% CI: 0.061–0.078) to 0.026 (95% CI: 0.013–0.039) and RII improved from 1.13 to 1.03.
Conclusion
The improvement in immunization coverage between 2001 and 2014 in Nepal can mainly be attributed to the interventions targeting the disadvantaged populations.

A randomized controlled study of socioeconomic support to enhance tuberculosis prevention and treatment, Peru
Tom Wingfield, Marco A Tovar, Doug Huff, Delia Boccia, Rosario Montoya, Eric Ramos, Sumona Datta, Matthew J Saunders, James J Lewis, Robert H Gilman & Carlton A Evans
http://dx.doi.org/10.2471/BLT.16.170167

SYSTEMATIC REVIEWS
Under-five mortality according to maternal survival: a systematic review and meta-analysis
Lana Clara Chikhungu, Marie-Louise Newell & Nigel Rollins
http://dx.doi.org/10.2471/BLT.15.157149

POLICY & PRACTICE
Lessons learnt from 12 oral cholera vaccine campaigns in resource-poor settings
Amber Hsiao, Sachin N Desai, Vittal Mogasale, Jean-Louis Excler & Laura Digilio
http://dx.doi.org/10.2471/BLT.16.175166

Child Care, Health and Development

March 2017 Volume 43, Issue 2 Pages 161–321
http://onlinelibrary.wiley.com/doi/10.1111/cch.v43.2/issuetoc
[Reviewed earlier]

Clinical and Experimental Vaccine Research
2017 Jan;6(1):31-37. English.
http://ecevr.org/
[Reviewed earlier]

Clinical Therapeutics
February 2017 Volume 39, Issue 2, p231-450
http://www.clinicaltherapeutics.com/issue/S0149-2918(17)X0002-7
[Reviewed earlier]

Complexity
November/December 2016 Volume 21, Issue S2 Pages 1–642
http://onlinelibrary.wiley.com/doi/10.1002/cplx.v21.S2/issuetoc
[Reviewed earlier]

Conflict and Health
http://www.conflictandhealth.com/
[Accessed 1 April 2017]
[No new digest content identified]

Contemporary Clinical Trials
Volume 55, Pages 1-62 (April 2017)
http://www.sciencedirect.com/science/journal/15517144/55
[New issue; No relevant content identified]

Current Opinion in Infectious Diseases
April 2017 - Volume 30 - Issue 2
http://journals.lww.com/co-infectiousdiseases/pages/currenttoc.aspx
[Reviewed earlier]

Developing World Bioethics
April 2017 Volume 17, Issue 1 Pages 1–60
http://onlinelibrary.wiley.com/doi/10.1111/dewb.2017.17.issue-1/issuetoc
[Reviewed earlier]

Development in Practice

Volume 24, Number 8
http://www.developmentinpractice.org/journals/volume-24-number-8
[Reviewed earlier]

Disasters
April 2017 Volume 41, Issue 2 Pages 209–426
http://onlinelibrary.wiley.com/doi/10.1111/disa.2017.41.issue-2/issuetoc
[Reviewed earlier]

EMBO Reports
Volume 18, Issue 3, 2017
http://embor.embopress.org/front.current-issue
[Reviewed earlier]

Emerging Infectious Diseases
Volume 23, Number 4—April 2017
http://wwwnc.cdc.gov/eid/
Perspective
Biologic Evidence Required for Zika Disease Enhancement by Dengue Antibodies PDF Version [PDF - 780 KB - 5 pages]
S. B. Halstead
Abstract
The sudden appearance of overt human Zika virus infections that cross the placenta to damage fetal tissues, target sexual organs, and are followed in some instances by Guillain-Barré syndrome raises questions regarding whether these outcomes are caused by genetic mutations or if prior infection by other flaviviruses affects disease outcome. Because dengue and Zika viruses co-circulate in the urban Aedes aegypti mosquito–human cycle, a logical question, as suggested by in vitro data, is whether dengue virus infections result in antibody-dependent enhancement of Zika virus infections. This review emphasizes the critical role for epidemiologic studies (retrospective and prospective) in combination with the studies to identify specific sites of Zika virus infection in humans that are needed to establish antibody-dependent enhancement as a possibility or a reality.

Epidemics
Volume 18, Pages 1-112 (March 2017)
http://www.sciencedirect.com/science/journal/17554365
Multi-model comparisons for neglected tropical diseases - validation and projection
Edited by Déirdre Hollingsworth and Graham Medley
[Reviewed earlier]

Epidemiology and Infection
Volume 145 - Issue 5 - April 2017
https://www.cambridge.org/core/journals/epidemiology-and-infection/latest-issue

[Reviewed earlier]

The European Journal of Public Health
Volume 27, Issue 2, 1 April 2017
https://academic.oup.com/eurpub/issue/27/2
Viewpoints
Written informed consent in health research is outdated
Eur J Public Health (2017) 27 (2): 194-195.
R. Broekstra; E.L.M. Maeckelberghe; R.P. Stolk
[Initial text]
Reference to the Declaration of Helsinki as assurance for ethical principles for medical research involving human subjects has become a meaningless mantra. The participants' relationship with researchers has been distrusted-based with Written Informed Consent (WIC) hereinafter referred to as WIC) placed as an important barrier to protect participants' autonomy. Today the mantra is dictated by many details in consent forms and ever more strict regulations. Globally, especially in Europe as well the USA, establishment of privacy and protection of research subject regulations reveal similar obstacles and critiques, for example in the recently accepted European General Data Protection Regulation and the proposed changes to the Common Rule from September 2015. In a digital revolution ethical principles need to be reassured in a novel way, especially for the increasing use of data...

Infectious Diseases
Low vaccination coverage of Greek Roma children amid economic crisis: national survey using stratified cluster sampling
Dimitris Papamichail, Ioanna Petraki, Chrisoula Arkoudis, Agis Terzidis, Emmanouil Smyrnakis, Alexis Benos, Takis Panagiotopoulos
Abstract
Background: Research on Roma health is fragmentary as major methodological obstacles often exist. Reliable estimates on vaccination coverage of Roma children at a national level and identification of risk factors for low coverage could play an instrumental role in developing evidence-based policies to promote vaccination in this marginalized population group. Methods: We carried out a national vaccination coverage survey of Roma children. Thirty Roma settlements, stratified by geographical region and settlement type, were included; 7–10 children aged 24–77 months were selected from each settlement using systematic sampling. Information on children's vaccination coverage was collected from multiple sources. In the analysis we applied weights for each stratum, identified through a consensus process. Results: A total of 251 Roma children participated in the study. A vaccination document was presented for the large majority (86%). We found very low vaccination coverage for all vaccines. In 35–39% of children 'minimum vaccination' (DTP3 and IPV2 and MMR1) was administered, while 34–38% had received HepB3 and 31–35% Hib3; no child was vaccinated against tuberculosis in the first year of life. Better living conditions and primary care services close to Roma settlements were associated with higher vaccination indices. Conclusions: Our study showed inadequate vaccination coverage of Roma children in Greece, much lower than that of the non-minority child population. This serious public health challenge should be systematically addressed, or, amid continuing economic recession, the gap may widen. Valid national estimates on important characteristics of the Roma population can contribute to planning inclusion policies.

Global Health Action
Volume 9, 2016 - Issue 1
http://www.tandfonline.com/toc/zgha20/9/1
[Reviewed earlier]

Global Health: Science and Practice (GHSP)
March 24, 2017, 5 (1)
http://www.ghspjournal.org/content/current
EDITORIALS
Can We Expect Results-Based Financing to Improve Quality of Care?
Performance-based incentives as currently employed appear poorly adapted for improving quality of clinical processes. They mainly measure structural items that, while easier to measure, are remote from actual clinical quality, and they could even perversely lead to heightened attention to those factors at the expense of clinical quality.
Glob Health Sci Pract 2017;5(1):1-3. First published online March 15, 2017.
http://dx.doi.org/10.9745/GHSP-D-17-00069

REVIEWS
Quality of Care in Performance-Based Financing: How It Is Incorporated in 32 Programs Across 28 Countries
Structural aspects of quality such as equipment and infrastructure were the most frequently measured, with some measurement of processes of clinical care. Further examination is warranted to assess whether variations in how quality of care is incorporated into performance-based financing programs lead to differential effects.
Jessica Gergen, Erik Josephson, Martha Coe, Samantha Ski, Supriya Madhavan, Sebastian Bauhoff
Glob Health Sci Pract 2017;5(1):90-107. First published online March 15, 2017.
http://dx.doi.org/10.9745/GHSP-D-16-00239

Global Public Health
Volume 12, 2017 Issue 5
http://www.tandfonline.com/toc/rgph20/current
[Reviewed earlier]

Globalization and Health
http://www.globalizationandhealth.com/
[Accessed 1 April 2017]
[No new content]

Health Affairs
March 2017; Volume 36, Issue 3
http://content.healthaffairs.org/content/current
Issue Focus: Delivery System Innovation

[Reviewed earlier]

Health and Human Rights
Volume 18, Issue 2, December 2016
http://www.hhrjournal.org/
Special Section: Universal Health Coverage and Human Rights
[Reviewed earlier]

Health Economics, Policy and Law
Volume 12 - Issue 2 - April 2017
https://www.cambridge.org/core/journals/health-economics-policy-and-law/latest-issue
Special Issue: Towards a Global Framework for Health Financing
Editorial
Global health financing towards 2030 and beyond
Trygve Ottersen, David B. Evans, Elias Mossialos, John-Arne Røttingen
DOI: https://doi.org/10.1017/S1744133116000372
Published online: 23 March 2017, pp. 105-111

Universal health coverage and healthy lives for all are now widely shared goals and central to the 2030 Agenda for Sustainable Development. Despite significant progress over the last decades, the world is still far from reaching these goals. Billions of people lack basic coverage of health services, live with unnecessary pain and disability, or have their lives cut short by avoidable or treatable conditions (Jamison et al., 2013; Murray et al., 2015; World Health Organization, World Bank, 2015). At the same time, millions are pushed into poverty simply because they need to use health services and must pay for them out-of-pocket. Fundamental to this situation is the way health interventions and the health system are financed. Numerous countries spend less than is required to ensure even the most essential health services, scarce funds are wasted, out-of-pocket payments remain high and disadvantaged groups get the least public resources despite having the greatest needs.

It is clear that today's global and national arrangements for health financing need to change, and this is a multifaceted endeavour. It is about domestic financing of health systems, joint financing of global public goods and external financing of health systems. It is about resource mobilisation, pooling and effective use. And it is about economics, politics, public health, human rights, law and ethics. To get health financing right, these areas, functions and perspectives must all be integrated and aligned.

Chatham House Working Group
The need for a broad and fresh look at global health financing was the starting premise for the Chatham House Centre on Global Health Security Working Group on Health Financing. The Group was established in 2011, following a conference at the Centre marking the 10th anniversary of the Commission on Macroeconomics and Health (Commission on Macroeconomics and Health, 2001). The mandate was to revisit the central themes addressed by the Commission and develop updated recommendations in light of new knowledge and developments since 2001. The Working Group would also build on the insights of three other landmark reports: the World Development Report 1993 Investing in Health (World Bank, 1993),

the 2009 final report of the Taskforce on Innovative International Financing for Health Systems (HLTF, 2009), and the 2010 World Health Report Health Systems Financing: The Path to Universal Coverage (World Health Organization, 2010).

To facilitate a broad view on health financing, the Working Group brought together members with diverse backgrounds and perspectives from 15 countries. This included policy makers, researchers in multiple fields, representatives of civil society, and representatives of national and international institutions. The group met three times, and multiple working papers were prepared to form the basis for the final report, entitled Shared Responsibilities for Health: A Coherent Global Framework for Health Financing (Røttingen et al., 2014), which was launched during the World Health Assembly in 2014.

The report characterises key economic, epidemiological and institutional transitions and describe how these come with both challenges and opportunities for health financing. Against that background, a set of policy responses is offered, encapsulated in 20 recommendations for making progress towards a coherent global framework for health financing. These recommendations pertain to domestic financing of health systems, joint financing of global public goods for health, external financing of health systems and the cross-cutting issues of accountability and agreement on a new framework.

This issue
This special issue addresses all these questions and does so more broadly and more in depth than the Working Group's Report could do. Health Economics, Policy and Law serves as an ideal platform for such a wide-ranging health policy issue, where economics, politics and legal considerations need to converge. While most contributions are in the form of academic articles, the close link to practical policy has been sought maintained throughout…

Health Policy and Planning
Volume 32 Issue 3 April 2017
http://heapol.oxfordjournals.org/content/current
[Reviewed earlier]

Health Research Policy and Systems
http://www.health-policy-systems.com/content
[Accessed 1 April 2017]
Commentary
Development of the Good Health Research Practice course: ensuring quality across all health research in humans
Quality and ethics need to be embedded into all areas of research with human participants. Good Clinical Practice (GCP) guidelines are international ethical and scientific quality standards for designing, cond...
Patricia Henley, Varalakshmi Elango, Olaf Horstick, Riris Andono Ahmad, Christine Maure, Pascal Launois, Corinne Merle, Jamila Nabieva and Yodi Mahendradhata
Health Research Policy and Systems 2017 15:28
Published on: 31 March 2017

Research
The impact on healthcare, policy and practice from 36 multi-project research programmes: findings from two reviews
We sought to analyse the impacts found, and the methods used, in a series of assessments of programmes and portfolios of health research consisting of multiple projects.
Steve Hanney, Trisha Greenhalgh, Amanda Blatch-Jones, Matthew Glover and James Raftery
Health Research Policy and Systems 2017 15:26
Published on: 28 March 2017

Humanitarian Exchange Magazine
Number 68 January 2017
http://odihpn.org/magazine/the-crisis-in-south-sudan/
The crisis in South Sudan
[Reviewed earlier]

Human Vaccines & Immunotherapeutics (formerly Human Vaccines)
Volume 13, Issue 3, 2017
http://www.tandfonline.com/toc/khvi20/current
[Reviewed earlier]

Infectious Agents and Cancer
http://www.infectagentscancer.com/content
[Accessed 1 April 2017]
[No new digest content identified]

Infectious Diseases of Poverty
http://www.idpjournal.com/content
[Accessed 1 April 2017]
[No new digest content identified]

International Health
Volume 9, Issue 2 March 2017
http://inthealth.oxfordjournals.org/content/current
[Reviewed earlier]

International Journal of Community Medicine and Public Health
Vol 4, No 3 (2017) March 2017
http://www.ijcmph.com/index.php/ijcmph/issue/view/21
[Reviewed earlier]

International Journal of Epidemiology

Volume 45 Issue 6 December 2016
http://ije.oxfordjournals.org/content/current
Interventions

Non-specific effects of BCG vaccination on morbidity among children in Greenland: a population-based cohort study

S Haahr; SW Michelsen; M Andersson; K Bjorn-Mortensen; B Soborg ...

Abstract

Background: The potential non-specific effects of BCG (Bacillus Calmette-Guérin) vaccination, with reported reduction of infectious disease morbidity among vaccinated children, in addition to the protective effect against tuberculosis (TB), are highly debated. In Greenland, BCG vaccination was introduced in 1955, but temporarily discontinued from 1991 to 1996 due to nationwide policy changes. Using the transient vaccination stop, we aimed to investigate possible non-specific effects of BCG vaccination by measuring nation-wide hospitalization rates due to infectious diseases other than TB among vaccinated and unvaccinated children.

Methods: A retrospective cohort study including all children born in Greenland aged 3 months to 3 years from 1989 to 2004. A personal identification number assigned at birth allowed for follow-up through national registers. Information on hospitalization due to infectious diseases was obtained from the Greenlandic inpatient register using ICD-8 and ICD-10 codes. Participants with notified TB were censored. Incidence rate ratios (IRR) were estimated using Poisson regression.

Results: Overall, 19 363 children, hereof 66% BCG-vaccinated, were followed for 44 065 person-years and had 2069 hospitalizations due to infectious diseases. IRRs of hospitalization in BCG-vaccinated as compared with BCG-unvaccinated children were 1.07 [95% confidence interval (CI) 0.96–1.20] for infectious diseases overall, and specifically 1.10 (95% CI 0.98–1.24) for respiratory tract infections. Among BCG-vaccinated children aged 3 to 11 months, the IRR of hospitalization due to infectious diseases was 1.00 (95% CI 0.84–1.19) as compared with BCG-unvaccinated children.

Conclusion: Our results do not support the hypothesis that neonatal BCG vaccination reduces morbidity in children caused by infectious diseases other than TB.

Commentary: BCG has no beneficial non-specific effects on Greenland. An answer to the wrong question?

Christine Stabell Benn; Signe Sørup

International Journal of Infectious Diseases

March 2017 Volume 56, p1-286
http://www.ijidonline.com/issue/S1201-9712(17)X0003-9
Special Issue: Commemorating World Tuberculosis Day 2017
[40+ articles covering a range of TB thematic areas]
[Reviewed earlier]

JAMA

March 28, 2017, Vol 317, No. 12, Pages 1191-1286
http://jama.jamanetwork.com/issue.aspx
[New issue; No digest content identified]

JAMA Pediatrics
March 1, 2017, Vol 171, No. 3, Pages 207-312
http://archpedi.jamanetwork.com/issue.aspx
[Reviewed earlier]

JBI Database of Systematic Review and Implementation Reports
March 2017 - Volume 15 - Issue 3
http://journals.lww.com/jbisrir/Pages/currenttoc.aspx
[Reviewed earlier]

Journal of Community Health
Volume 42, Issue 2, April 2017
http://link.springer.com/journal/10900/42/2/page/1
[Reviewed earlier]

Journal of Epidemiology & Community Health
April 2017 - Volume 71 - 4
http://jech.bmj.com/content/current
[Reviewed earlier]

Journal of Global Ethics
Volume 12, Issue 3, 2016
http://www.tandfonline.com/toc/rjge20/current
Theme Issue: Refugee Crisis: The Borders of Human Mobility
[Reviewed earlier]

Journal of Global Infectious Diseases (JGID)
January – March 2017 Vol 9 Issue 1 Pages 1-37
http://www.jgid.org/currentissue.asp?sabs=n
[Reviewed earlier]

Journal of Health Care for the Poor and Underserved (JHCPU)
Volume 28, Number 1, February 2017
https://muse.jhu.edu/issue/35850
[Reviewed earlier]

Journal of Immigrant and Minority Health
Volume 19, Issue 2, April 2017
http://link.springer.com/journal/10903/19/2/page/1
[Reviewed earlier]

Journal of Immigrant & Refugee Studies
Volume 15, Issue 1, 2017
http://www.tandfonline.com/toc/wimm20/current
[Reviewed earlier]

Journal of Infectious Diseases
Volume 215, Issue 3 1 February 2017
http://jid.oxfordjournals.org/content/current
[Reviewed earlier]

Journal of Medical Ethics
April 2017 - Volume 43 - 4
http://jme.bmj.com/content/current
[New issue; No digest content identified]

Journal of Medical Internet Research
Vol 19, No 4 (2017): April
http://www.jmir.org/2017/4
[New issue; No digest content identified]

Journal of Medical Microbiology
Volume 66, Issue 3, March 2017
http://jmm.microbiologyresearch.org/
[New issue; No digest content identified]

Journal of Patient-Centered Research and Reviews
Volume 4, Issue 1 (2017)
http://digitalrepository.aurorahealthcare.org/jpcrr/
[Reviewed earlier]

Journal of the Pediatric Infectious Diseases Society (JPIDS)
Volume 6 Issue 1, March 2017
http://jpids.oxfordjournals.org/content/current
[Reviewed earlier]

Journal of Pediatrics
April 2017 Volume 183, p1-206
http://www.jpeds.com/current
The Editors' Perspectives

Underimmunization drives community outbreaks of pertussis
Sarah S. Long
Published in issue: April 2017

Original Articles
The Timing of Pertussis Cases in Unvaccinated Children in an Outbreak Year: Oregon 2012
Steve G. Robison, Juventila Liko
p159–163
Published online: January 12, 2017

Journal of Public Health Policy
Volume 38, Issue 1, February 2017
http://link.springer.com/journal/41271/38/1/page/1
[Reviewed earlier]

Journal of the Royal Society – Interface
01 March 2017; volume 14, issue 128
http://rsif.royalsocietypublishing.org/content/current
[No new digest content identified]

Journal of Travel Medicine
Volume 24, Issue 2, March/April 2017
https://academic.oup.com/jtm/issue/24/2
[Reviewed earlier]

Journal of Virology
March 2017, volume 91, issue 6
http://jvi.asm.org/content/current
[New issue; No digest content identified]

The Lancet
Apr 01, 2017 Volume 389 Number 10076 p1273-1368
http://www.thelancet.com/journals/lancet/issue/current
[New issue; No digest content identified]

Lancet Global Health
Apr 2017 Volume 5 Number 4 e370-e466
http://www.thelancet.com/journals/langlo/issue/current
Comment
The role of mobile phone-based interventions to improve routine childhood immunisation coverage

Abdul Momin Kazi

Articles

Mobile phone-delivered reminders and incentives to improve childhood immunisation coverage and timeliness in Kenya (M-SIMU): a cluster randomised controlled trial

Dustin G Gibson, Benard Ochieng, E Wangeci Kagucia, Joyce Were, Kyla Hayford, Lawrence H Moulton, Orin S Levine, Frank Odhiambo, Katherine L O'Brien, Daniel R Feikin

Summary

Background

As mobile phone access continues to expand globally, opportunities exist to leverage these technologies to support demand for immunisation services and improve vaccine coverage. We aimed to assess whether short message service (SMS) reminders and monetary incentives can improve immunisation uptake in Kenya.

Methods

In this cluster-randomised controlled trial, villages were randomly and evenly allocated to four groups: control, SMS only, SMS plus a 75 Kenya Shilling (KES) incentive, and SMS plus 200 KES (85 KES=USD$1). Caregivers were eligible if they had a child younger than 5 weeks who had not yet received a first dose of pentavalent vaccine. Participants in the intervention groups received SMS reminders before scheduled pentavalent and measles immunisation visits. Participants in incentive groups, additionally, received money if their child was timely immunised (immunisation within 2 weeks of the due date). Caregivers and interviewers were not masked. The proportion of fully immunised children (receiving BCG, three doses of polio vaccine, three doses of pentavalent vaccine, and measles vaccine) by 12 months of age constituted the primary outcome and was analysed with log-binomial regression and General Estimating Equations to account for correlation within clusters. This trial is registered with ClinicalTrials.gov, number NCT01878435.

Findings

Between Oct 14, 2013, and Oct 17, 2014, we enrolled 2018 caregivers and their infants from 152 villages into the following four groups: control (n=489), SMS only (n=476), SMS plus 75 KES (n=562), and SMS plus 200 KES (n=491). Overall, 1375 (86%) of 1600 children who were successfully followed up achieved the primary outcome, full immunisation by 12 months of age (296 [82%] of 360 control participants, 332 [86%] of 388 SMS only participants, 383 [86%] of 446 SMS plus 75 KES participants, and 364 [90%] of 406 SMS plus 200 KES participants). Children in the SMS plus 200 KES group were significantly more likely to achieve full immunisation at 12 months of age (relative risk 1·09, 95% CI 1·02–1·16, p=0·014) than children in the control group.

Interpretation

In a setting with high baseline immunisation coverage levels, SMS reminders coupled with incentives significantly improved immunisation coverage and timeliness. Given that global immunisation coverage levels have stagnated around 85%, the use of incentives might be one option to reach the remaining 15%.

Funding

Bill & Melinda Gates Foundation.

The contribution of poor and rural populations to national trends in reproductive, maternal, newborn, and child health coverage: analyses of cross-sectional surveys from 64 countries

Cesar G Victora, Aluisio J D Barros, Giovanny V A França, Inácio C M da Silva, Liliana Carvajal-Velez, Agbessi Amouzou

Population coverage of artemisinin-based combination treatment in children younger than 5 years with fever and Plasmodium falciparum infection in Africa, 2003–2015: a modelling study using data from national surveys
Adam Bennett, Donal Bisanzio, Joshua O Yukich, Bonnie Mappin, Cristin A Fergus, Michael Lynch, Richard E Cibulskis, Samir Bhatt, Daniel J Weiss, Ewan Cameron, Peter W Gething, Thomas P Eisele

Lancet Infectious Diseases
Apr 2017 Volume 17 Number 4 p349-460 e107-e127
http://www.thelancet.com/journals/laninf/issue/current

Comment

Vaccine compliance and the 2016 Arkansas mumps outbreak
Maimuna S Majumder, Colleen M Nguyen, Emily L Cohn, Yulin Hswen, Sumiko R Mekaru, John S Brownstein

Articles

30-year trends in admission rates for encephalitis in children in England and effect of improved diagnostics and measles-mumps-rubella vaccination: a population-based observational study
Mildred A Iro, Manish Sadarangani, Raphael Goldacre, Alecia Nickless, Andrew J Pollard, Michael J Goldacre

Summary

Background

Encephalitis is a serious neurological disorder, yet data on admission rates for all-cause childhood encephalitis in England are scarce. We aimed to estimate admission rates for childhood encephalitis in England over 33 years (1979–2011), to describe trends in admission rates, and to observe how these rates have varied with the introduction of vaccines and improved diagnostics.

Methods

We did a retrospective analysis of hospital admission statistics for encephalitis for individuals aged 0–19 years using national data from the Hospital Inpatient Enquiry (HIPE, 1979–85) and Hospital Episode Statistics (HES, 1990–2011). We analysed annual age-specific and age-standardised admission rates in single calendar years and admission rate trends for specified aetiologies in relation to introduction of PCR testing and measles-mumps-rubella (MMR) vaccination. We compared admission rates between the two International Classification of Diseases (ICD) periods, ICD9 (1979–94) and ICD10 (1995–2011).

Findings

We found 16 571 encephalitis hospital admissions in the period 1979–2011, with a mean hospital admission rate of 5·97 per 100 000 per year (95% CI 5·52–6·41). Hospital admission rates declined from 1979 to 1994 (ICD9; annual percentage change [APC] −3·30%; 95% CI −2·88 to −3·66; p<0·0001) and increased between 1995 and 2011 (ICD10; APC 3·30%; 2·75–3·85; p<0·0001). Admissions for measles decreased by 97% (from 0·32 to 0·009) and admissions for mumps encephalitis decreased by 98% (from 0·60 to 0·01) after the introduction

of the two-dose MMR vaccine. Hospital admission rates for encephalitis of unknown aetiology have increased by 37% since the introduction of PCR testing.
Interpretation
Hospital admission rates for all-cause childhood encephalitis in England are increasing. Admissions for measles and mumps encephalitis have decreased substantially. The numbers of encephalitis admissions without a specific diagnosis are increasing despite availability of PCR testing, indicating the need for strategies to improve aetiological diagnosis in children with encephalitis.
Funding
None.

Personal View
Adapting to the global shortage of cholera vaccines: targeted single dose cholera vaccine in response to an outbreak in South Sudan
Lucy A Parker, John Rumunu, Christine Jamet, Yona Kenyi, Richard Laku Lino, Joseph F Wamala, Allan M Mpairwe, Iza Ciglenecki, Francisco J Luquero, Andrew S Azman, Jean-Clement Cabrol
Summary
Shortages of vaccines for epidemic diseases, such as cholera, meningitis, and yellow fever, have become common over the past decade, hampering efforts to control outbreaks through mass reactive vaccination campaigns. Additionally, various epidemiological, political, and logistical challenges, which are poorly documented in the literature, often lead to delays in reactive campaigns, ultimately reducing the effect of vaccination. In June 2015, a cholera outbreak occurred in Juba, South Sudan, and because of the global shortage of oral cholera vaccine, authorities were unable to secure sufficient doses to vaccinate the entire at-risk population—approximately 1 million people. In this Personal View, we document the first public health use of a reduced, single-dose regimen of oral cholera vaccine, and show the details of the decision-making process and timeline. We also make recommendations to help improve reactive vaccination campaigns against cholera, and discuss the importance of new and flexible context-specific dose regimens and vaccination strategies.

Lancet Public Health
Mar 2017 Volume 2 Number 3 e121-e156
http://thelancet.com/journals/lanpub/issue/current
[Reviewed earlier]

Lancet Respiratory Medicine
Apr 2017 Volume 5 Number 4 p235-360
http://www.thelancet.com/journals/lanres/issue/current
[Reviewed earlier]

Maternal and Child Health Journal
Volume 21, Issue 3, March 2017
http://link.springer.com/journal/10995/21/3/page/1
[Reviewed earlier]

Medical Decision Making (MDM)
Volume 37, Issue 3, April 2017
http://mdm.sagepub.com/content/current
[New issue; No digest content identified]

The Milbank Quarterly
A Multidisciplinary Journal of Population Health and Health Policy
March 2017 Volume 95, Issue 1 Pages 1–209
http://onlinelibrary.wiley.com/doi/10.1111/milq.2017.95.issue-1/issuetoc
[Reviewed earlier]

Nature
Volume 543 Number 7647 pp589-752 30 March 2017
http://www.nature.com/nature/current_issue.html
[New issue; No digest content identified]

Nature Medicine
March 2017, Volume 23 No 3 pp265-395
http://www.nature.com/nm/journal/v23/n3/index.html
[Reviewed earlier]

Nature Reviews Immunology
March 2017 Vol 17 No 3
http://www.nature.com/nri/journal/v17/n2/index.html
[Reviewed earlier]

New England Journal of Medicine
March 30, 2017 Vol. 376 No. 13
http://www.nejm.org/toc/nejm/medical-journal
Perspective
From Trial to Target Populations — Calibrating Real-World Data
Mehdi Najafzadeh, Ph.D., and Sebastian Schneeweiss, M.D., Sc.D.
N Engl J Med 2017; 376:1203-1205 March 30, 2017 DOI: 10.1056/NEJMp1614720
One difficulty in translating clinical trial findings for target patient populations is that risk factors in trials and electronic health care databases are measured in different ways. We therefore need a way to calibrate our measurements between these two data worlds.

Original Article
Quadrivalent HPV Vaccination and the Risk of Adverse Pregnancy Outcomes
Nikolai M. Scheller, M.D., Björn Pasternak, M.D., Ph.D., Ditte Mølgaard-Nielsen, M.Sc., Henrik Svanström, Ph.D., and Anders Hviid, Dr.Med.Sci.

N Engl J Med 2017; 376:1223-1233 March 30, 2017 DOI: 10.1056/NEJMoa1612296
Abstract
Background
The quadrivalent human papillomavirus (HPV) vaccine is recommended for all girls and women 9 to 26 years of age. Some women will have inadvertent exposure to vaccination during early pregnancy, but few data exist regarding the safety of the quadrivalent HPV vaccine in this context.
Methods
We assessed a cohort that included all the women in Denmark who had a pregnancy ending between October 1, 2006, and November 30, 2013. Using nationwide registers, we linked information on vaccination, adverse pregnancy outcomes, and potential confounders among women in the cohort. Women who had vaccine exposure during the prespecified time windows were matched for propensity score in a 1:4 ratio with women who did not have vaccine exposure during the same time windows. Outcomes included spontaneous abortion, stillbirth, major birth defect, small size for gestational age, low birth weight, and preterm birth.
Results
In matched analyses, exposure to the quadrivalent HPV vaccine was not associated with significantly higher risks than no exposure for major birth defect (65 cases among 1665 exposed pregnancies and 220 cases among 6660 unexposed pregnancies; prevalence odds ratio, 1.19; 95% confidence interval [CI], 0.90 to 1.58), spontaneous abortion (20 cases among 463 exposed pregnancies and 131 cases among 1852 unexposed pregnancies; hazard ratio, 0.71; 95% CI, 0.45 to 1.14), preterm birth (116 cases among 1774 exposed pregnancies and 407 cases among 7096 unexposed pregnancies; prevalence odds ratio, 1.15; 95% CI, 0.93 to 1.42), low birth weight (76 cases among 1768 exposed pregnancies and 277 cases among 7072 unexposed pregnancies; prevalence odds ratio, 1.10; 95% CI, 0.85 to 1.43), small size for gestational age (171 cases among 1768 exposed pregnancies and 783 cases among 7072 unexposed pregnancies; prevalence odds ratio, 0.86; 95% CI, 0.72 to 1.02), or stillbirth (2 cases among 501 exposed pregnancies and 4 cases among 2004 unexposed pregnancies; hazard ratio, 2.43; 95% CI, 0.45 to 13.21).
Conclusions
Quadrivalent HPV vaccination during pregnancy was not associated with a significantly higher risk of adverse pregnancy outcomes than no such exposure. (Funded by the Novo Nordisk Foundation and the Danish Medical Research Council.)

Review Article
Maternal Immunization
Saad B. Omer, M.B., B.S., M.P.H., Ph.D.
N Engl J Med 2017; 376:1256-1267 March 30, 2017 DOI: 10.1056/NEJMra1509044
Infants can be protected against a variety of dangerous infections early in life through immunity transferred from their mothers. This article reviews the efficacy of maternal immunization in the prevention of infections in babies too young to be immunized directly.

Editorial
Ensuring Vaccine Safety in Pregnant Women
Kathryn M. Edwards, M.D.
N Engl J Med 2017; 376:1280-1282 March 30, 2017 DOI: 10.1056/NEJMe1701337
[Initial text]

In this issue of the Journal, investigators from Denmark present a comprehensive review of the adverse pregnancy outcomes encountered in women who received quadrivalent human papillomavirus (HPV) vaccine during pregnancy, as compared with those who did not.1 The investigators assembled data on all the pregnancies in Denmark that occurred within a 7-year period, and they used nationwide registries to identify the dates of pregnancy, pregnancy outcomes, and maternal characteristics, including receipt of HPV vaccine and dates of vaccine administration. Vaccinated women and unvaccinated women were propensity-score matched in a 1:4 ratio, and pregnancy outcomes were compared.

Pediatrics
April 2017, VOLUME 139 / ISSUE 4
http://pediatrics.aappublications.org/content/139/3?current-issue=y
Articles
Bacteremia in Children 3 to 36 Months Old After Introduction of Conjugated Pneumococcal Vaccines
Tara L. Greenhow, Yun-Yi Hung, Arnd Herz
Pediatrics Apr 2017, 139 (4) e20162098; DOI: 10.1542/peds.2016-2098

Pneumococcal Vaccine Response After Exposure to Parasites in Utero, in Infancy, or Mid-Childhood
Monica Nayakwadi Singer, Claire Heath, Jackson Muinde, Virginia Gildengorin, Francis M. Mutuku, David Vu, Dunstan Mukoko, Christopher L. King, Indu J. Malhotra, Charles H. King, A. Desirée LaBeaud
Pediatrics Apr 2017, 139 (4) e20162781; DOI: 10.1542/peds.2016-2781

Pharmaceutics
Volume 9, Issue 1 (March 2017)
http://www.mdpi.com/1999-4923/9/1
[Reviewed earlier]

PharmacoEconomics
April 2017, Issue 4, Pages 397-491
http://link.springer.com/journal/40273/35/3/page/1
[New issue; No digest content identified]

PLOS Currents: Disasters
http://currents.plos.org/disasters/
[Accessed 1 April 2017]
[No new digest content identified]

PLoS Currents: Outbreaks
http://currents.plos.org/outbreaks/
[Accessed 1 April 2017]

Research Article

Spatial Determinants of Ebola Virus Disease Risk for the West African Epidemic

March 31, 2017 ·

Introduction: Although many studies have investigated the probability of Ebola virus disease (EVD) outbreaks while other studies have simulated the size and speed of EVD outbreaks, few have investigated the environmental and population-level predictors of Ebola transmission once an outbreak is underway. Identifying strong predictors of transmission could help guide and target limited public health resources during an EVD outbreak. We examined several environmental and population-level demographic predictors of EVD risk from the West African epidemic. Methods: We obtained district-level estimates from the World Health Organization EVD case data, demographic indicators obtained from the Demographic and Health surveys, and satellite-derived temperature, rainfall, and land cover estimates. A Bayesian hierarchical Poisson model was used to estimate EVD risk and to evaluate the spatial variability explained by the selected predictors. Results: We found that districts had greater risk of EVD with increasing proportion of households not possessing a radio (RR 2.79, 0.90-8.78; RR 4.23, 1.16-15.93), increasing rainfall (RR 2.18; 0.66-7.20; 5.34, 1.20-23.90), and urban land cover (RR 4.87, 1.56-15.40; RR 5.74, 1.68-19.67). Discussion: The finding of radio ownership and reduced EVD transmission risk suggests that the use of radio messaging for control and prevention purposes may have been crucial in reducing the EVD transmission risk in certain districts, although this association requires further study. Future research should examine the etiologic relationships between the identified risk factors and human-to-human transmission of EVD with a focus on factors related to population mobility and healthcare accessibility, which are critical features of epidemic propagation and control.

PLoS Medicine

http://www.plosmedicine.org/

(Accessed 1 April 2017)

Perspective

[No new digest content identified]

PLoS Neglected Tropical Diseases

http://www.plosntds.org/

(Accessed 1 April 2017)

[No new digest content identified]

PLoS One

http://www.plosone.org/

[Accessed 1 April 2017]

Research Article

The role of intervention mapping in designing disease prevention interventions: A systematic review of the literature

Rayyan M. Garba, Muktar A. Gadanya

Research Article | published 30 Mar 2017 PLOS ONE

http://dx.doi.org/10.1371/journal.pone.0174438

Abstract

Objective
To assess the role of Intervention Mapping (IM) in designing disease prevention interventions worldwide.
Methods
Systematic search and review of the relevant literature—peer-reviewed and grey—was conducted using the Preferred Reporting Items for Systematic Reviews and Meta-analysis (PRISMA) guidelines.
Findings
Only five of the twenty two included studies reviewed were RCTs that compared intervention using IM protocol with placebo intervention, and provided the outcomes in terms of percentage increase in the uptake of disease-prevention programmes, and only one of the five studies provided an effect measure in the form of relative risk (RR=1.59, 95% CI=1.08–2.34, p=0.02). Of the five RCTs, three were rated as strong evidences, one as a medium evidence and one as a weak evidence, and they all reported statistically significant difference between the two study groups, with disease prevention interventions that have used the intervention mapping approach generally reported significant increases in the uptake of disease-prevention interventions, ranging from 9% to 28.5% ($0.0001 \leq p \leq 0.02$), On the other hand, all the 22 studies have successfully identified the determinants of the uptake of disease prevention interventions that is essential to the success of disease prevention programmes.
Conclusion
Intervention Mapping has been successfully used to plan, implement and evaluate interventions that showed significant increase in uptake of disease prevention programmes. This study has provided a good understanding of the role of intervention mapping in designing disease prevention interventions, and a good foundation upon which subsequent reviews can be guided.

PLoS Pathogens
http://journals.plos.org/plospathogens/
[Accessed 1 April 2017]
[No new digest content identified]

PNAS - Proceedings of the National Academy of Sciences of the United States of America
http://www.pnas.org/content/early/
[Accessed 1 April 2017]
Biological Sciences - Population Biology:
Comparing nonpharmaceutical interventions for containing emerging epidemics
Corey M. Peak, Lauren M. Childs, Yonatan H. Grad, and Caroline O. Buckee
PNAS 2017 ; published ahead of print March 28, 2017, doi:10.1073/pnas.1616438114
Significance
Quarantine and symptom monitoring of contacts with suspected exposure to an infectious disease are key interventions for the control of emerging epidemics; however, there does not yet exist a quantitative framework for comparing the control performance of each intervention. Here, we use a mathematical model of seven case-study diseases to show how the choice of intervention is influenced by the natural history of the infectious disease, its inherent transmissibility, and the intervention feasibility in the particular healthcare setting. We use this

information to identify the most important characteristics of the disease and setting that need to be considered for an emerging pathogen to make an informed decision between quarantine and symptom monitoring.

Abstract

Strategies for containing an emerging infectious disease outbreak must be nonpharmaceutical when drugs or vaccines for the pathogen do not yet exist or are unavailable. The success of these nonpharmaceutical strategies will depend on not only the effectiveness of isolation measures but also the epidemiological characteristics of the infection. However, there is currently no systematic framework to assess the relationship between different containment strategies and the natural history and epidemiological dynamics of the pathogen. Here, we compare the effectiveness of quarantine and symptom monitoring, implemented via contact tracing, in controlling epidemics using an agent-based branching model. We examine the relationship between epidemic containment and the disease dynamics of symptoms and infectiousness for seven case-study diseases with diverse natural histories, including Ebola, influenza A, and severe acute respiratory syndrome (SARS). We show that the comparative effectiveness of symptom monitoring and quarantine depends critically on the natural history of the infectious disease, its inherent transmissibility, and the intervention feasibility in the particular healthcare setting. The benefit of quarantine over symptom monitoring is generally maximized for fast-course diseases, but we show the conditions under which symptom monitoring alone can control certain outbreaks. This quantitative framework can guide policymakers on how best to use nonpharmaceutical interventions and prioritize research during an outbreak of an emerging pathogen.

Biological Sciences - Medical Sciences:

Meta-assessment of bias in science

Daniele Fanelli, Rodrigo Costas, and John P. A. Ioannidis

PNAS 2017 ; published ahead of print March 20, 2017, doi:10.1073/pnas.1618569114

Significance

Science is said to be suffering a reproducibility crisis caused by many biases. How common are these problems, across the wide diversity of research fields? We probed for multiple bias-related patterns in a large random sample of meta-analyses taken from all disciplines. The magnitude of these biases varied widely across fields and was on average relatively small. However, we consistently observed that small, early, highly cited studies published in peer-reviewed journals were likely to overestimate effects. We found little evidence that these biases were related to scientific productivity, and we found no difference between biases in male and female researchers. However, a scientist's early-career status, isolation, and lack of scientific integrity might be significant risk factors for producing unreliable results.

Abstract

Numerous biases are believed to affect the scientific literature, but their actual prevalence across disciplines is unknown. To gain a comprehensive picture of the potential imprint of bias in science, we probed for the most commonly postulated bias-related patterns and risk factors, in a large random sample of meta-analyses taken from all disciplines. The magnitude of these biases varied widely across fields and was overall relatively small. However, we consistently observed a significant risk of small, early, and highly cited studies to overestimate effects and of studies not published in peer-reviewed journals to underestimate them. We also found at least partial confirmation of previous evidence suggesting that US studies and early studies might report more extreme effects, although these effects were smaller and more heterogeneously distributed across meta-analyses and disciplines. Authors publishing at high rates and receiving

many citations were, overall, not at greater risk of bias. However, effect sizes were likely to be overestimated by early-career researchers, those working in small or long-distance collaborations, and those responsible for scientific misconduct, supporting hypotheses that connect bias to situational factors, lack of mutual control, and individual integrity. Some of these patterns and risk factors might have modestly increased in intensity over time, particularly in the social sciences. Our findings suggest that, besides one being routinely cautious that published small, highly-cited, and earlier studies may yield inflated results, the feasibility and costs of interventions to attenuate biases in the literature might need to be discussed on a discipline-specific and topic-specific basis.

Prehospital & Disaster Medicine
Volume 32 - Issue 2 - April 2017
https://www.cambridge.org/core/journals/prehospital-and-disaster-medicine/latest-issue
[New issue; No digest content identified]

Preventive Medicine
Volume 97, Pages 1-108 (April 2017)
http://www.sciencedirect.com/science/journal/00917435/96
[New issue; No digest content identified]

Proceedings of the Royal Society B
10 February 2016; volume 283, issue 1824
http://rspb.royalsocietypublishing.org/content/283/1824?current-issue=y
[No new digest content identified]

Public Health Ethics
Volume 9, Issue 3 November 2016
http://phe.oxfordjournals.org/content/current
[Reviewed earlier]

Public Health Reports
Volume 132, Issue 2, March/April 2017
http://phr.sagepub.com/content/current
[Reviewed earlier]

Qualitative Health Research
Volume 27, Issue 5, April 2017
http://qhr.sagepub.com/content/current
Special Issue: End of Life
[New issue; No digest content identified]

Reproductive Health
http://www.reproductive-health-journal.com/content
[Accessed 1 April 2017]
[No new digest content identified]

Revista Panamericana de Salud Pública/Pan American Journal of Public Health (RPSP/PAJPH)
Recently Published Articles -
http://www.paho.org/journal/index.php?option=com_content&view=featured&Itemid=101
[Reviewed earlier]

Risk Analysis
February 2017 Volume 37, Issue 2 Pages 193–397
http://onlinelibrary.wiley.com/doi/10.1111/risa.2017.37.issue-2/issuetoc
[Reviewed earlier]

Risk Management and Healthcare Policy
Volume 10, 2017
https://www.dovepress.com/risk-management-and-healthcare-policy-archive56
[Reviewed earlier]

Science
31 March 2017 Vol 355, Issue 6332
http://www.sciencemag.org/current.dtl
[New issue; No digest content identified]

Science Translational Medicine
29 March 2017 Vol 9, Issue 383
http://stm.sciencemag.org/
Research Articles
Using geospatial mapping to design HIV elimination strategies for sub-Saharan Africa
By Brian J. Coburn, Justin T. Okano, Sally Blower
Science Translational Medicine29 Mar 2017 Restricted Access
Mapping the geographic dispersion pattern of HIV-infected individuals in a sub-Saharan African country reveals the challenge to eliminating HIV.
Mapping a path to HIV elimination
About ~25 million individuals in sub-Saharan Africa are living with HIV. In new work, Coburn et al. design HIV elimination strategies for this region. The authors focused on Lesotho, where ~25% of the population is infected with HIV. They combined several large data sets and constructed a map that revealed the countrywide geographic dispersion pattern of HIV-infected individuals. They estimated that ~20% of the population lives in urban areas, and almost all rural communities have at least one HIV-infected individual. Their analyses showed that the

spatial dispersion of Lesotho's population hinders, and may even prevent, the elimination of HIV. This may hold true for other predominantly rural countries in sub-Saharan Africa.

Abstract

Treatment as prevention (TasP) has been proposed by the World Health Organization and the Joint United Nations Programme on HIV/AIDS (UNAIDS) as a global strategy for eliminating HIV. The rationale is that treating individuals reduces their infectivity. We present a geostatistical framework for designing TasP-based HIV elimination strategies in sub-Saharan Africa. We focused on Lesotho, where ~25% of the population is infected. We constructed a density of infection map by gridding high-resolution demographic data and spatially smoothing georeferenced HIV testing data. The map revealed the countrywide geographic dispersion pattern of HIV-infected individuals. We found that ~20% of the HIV-infected population lives in urban areas and that almost all rural communities have at least one HIV-infected individual. We used the map to design an optimal elimination strategy and identified which communities should use TasP. This strategy minimized the area that needed to be covered to find and treat HIV-infected individuals. We show that UNAIDS's elimination strategy would not be feasible in Lesotho because it would require deploying treatment in areas where there are ~4 infected individuals/km2. Our results show that the spatial dispersion of Lesotho's population hinders, and may even prevent, the elimination of HIV.

Report

Estimation of polio infection prevalence from environmental surveillance data

By Yakir Berchenko, Yossi Manor, Laurence S. Freedman, Ehud Kaliner, Itamar Grotto, Ella Mendelson, Amit Huppert

Science Translational Medicine29 Mar 2017 Restricted Access

Close monitoring of virus shed into sewage systems allows quantitative surveillance of a polio outbreak

Keeping an eye on polio

As the eyes are a mirror of the soul, a city's sewage is a reflection of its people's health. Berchenko et al. take advantage of a natural experiment in southern Israel to quantify this relationship for polio. By measuring virus shed into sewage waste in cities in which a known number of people received a live polio vaccine, the authors created tools that can be used to monitor polio incidence in other cities. Thus, virus levels in sewage waste can give an early warning of the reappearance of viral disease or verify its absence.

Abstract

A major obstacle to eradicating polio is that poliovirus from endemic countries can be reintroduced to polio-free countries. Environmental surveillance (ES) can detect poliovirus from sewage or wastewaters samples, even in the absence of patients with paralysis. ES is underused, in part because its sensitivity is unknown. We used two unique data sets collected during a natural experiment provided by the 2013 polio outbreak in Israel: ES data from different locations and records of supplemental immunization with the live vaccine. Data from the intersecting population between the two data sets (covering more than 63,000 people) yielded a dose-dependent relationship between the number of poliovirus shedders and the amount of poliovirus in sewage. Using a mixed-effects linear regression analysis of these data, we developed several quantitative tools, such as (i) ascertainment of the number of infected individuals from ES data for application during future epidemics elsewhere, (ii) evaluation of the sensitivity of ES, and (iii) determination of the confidence level of the termination of poliovirus circulation after an outbreak. These results will be valuable in monitoring future outbreaks with

ES, and this approach could be used to certify poliovirus elimination or to validate the need for more containment efforts.

Social Science & Medicine
Volume 176, Pages 1-182 (March 2017)
http://www.sciencedirect.com/science/journal/02779536/176
[Reviewed earlier]

Travel Medicine and Infectious Diseases
January-February, 2017 Volume 15
http://www.travelmedicinejournal.com/
[Reviewed earlier]

Tropical Medicine & International Health
March 2017 Volume 22, Issue 3 Pages 253–369
http://onlinelibrary.wiley.com/doi/10.1111/tmi.2017.22.issue-3/issuetoc
[Reviewed earlier]

Vaccine
Volume 35, Issue 17, Pages 2101-2278 (19 April 2017)
http://www.sciencedirect.com/science/journal/0264410X/35/17
Building Next Generation Immunization Supply Chains
Edited by Bruce Y. Lee, Benjamin Schreiber and Raja Rao
Articles organized under thematic areas:
:: Making the Case: how immunization supply chains impact vaccine coverage
:: Challenges
:: Toward next generation supply chains: Successful pilots
:: Toward next generation supply chains: Promising ideas and innovations
:: Toward next generation supply chains: Upstream solutions

Vaccine
Volume 35, Issue 16, Pages 1985-2100 (11 April 2017)
http://www.sciencedirect.com/science/journal/0264410X/35/16
Reviews
Facilitators and barriers of parental attitudes and beliefs toward school-located influenza vaccination in the United States: Systematic review
Review Article
Pages 1987-1995
Gloria J. Kang, Rachel K. Culp, Kaja M. Abbas
Abstract
The study objective was to identify facilitators and barriers of parental attitudes and beliefs toward school-located influenza vaccination in the United States. In 2009, the Advisory Committee on Immunization Practices of the Centers for Disease Control and Prevention expanded their recommendations for influenza vaccination to include school-aged children. We

conducted a systematic review of studies focused on facilitators and barriers of parental attitudes toward school-located influenza vaccination in the United States from 1990 to 2016. We reviewed 11 articles by use of the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework. Facilitators were free/low cost vaccination; having belief in vaccine efficacy, influenza severity, and susceptibility; belief that vaccination is beneficial, important, and a social norm; perception of school setting advantages; trust; and parental presence. Barriers were cost; concerns regarding vaccine safety, efficacy, equipment sterility, and adverse effects; perception of school setting barriers; negative physician advice of contraindications; distrust in vaccines and school-located vaccination programs; and health information privacy concerns. We identified the facilitators and barriers of parental attitudes and beliefs toward school-located influenza vaccination to assist in the evidence-based design and implementation of influenza vaccination programs targeted for children in the United States and to improve influenza vaccination coverage for population-wide health benefits.

Impact of meningococcal C conjugate vaccination four years after introduction of routine childhood immunization in Brazil

Original Research Article

Pages 2025-2033

Ana Lucia Andrade, Ruth Minamisava, Lisia Moura Tomich, Ana Paula Lemos, Maria Cecilia Gorla, Maria Cristina de Cunto Brandileone, Carla Madga S. Domingues, Camile de Moraes, Gabriela Policena, Ana Luiza Bierrenbach, Meningococcal Study Group

Abstract

Background

Routine infant immunization with meningococcal C conjugate (MCC) vaccination started in Brazil in November 2010, scheduled at three and five months plus a booster at 12–15 months of age. No catch-up was implemented. We assessed the impact of vaccination on meningococcal C disease (MenC) four years after vaccination start in the National Immunization Program.

Methods

We performed an ecological quasi-experimental design from 2008 to 2014 using a deterministic linkage between the National Notification and the National Reference Laboratory databases for meningitis. We conducted an interrupted time-series analysis considering Brazil except for Salvador municipality, because an epidemic of serogroup C disease occurred in this city, which prompted a mass vaccination campaign with catch-up for adolescents in 2010. Observed MenC rates in the post-vaccination period were compared to expected rates calculated from the pre-vaccination years. Results for Salvador were presented as descriptive data. An additional time-series analysis was performed for the state of São Paulo.

Results

A total of 18,136 MenC cases were analyzed. The highest incidence rates were observed for infants aged <12 months and no second incident peak was observed for adolescents. For Brazil, MenC rates were reduced by 67.2% (95%CI 43.0–91.4%) for infants <12 months of age, 92.0% (77.3–106.8%) for the age-group 12–23 months, and 64.6% (24.6–104.5%) for children aged 2–4 years. For children 5–9 years old, MenC rates reduced 19.2% (9.5–28.9%). Overall, 955 MenC cases were averted in Brazil in individuals aged <40 years after MCC vaccination. Results from São Paulo State, mirror the patterns seen in Brazil.

Conclusion

After four years of infants and toddlers vaccination start, MenC invasive disease reduced in the target population. This investigation provide a robust baseline to ascertain how much the

upcoming catch-up dose in 12–13 years of age will accelerate the decrease in MenC incidence rates among youths in Brazil.

Bacille Calmette-Guérin (BCG) vaccination at birth and antibody responses to childhood vaccines. A randomised clinical trial

Original Research Article
Pages 2084-2091
Thomas Nørrelykke Nissen, Nina Marie Birk, Gaby Smits, Dorthe Lisbeth Jeppesen, Lone Graff Stensballe, Mihai G. Netea, Fiona van der Klis, Christine Stabell Benn, Ole Pryds, The Calmette Study Group

Abstract
Introduction
BCG vaccination has been associated with beneficial non-specific effects on child health. Some immunological studies have reported heterologous effects of vaccines on antibody responses to heterologous vaccines. Within a randomised clinical trial of Bacille Calmette-Guérin (BCG) vaccination at birth, The Danish Calmette Study, we investigated the effect of BCG at birth on the antibody response to the three routine vaccines against DiTeKiPol/Act-Hib and Prevenar 13 in a subgroup of participants.
Methods
Within 7 days after birth, children were randomised 1:1 to BCG vaccination or to the control group (no intervention). After three routine vaccinations given at age 3, 5 and 12 months, antibodies against DiTeKiPol/Act-Hib and Prevenar 13 (Streptococcus pneumoniae serotype type 4, 6B, 9V, 14, 18C, 19F and 23F) were measured 4 weeks after the third vaccine dose.
Results
Among the 300 included children (178 BCG; 122 controls), almost all children (>96%) had antibody responses above the protective levels. Overall BCG vaccination at birth did not affect the antibody level. When stratifying by 'age at randomisation' we found a possible inducing effect of BCG on antibodies against B. pertussis and all pneumococcal serotypes, when BCG was given after the first day of life. Girls had significantly higher antibody levels for Haemophilus influenza type b and pneumococcus than boys.
Conclusions and relevance
Three routine vaccinations with DiTeKiPol/Act-Hib and Prevenar 13 induced sero-protective levels in almost all children. No overall effect of neonatal BCG vaccination was observed.

Vaccine
Volume 35, Issue 15, Pages 1817-1984 (4 April 2017)
http://www.sciencedirect.com/science/journal/0264410X/35/15

Reviews

Childhood pneumococcal disease in Africa – A systematic review and meta-analysis of incidence, serotype distribution, and antimicrobial susceptibility

Review Article
Pages 1817-1827
Pui-Ying Iroh Tam, Beth K. Thielen, Stephen K. Obaro, Ann M. Brearley, Alexander M. Kaizer, Haitao Chu, Edward N. Janoff

Abstract
Background

Determining the incidence, disease-associated serotypes and antimicrobial susceptibility of invasive pneumococcal disease (IPD) among children in Africa is essential in order to monitor the impact of these infections prior to widespread introduction of the pneumococcal conjugate vaccine (PCV).
Methods
To provide updated estimates of the incidence, serotype distribution, and antimicrobial susceptibility profile of Streptococcus pneumoniae causing disease in Africa, we performed a systematic review of articles published from 2000 to 2015 using Ovid Medline and Embase. We included prospective and surveillance studies that applied predefined diagnostic criteria. Meta-analysis for all pooled analyses was based on random-effects models.
Results
We included 38 studies consisting of 386,880 participants in 21 countries over a total of 350,613 person-years. The pooled incidence of IPD was 62.6 (95% CI 16.9, 226.5) per 100,000 person-years, including meningitis which had a pooled incidence of 24.7 (95% CI 11.9, 51.6) per 100,000 person-years. The pooled prevalence of penicillin susceptibility was 78.1% (95% CI 61.9, 89.2). Cumulatively, PCV10 and PCV13 included 66.9% (95% CI 55.9, 76.7) and 80.6% (95% CI 66.3, 90.5) of IPD serotypes, respectively.
Conclusions
Our study provides an integrated and robust summary of incidence data, serotype distribution and antimicrobial susceptibility for S. pneumoniae in children ≤5 years of age in Africa prior to widespread introduction of PCV on the continent. The heterogeneity of studies and wide range of incidence rates across the continent indicate that surveillance efforts should be intensified in all regions of Africa to improve the integrity of epidemiologic data, vaccine impact and cost benefit. Although the incidence of IPD in young children in Africa is substantial, currently available conjugate vaccines are estimated to cover the majority of invasive disease-causing pneumococcal serotypes. These data provide a reliable baseline from which to monitor the impact of the broad introduction of PCV.

Systematic review of the cost-effectiveness of influenza immunization programs
Review Article
Pages 1828-1843
Eon E.K. Ting, Beate Sander, Wendy J. Ungar
Abstract
Background
Seasonal influenza immunization programs vary widely across jurisdictions. In Canada, some provinces offer universal programs while others target specific population groups. However, whether targeted or universal programs provide more benefit and value-for-money is unclear. The cost-effectiveness of influenza immunization programs was systematically reviewed to inform policy.
Methods
Citation databases and the grey literature were searched for economic evaluations of influenza immunization programs. Eligible studies were appraised using the Scottish Intercollegiate Guidelines Network (SIGN) checklist with supplemental WHO vaccine-related questions. Data from high quality studies was extracted and the studies reviewed.
Results
A total of 41influenza immunization studies were identified. Of these, 31 were high quality. For pregnant and postpartum women, vaccinating all versus only high risk women study results ranged from dominance (less costly and more effective) to $9773 per QALY gained (societal)

and from dominance to $58,000 per QALY gained (healthcare system). Studies of vaccinating all versus only high risk children found vaccination to be dominant to $47,000 per QALY gained (societal), and dominant to $18,000 per QALY gained (healthcare system). Vaccinating high risk adults was highly cost-effective and vaccinating health care workers resulted in $35,000 per QALY gained. Results for healthy working adults were mixed and sensitive to vaccine uptake, efficacy, and productivity loss.
Conclusions
From the societal perspective, vaccination was cost-effective for children, pregnant and postpartum women, high risk groups, and in some cases, healthy working age adults. Immunization programs using group administration are more cost-effective than programs using individual administration. The perspective, programmatic design, setting, and inclusion of herd immunity affects cost-effectiveness. In regions with targeted programs, re-evaluating "high risk" criteria and consideration of a universal program is warranted.

The ADVANCE Code of Conduct for collaborative vaccine studies
Review Article
Pages 1844-1855
Xavier Kurz, Vincent Bauchau, Patrick Mahy, Steffen Glismann, Lieke Maria van der Aa, François Simondon, for the ADVANCE consortium
Abstract
Lessons learnt from the 2009 (H1N1) flu pandemic highlighted factors limiting the capacity to collect European data on vaccine exposure, safety and effectiveness, including lack of rapid access to available data sources or expertise, difficulties to establish efficient interactions between multiple parties, lack of confidence between private and public sectors, concerns about possible or actual conflicts of interest (or perceptions thereof) and inadequate funding mechanisms. The Innovative Medicines Initiative's Accelerated Development of VAccine benefit-risk Collaboration in Europe (ADVANCE) consortium was established to create an efficient and sustainable infrastructure for rapid and integrated monitoring of post-approval benefit-risk of vaccines, including a code of conduct and governance principles for collaborative studies. The development of the code of conduct was guided by three core and common values (best science, strengthening public health, transparency) and a review of existing guidance and relevant published articles. The ADVANCE Code of Conduct includes 45 recommendations in 10 topics (Scientific integrity, Scientific independence, Transparency, Conflicts of interest, Study protocol, Study report, Publication, Subject privacy, Sharing of study data, Research contract). Each topic includes a definition, a set of recommendations and a list of additional reading. The concept of the study team is introduced as a key component of the ADVANCE Code of Conduct with a core set of roles and responsibilities. It is hoped that adoption of the ADVANCE Code of Conduct by all partners involved in a study will facilitate and speed-up its initiation, design, conduct and reporting. Adoption of the ADVANCE Code of Conduct should be stated in the study protocol, study report and publications and journal editors are encouraged to use it as an indication that good principles of public health, science and transparency were followed throughout the study.

Assessing misclassification of vaccination status: Implications for studies of the safety of the childhood immunization schedule
Original Research Article
Pages 1873-1878

Matthew F. Daley, Jason M. Glanz, Sophia R. Newcomer, Michael L. Jackson, Holly C. Groom, Marlene M. Lugg, Huong Q. McLean, Nicola P. Klein, Eric S. Weintraub, Michael M. McNeil

Abstract

Background

To address public concern about the safety of the childhood immunization schedule, the Institute of Medicine recommended observational studies comparing adverse health outcomes of fully vaccinated children to children under-vaccinated due to parental choice. Misclassification of vaccination status could bias such studies.

Objective

To assess risk of misclassification of vaccination status within the Vaccine Safety Datalink (VSD).

Design/methods

A retrospective cohort study was conducted in three phases. In phase 1, electronic health record (EHR) data were used to identify patterns of under-vaccination during the first 24 months of life potentially due to parental choice. In phase 2, a random sample of records of under-vaccinated children was manually reviewed. In phase 3, a separate sample of parents were surveyed to assess whether EHR data accurately reflected their child's vaccination status. Phases 1 and 2 were conducted at 6 VSD sites, phase 3 at 1 site.

Results

The study cohort included 361,901 children born 2004 through 2012. By 24 months of age, 198,249 (54.8%) were fully vaccinated with no delays, 84,698 (23.4%) experienced delays but were fully vaccinated by 24 months of age, 4865 (1.3%) received no vaccines, 3789 (1.0%) delayed starting vaccination until ≥4 months of age, 4781 (1.3%) had consistent vaccine-limiting (≤2 vaccines per visit), and the remaining 65,519 (18.1%) were missing vaccine series or doses. When a diagnosis code for vaccine refusal was present in EHR data, encounter notes confirmed vaccine refusal as the reason for under-vaccination for nearly 100% of sampled records. Parent surveys confirmed these findings. Parents of under-vaccinated children were more likely to report visiting an alternative medical provider than parents of fully vaccinated children.

Conclusions

Specific groups of children, under-vaccinated due to parental choice, can be identified with relatively low likelihood of misclassification of vaccination status using EHR-based vaccine data and diagnosis codes.

Health professional feedback on HPV vaccination roll-out in a developing country

Original Research Article

Pages 1886-1891

Collette Venturas, Kanayo Umeh

Abstract

Background

Worldwide, Zambia has the highest cervical cancer incidence rates (58.4/100,000 per year) and mortality rates (36.2/100,000 per year). The human papilloma virus (HPV) vaccine is considered a vital preventative measure against cervical cancer, particularly in sub-Saharan countries, such as Zambia. Past research suggests health professionals' experiences with HPV vaccination rollout can have practical implications for effective delivery.

Objective

To explore health professionals' perspectives on the HPV vaccination programme in Zambia.

Methods

Researcher travelled to Zambia and conducted semi-structured interviews with fifteen health professionals working in private, government, and missionary clinics/hospitals. Observation was conducted for triangulation purposes. Thematic analysis was used to analyse the data.
Findings
Five main themes emerged; medical misconceptions about the HPV vaccination, particularly with regards to infertility; fear of the unknown, including possible side effects and inadequate empirical research; need for prior desensitisation to resolve cultural barriers prior to vaccination rollout; a rural-urban divide in health awareness, particularly in relation to cancer vaccines; and economic concerns associated with access to the HPV vaccination for most of the Zambian population.
Conclusion
Overall, the findings indicate that an essential avenue for facilitating HPV vaccination rollout in Zambia is by implementing a pre-rollout community effort that removes or softens cultural barriers, particularly in rural areas. It is also essential to correct erroneous HPV presumptions health professionals may have around infertility. Affordability remains a seemingly intractable hindrance that hampers HPV vaccination rollout in Zambia.

Analysis of the effects of individual and community level factors on childhood immunization in Malawi

Original Research Article
Pages 1907-1917
Peter Austin Morton Ntenda, Kun-Yang Chuang, Fentanesh Nibret Tiruneh, Ying-Chih Chuang
Abstract
Background
Empirical evidence regarding the relationship between childhood immunization and individual- and community-level factors in low-income countries has received little attention. We compared the trends and the effects of a wide range of individual- and community-level socioeconomic factors on the likelihood of a child being immunized between 2004 and 2010 in Malawi.
Methods
We used data from the 2004 and 2010 Malawi Demographic and Health Survey and applied generalized estimating logistic regression equation to analyze data respectively on 2042 and 3496 children aged 12–23 months. We compared the relationship between individual- and community-level socioeconomic factors and a child's vaccination status for four basic vaccines recommended by the World Health Organization: bacillus Calmette-Guérin (BCG) vaccine, diphtheria-tetanus-pertussis (DPT3) vaccine, oral polio vaccine (OPV3), and measles-containing vaccine 1 (MCV1).
Results
The trends of vaccination had a similar pattern in 2004 and 2010. The coverage of the four vaccinations was highest for BCG and lowest for OPV3 and complete immunization was higher in 2010. The multivariate analyses show that mother’s low education, having one or none antenatal visits, having no immunization card, having immunization card but not seen, residing in poor households, and living in central region were the most significant factors associated with decreased odds of achieving vaccination coverage and complete vaccination in both 2004 and 2010. However, maternal education was more likely to be associated with children’s immunization in 2010, while the geographical region was more likely to be associated with children’s immunization in 2004.
Conclusions

There were marked improvements in the national immunization coverage from 2004 to 2010. In order to achieve complete immunization, to further enhance the national immunization coverage as well as to lessen the gaps and disparities in childhood vaccination in Malawi, policy makers should design interventions based on the factors addressed in this study.

Vaccine: Development and Therapy
https://www.dovepress.com/vaccine-development-and-therapy-archive111
(Accessed 1 April 2017)
[No new content]

Vaccines — Open Access Journal
http://www.mdpi.com/journal/vaccines
(Accessed 1 April 2017)
[No new content]

Value in Health
March 2017 Volume 20, Issue 3, p309-518
http://www.valueinhealthjournal.com/current
[Reviewed earlier]

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

Cold Spring Harbor Perspectives in Biology
Published in Advance March 27, 2017, doi: 10.1101/cshperspect.a031583
What Is the Predictive Value of Animal Models for Vaccine Efficacy in Humans? Consideration of Strategies to Improve the Value of Animal Models
RS Herati, EJ Wherry -
Abstract
Animal models are an essential feature of the vaccine design toolkit. Although animal models have been invaluable in delineating the mechanisms of immune function, their precision in predicting how well specific vaccines work in humans is often suboptimal. There are, of course, many obvious species differences that may limit animal models from predicting all details of how a vaccine works in humans. However, careful consideration of which animal models may have limitations should also allow more accurate interpretations of animal model data and more accurate predictions of what is to be expected in clinical trials. In this article, we examine some of the considerations that might be relevant to cross-species extrapolation of vaccine-related immune responses for the prediction of how vaccines will perform in humans.

Journal of Community Health
First Online: 22 March 2017 DOI: 10.1007/s10900-017-0328-5

Practices and Attitudes of Missouri School Nurses Regarding Immunization Records and Select Immunizations of Graduating High School Seniors

Darson L. Rhodes, Michele Draper, Kendra Woolman, Carol Cox

Abstract

School nurses play a key role in maintaining a healthy student population, and one of their roles includes maintaining vaccination records. Further, they can play an important role in advocating for human papillomavirus (HPV) and meningococcal vaccination for students. All Missouri public high school nurses were sent an electronic survey addressing the knowledge, attitudes, and practices regarding immunization records and HPV and meningococcal vaccination of high school seniors. Approximately 75% of nurses reported their schools did not have or they did not know if the school had a written policy regarding the release of vaccination records. Approximately 1/2 and 1/3 of nurses do not communicate with parents/students about HPV or meningococcal vaccines, respectively. Although most favorable toward meningococcal, nurses had positive attitudes toward both vaccines. Recommendations include establishment of written policies regarding vaccination record release, and future research should focus on evaluating school nurses' communication methods regarding HPV and meningococcal vaccination.

* * * *

Media/Policy Watch

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

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

The Atlantic
http://www.theatlantic.com/magazine/
Accessed 1 April 2017
[No new, unique, relevant content]

BBC
http://www.bbc.co.uk/
Accessed 1 April 2017
[No new, unique, relevant content]

The Economist
http://www.economist.com/
Accessed 1 April 2017

Taking stock - Managing supplies of vaccines is a huge problem
New research asks how often vaccines are exposed to temperatures below the lower limit
Mar 30th 2017

Financial Times
http://www.ft.com/home/uk
Accessed 1 April 2017
[No new, unique, relevant content]

Forbes
http://www.forbes.com/
Accessed 1 April 2017
[No new, unique, relevant content]

Foreign Affairs
http://www.foreignaffairs.com/
Accessed 1 April 2017
[No new, unique, relevant content]

Foreign Policy
http://foreignpolicy.com/
Accessed 1 April 2017
[No new, unique, relevant content]

The Guardian
http://www.guardiannews.com/
Accessed 1 April 2017
[No new, unique, relevant content]

New Yorker
http://www.newyorker.com/
Accessed 1 April 2017
[No new, unique, relevant content]

New York Times
http://www.nytimes.com/
Accessed 1 April 2017
Meningitis C Kills 282 in Nigeria Amid Shortage of Vaccines
March 30, 2017 -

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and sustainable development – serving governments, international agencies, INGOs, civil society organizations (CSOs), commercial entities, consortia and alliances. CVEP maintains an academic affiliation with the Division of Medical Ethics, NYU School of Medicine, and an operating affiliation with the Vaccine Education Center of Children's Hospital of Philadelphia [CHOP].

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