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Vaccines and Global Health: The Week in Review
14 February 2015
Center for Vaccine Ethics & Policy (CVEP)

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

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

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

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

Editor's Note:
The continuing measles outbreak in the U.S. – traced to DisneyLand park in California and active in several U.S. states – continues to generate significant public debate about vaccines, hesitancy, parental responsibility, mandates, and the U.S. federal and state government's role in assuring immunization against infectious diseases generally. Please see *Journal Watch* and *Media Watch* below to see additional content and commentary on these issues.

PAHO: Recent measles outbreaks point to gaps in elimination efforts in the Americas
PAHO/WHO urges stepped-up surveillance and other measures to prevent the spread of measles cases imported from other regions

Washington, D.C., 10 February 2015 (PAHO/WHO) — Recent measles outbreaks in the United States and Brazil suggest that immunization rates in some areas have dropped below levels needed to prevent the spread of cases imported into the Americas, Pan American Health Organization/World Health Organization (PAHO/WHO) experts said today.

"Thanks to high levels of immunization, the Americas have been on track for more than a decade to be formally declared free of measles," said Dr. Cuauhtemoc Ruiz, head of PAHO/WHO's immunization program. "Maintaining high levels of vaccine coverage is key to preventing and halting outbreaks and to protect our populations from the constant threat of imported cases."

Measles has been considered eliminated from the Americas since 2002, due to the absence of endemic transmission of the disease. An international verification committee has been compiling evidence to support a formal declaration of the region as measles-free. This would make the Americas the world's first region to eliminate measles, in line with its similar achievements in eliminating smallpox in the 1970s and polio in the 1990s. Currently the region is also on track to be certified as free of rubella.

All these achievements have been the result of the region's success in achieving high levels of immunization, through routine immunization programs and mass vaccination campaigns such as the annual Vaccination Week in the Americas, which PAHO/WHO has spearheaded for the past 13 years .

Now, measles elimination "is facing major challenges, with several ongoing importations of measles in some countries," PAHO/WHO said in an epidemiological alert distributed yesterday to member countries across the region. The alert urges countries to strengthen measles surveillance activities and to "take appropriate measures to protect residents in the Americas against measles and rubella."…

WHO Fact Sheet: Measles
10 February 2015

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EBOLA/EVD [to 14 February 2015]
Public Health Emergency of International Concern (PHEIC); "Threat to international peace and security" (UN Security Council)

WHO: Ebola Situation Report – 11 February 2015
[Excerpt; Editor's text bolding]
SUMMARY
Total weekly case incidence increased for the second consecutive week, with 144 new confirmed cases reported in the week to 8 February. Guinea reported a sharp increase in incidence, with 65 new confirmed cases compared with 39 the week before. Transmission remains widespread in Sierra Leone, which reported 76 new confirmed cases, while the resurgence in cases in the western district of Port Loko continued for a second week. Liberia continues to report a low number of new confirmed cases.

Despite improvements in case finding and management, burial practices, and community engagement, the decline in case incidence has stalled. The spike in cases in Guinea and continued widespread transmission in Sierra Leone underline the considerable challenges that must still be overcome to get to zero cases. The infrastructure, systems, and people needed to end the epidemic are now in place; response measures must now be fully implemented.

The surge of new confirmed cases reported by Guinea was driven primarily by transmission in the capital, Conakry (21 confirmed cases) and the western prefecture of Forecariah (26 confirmed cases). Community engagement continues to be a challenge in Conakry and Forecariah, and in Guinea more widely. Almost one-third of the country's EVD-affected prefectures reported at least one security incident in the week to 8 February. Effective contact tracing, which relies on the cooperation of communities, has also proved challenging. In the week to 1 February, just 7 of 42 cases arose among registered contacts. A total of 34 unsafe burials were reported, with 21 EVD-positive deaths reported in the community.

Seven new confirmed cases were reported in the east-Guinean prefecture of Lola. A field team is currently deployed to Côte d'Ivoire to assess the state of preparedness in western areas of the country that border Lola.

Follow-up preparedness missions are planned for Mali and Senegal later this month, culminating in a tri-partite meeting between Guinea, Mali, and Senegal to strengthen cross-border surveillance.

A total of 3 confirmed cases was reported from Liberia. All of the cases originated from the same area of Montserrado county, linked to a single chain of transmission.

Following the steep decline in case incidence in Sierra Leone from December until the end of January, incidence has now stabilized. A total of 76 cases were reported in the week to 8 February, a decrease from the 80 confirmed cases reported in the week to 1 February, but higher than the 65 confirmed cases reported in the week to 25 January. Transmission remains widespread, with 7 districts reporting new confirmed cases. A total of 41 unsafe burials were reported in the week to 8 February.

The case fatality rate among hospitalized cases (calculated from all confirmed and probable hospitalized cases with a reported definitive outcome) remains high, between 53% and 60%.

COUNTRIES WITH WIDESPREAD AND INTENSE TRANSMISSION

There have been almost **23 000 reported confirmed, probable, and suspected cases** of EVD in Guinea, Liberia and Sierra Leone (table 1), **with almost 9000 reported deaths** (outcomes for many cases are unknown). A total of 65 new confirmed cases were reported in Guinea, 3 in Liberia, and 76 in Sierra Leone in the 7 days to 8 February (data missing for 8 February in Liberia). At the start of the epidemic many reported suspected cases were genuine cases of EVD. At this stage, with improved surveillance systems in place, a far smaller proportion of suspected cases are confirmed to have EVD. Consequently, the incidence of new confirmed cases gives a more accurate picture of the epidemic.

A stratified analysis of cumulative confirmed and probable cases indicates that the number of cases in males and females is similar (table 2). Compared with children (people aged 14 years and under), people aged 15 to 44 are approximately three times more likely to be affected. People aged 45 and over are almost four times more likely to be affected than are children.

A total of 830 confirmed health worker infections have been reported in the 3 intense-transmission countries; there have been 488 reported deaths (table 3)…

Foreign Medical Teams meeting on the Ebola response
17-19 February 2015
The World Health Organization holds Foreign Medical Teams meeting on the Ebola response on 17-19 February 2015 in Geneva.
The participants will discuss: the Foreign Medical Teams in phase II of the Ebola response - getting to zero; best practices at country level; the future of Foreign Medical Teams, priorities and next steps.

Sierra Leone's Rescue Team: Ebola survivors supporting each other
13 February 2015 -- The "Rescue Team", an association set up by Ebola survivors to help fellow survivors trying to put their lives back together again, is now exploring ways to contribute to the Ebola outbreak response in Sierra Leone.

Increasing community engagement for Ebola on-air
10 February 2015 -- WHO's social mobilization team is using radio to reach communities with information about how to prevent the spread of Ebola in Sierra Leone. "Now we are moving beyond awareness and knowledge, building into deep community engagement and ownership, where the community is key. It is vital that everyone in the community knows their role in achieving this goal," says Zainab Akiwumi, who leads the social mobilization team in Sierra Leone.

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UNMEER [to 14 February 2015]
https://ebolaresponse.un.org/un-mission-ebola-emergency-response-unmeer
:: **UNMEER Condemns Attacks Against Ebola Responders in Guinea** 14 Feb 2015
Editor's Note:
Based on our continuing assessment of the depth, range and continuity of UNMEER's daily External Situation Reports, we have suspended analysis and summarization of them with this edition of Week in Review. They are available in pdf form at:
https://ebolaresponse.un.org/resources

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U.S. Update on Ebola Response Includes Withdrawal of Almost All U.S. Troops from West Africa
[Excerpt: Text and Video]
Ten months ago, the first U.S. personnel deployed to West Africa to fight the Ebola outbreak on the frontlines in West Africa. This epidemic has grown into the deadliest Ebola outbreak the world has ever seen — and the President is committed to treating and tackling Ebola as both a national security priority, and an example of American leadership.
The U.S. has built, coordinated, and led a worldwide response to the Ebola outbreak while strengthening our preparedness here at home. And thanks to the hard work of our military members, civilian responders, and health care workers, we have dramatically bent the curve of the epidemic. Cases are down 80 percent from peak levels. With this improved outlook, the President is planning to bring virtually all of the troops who deployed to the region home by

April 30, while continuing to ramp up our civilian response beyond the 10,000 civilian workers who are already involved in our response effort…
U.S. White House – FACT SHEET: Progress in Our Ebola Response at Home and Abroad - February 11, 2015
[see full text at end of this edition]

CDC/MMWR Watch [to 14 February 2015]
http://www.cdc.gov/media/index.html
:: **MMWR Weekly, February 13, 2015 / Vol. 64 / No. 5**
- Addressing Needs of Contacts of Ebola Patients During an Investigation of an Ebola Cluster in the United States — Dallas, Texas, 2014
- Use of Group Quarantine in Ebola Control — Nigeria, 2014

USAID [to 14 February 2015]
http://www.usaid.gov/
United States Announces Additional Results in Grand Challenge to Fight Ebola
February 11, 2015
Innovations support current Ebola response and future epidemic preparedness
The U.S. Agency for International Development (USAID) announced today additional nominees for awards in the Fighting Ebola: a Grand Challenge for Development. A collaborative expert review identified 12 innovations that can reinforce the response to current and future Ebola outbreaks.

Statement from USAID Administrator, Rajiv Shah on the Ebola Response Transition
February 10, 2015
Our nation's life-saving response to the worst Ebola epidemic in history represents an impressive display of American values, commitment, and ingenuity. Even as the headlines have slowed, the tireless work of thousands of frontline health care workers and disasters responders has not. In a year marked by an unprecedented number of humanitarian crises—from South Sudan to Syria— we remain committed to providing help in an emergency, regardless of danger or difficulty. It is one of the most profound expressions of who we are as the American people.

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Ebola-hit Sierra Leone announces disease control agency
AFP | 10 February 2015
Sierra Leone announced Tuesday the launch of an infectious diseases prevention agency, saying it would convert its Ebola clinics into treatment and research units for some of the world's deadliest viruses. The organisation will follow the model of the United States Centers for Disease Control and Prevention, the leading American public health institute which has been at the forefront of the response the west African Ebola outbreak.

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Industry Watch [to 14 February 2015]
:: Novavax Announces Initiation of Ebola Vaccine Phase 1 Clinical Trial Supported by Non-Human Primate Challenge Data and Documented Rapid Manufacturing Capabilities
GAITHERSBURG, Md., Feb. 12, 2015 (GLOBE NEWSWIRE) -- Novavax, Inc. (Nasdaq:NVAX), a

clinical-stage vaccine company focused on the discovery, development and commercialization of recombinant nanoparticle vaccines and adjuvants, today announced that enrollment has begun in a Phase 1 clinical trial of its Ebola virus glycoprotein (GP) recombinant nanoparticle vaccine candidate adjuvanted with Matrix-M™ (Ebola GP Vaccine) in healthy subjects. Novavax initiated the development of its Ebola GP Vaccine shortly after the publication of the genetic sequence of the 2014 Ebola Makona strain (previously referred to as the 2014 Ebola Guinea strain), which is responsible for the current Ebola epidemic in West Africa. In an expedited time-frame, from the publication of the Makona sequence in September 2014, Novavax has developed the vaccine, scaled-up GMP manufacturing, delivered positive results from multiple relevant animal models, including a non-human primate challenge study, and today initiated a Phase 1 clinical trial…

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POLIO [to 14 February 2015]
Public Health Emergency of International Concern (PHEIC)

GPEI Update: Polio this week - *As of 11 February 2014*
Global Polio Eradication Initiative
[Editor's Excerpt and text bolding]
Full report: http://www.polioeradication.org/Dataandmonitoring/Poliothisweek.aspx
:: Nearly 230 000 children are to be vaccinated against polio during a 2-week campaign in Jeddah, Saudi Arabia, which launched on 8 February. Health teams will visit homes, health centers, shopping malls, airports, seaports and other places where people gather to reach every child. More
:: In January, the Expert Review Committee on Polio Eradication and Immunization (ERC) met in Nigeria to review progress and challenges. Whilst 6 months have passed since the most recent case of wild poliovirus was confirmed, the ERC concluded that Nigeria has a long way to go before this tentative progress can be taken as evidence that transmission of the virus has stopped. The ERC emphasized the importance of guarding against complacency in Nigeria, maintaining political commitment to increasing immunity levels in all areas, coordinating across borders with neighbouring countries, and strengthening planning for the potential of new wild poliovirus cases.
Selected country report content:
Pakistan
:: Two new wild poliovirus type 1 (WPV1) cases were reported in the past week. One case was reported in Khyber Pakhtunkhwa (KP) province, in Peshawar district, the first case in this district to be reported in 2015; and the other in the Federally Administered Tribal Areas (FATA), in South Waziristan with onset of paralysis in 2014. The total number of WPV1 cases in 2014 is now 306, and 7 for 2015. The most recent onset of paralysis was on 17 January 2015 in Peshawar.
:: One case of type 2 circulating vaccine-derived poliovirus (cVDPV2) has been reported this week in the Khigadap district of Sindh province, with onset of paralysis on 13 December. The number of cVDPV cases reported in 2014 is now 21.
West Africa
:: Even as polio programme staff across West Africa help to control the Ebola outbreak affecting the region, efforts are being made in those countries not affected by Ebola to vaccinate children against polio to create a buffer zone surrounding the affected countries. The Ebola crisis in western Africa continues to have an impact on the implementation of polio eradication activities

in Liberia, Guinea and Sierra Leone. Twenty two experts from the National Polio Surveillance Programme (NPSP) in India have been deployed for 3 months to strengthen surveillance systems and data collection for the Ebola response, demonstrating the polio legacy in action.

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WHO & Regionals [to 14 February 2015]
:: **Global Alert and Response (GAR): Disease Outbreak News (DONs)**
- 13 February 2015 Middle East respiratory syndrome coronavirus (MERS-CoV) – The Philippines
- 12 February 2015 Human infection with avian influenza A(H5N6) virus – China
- 11 February 2015 Middle East respiratory syndrome coronavirus (MERS-CoV) – Saudi Arabia
- 11 February 2015 Middle East respiratory syndrome coronavirus (MERS-CoV) – Qatar
- 11 February 2015 Middle East respiratory syndrome coronavirus (MERS-CoV) – United Arab Emirates

:: The **Weekly Epidemiological Record (WER) 13 February 2015,** vol. 90, 7 (pp. 45–56) includes:
:: Maternal and neonatal tetanus elimination: validation surveys in Lao People's Democratic Republic, December 2013

WHO Regional Offices
WHO African Region AFRO
:: Cholera prevention measures reduce transmission among displaced people in South Sudan - *09 February 2015*

WHO Region of the Americas PAHO
:: New PAHO/WHO publication gives guidance on early diagnosis of childhood cancer (02/12/2015)

:: Recent measles outbreaks point to gaps in elimination efforts in the Americas (02/10/2015)

WHO South-East Asia Region SEARO
No new digest content identified.

WHO European Region EURO
:: WHO opens office on primary health care in Kazakhstan 11-02-2015

WHO Eastern Mediterranean Region EMRO
:: Mobile clinics bring health services to communities in need in Iraq
7 February 2015 – In December 2014, WHO handed over 12 mobile medical clinics to the Federal Ministry of Health of Iraq and the Ministry of Health of the Kurdistan region to support the provision of primary health care services in underserved areas housing populations in need. Funding for the clinics was provided by Saudi Arabia. Four clinics were deployed to the Dohuk governorate, in which a large influx of large internally displaced people has put enormous pressure on the health system and its ability to deliver health care services…

WHO Western Pacific Region
No new digest content identified.

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IAVI Watch [14 February 2015]
http://www.iavi.org/press-releases/2015
IAVI RECEIVES GSK FUNDING FOR THE HUMAN VACCINES PROJECT TO ACCELERATE DEVELOPMENT OF VACCINES FOR INFECTIOUS DISEASES AND CANCER
February 13, 2015

NEW YORK – The International AIDS Vaccine Initiative (IAVI) has received a grant of US$350,000 from GSK to support implementation of the Human Vaccines Project, a new public-private partnership seeking to transform global disease prevention by collaboratively addressing some of the principal scientific problems impeding vaccine development across diseases.

The GSK grant will help to establish the Project's global consortium and plan its research program. The funding builds on a grant last year to IAVI by the Robert Wood Johnson Foundation for a series of workshops to explore how to accelerate development of vaccines via a Human Vaccines Project, by tackling the major scientific challenges impeding vaccine R&D through greater collaboration, increased knowledge sharing, and innovation. The first workshop, held in February 2014, focused on the scientific challenges to vaccine development, at which leading vaccine experts endorsed the Project's objectives and helped to frame its scientific plan.

Wayne C. Koff, IAVI Chief Scientific Officer and founding member of the Human Vaccines Project Board, announced the GSK grant during a symposium at the AAAS 2015 Annual Meeting in San Jose, CA…

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UNICEF Watch [to 14 February 2015]
No new digest content identified.

GAVI Watch [to 14 February 2015]
http://www.gavialliance.org/library/news/press-releases/
No new digest content identified.

Global Fund Watch [to 14 February 2015]
http://www.theglobalfund.org/en/mediacenter/
No new digest content identified.

Sabin Vaccine Institute Watch [to 14 February 2015]
http://www.sabin.org/updates/pressreleases
No new digest content identified.

PATH Watch [to 14 February 2015]
http://www.path.org/news/
No new digest content identified.

IVI Watch [to 14 February 2015]
http://www.ivi.org/web/www/home
No new digest content identified.

BMGF – Gates Foundation Watch [to 14 February 2015]
No new digest content identified.

NIH Watch [to 14 February 2015]
http://www.nih.gov/news/index.html

FDA Watch [to 14 February 2015]
http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/default.htm
No new digest content identified.

European Medicines Agency Watch [to 14 February 2015]
No new digest content identified.

European Vaccine Initiative Watch [to 14 February 2015]
http://www.euvaccine.eu/news-events
No new digest content identified.

DCVMN / PhRMA / EFPIA / IFPMA / BIO Watch [to 14 February 2015]
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

[U.S.] National Adult Immunization Plan - National Vaccine Program Office
DRAFT: February 5, 2015
Executive Summary

Vaccination is considered one of the most important public health achievements of the 20th century and continues to offer great promise in the 21st century. Vaccines save lives and improve the quality of life by preventing serious infectious diseases and their consequences. However, the benefits of vaccination are not realized equally across the U.S. population. Adult vaccination rates remain low in the United States, and significant racial and ethnic disparities also exist.

The U.S. Department of Health and Human Services National Vaccine Plan (NVP), released in 2010, is a road map for vaccines and immunization programs for the decade 2010–2020. While the NVP provides a vision for improving protection from vaccine-preventable diseases across the lifespan, vaccination coverage levels among adults are not on track to meet Healthy People

2020 targets. The National Vaccine Advisory Committee and numerous stakeholder groups have emphasized the need for focused attention on adult vaccines and vaccination.1 The National Adult Immunization Plan (NAIP) outlined here results from the recognition that progress has been slow, and there is a need for a national adult immunization strategic plan.

The NAIP is a five-year national plan. As a national plan, it will require engagement from a wide range of stakeholders to achieve its full vision. The plan emphasizes collaboration and prioritization of efforts that will have the greatest impact. The NAIP also aims to leverage the unique opportunity presented by the implementation of the Affordable Care Act.

The NAIP is intended to facilitate coordinated action by federal and nonfederal partners to protect public health and achieve optimal prevention of infectious diseases and their consequences through vaccination of adults. The NAIP includes indicators to draw attention to and track progress against core goals. These indicators will measure progress against set standards and inform future implementation and quality improvement efforts. The plan establishes four key goals, each of which is supported by objectives and strategies to guide implementation through 2020:

Goal 1: Strengthen the adult immunization infrastructure.
Goal 2: Improve access to adult vaccines.
Goal 3: Increase community demand for adult immunizations.
Goal 4: Foster innovation in adult vaccine development and vaccination-related technologies.

Achieving the goals of the NAIP is facilitated by agreement on plan priorities and coordination of the wide range of programs that support them. The Assistant Secretary for Health serves as the director of the National Vaccine Program and will lead the NAIP and its implementation. In support of this mission, NVPO will facilitate collaboration and coordinate the monitoring of progress for the NAIP.

CDC: Advisory Committee on Immunization Practices (ACIP) - Meeting: February 25-26, 2015

- Agenda
- Meeting Registration (U.S. citizens AND non-U.S. citizens)
  Deadline for meeting registration:
  Non-US Citizens: February 2, 2015; US Citizens: February 9, 2015

Journal Watch

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

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

The American Journal of Bioethics
Volume 15, Issue 2, 2015

http://www.tandfonline.com/toc/uajb20/current

Collectivizing Rescue Obligations in Bioethics

Jeremy R. Garretta*

DOI: 10.1080/15265161.2014.990163
pages 3-11
Published online: 12 Feb 2015

Abstract

Bioethicists invoke a duty to rescue in a wide range of cases. Indeed, arguably, there exists an entire medical paradigm whereby vast numbers of medical encounters are treated as rescue cases. The intuitive power of the rescue paradigm is considerable, but much of this power stems from the problematic way that rescue cases are conceptualized—namely, as random, unanticipated, unavoidable, interpersonal events for which context is irrelevant and beneficence is the paramount value. In this article, I critique the basic assumptions of the rescue paradigm, reframe the ethical landscape in which rescue obligations are understood, and defend the necessity and value of a wider social and institutional view. Along the way, I move back and forth between ethical theory and a concrete case where the duty to rescue has been problematically applied: the purported duty to regularly return incidental findings and individual research results in genomic and genetic research.

[Open Peer Commentaries are included reacting to this article]

American Journal of Infection Control

February 2015 Volume 43, Issue 2, p99-198
http://www.ajicjournal.org/current
[Reviewed earlier]

American Journal of Preventive Medicine

February 2015 Volume 48, Issue 2, p121-240
http://www.ajpmonline.org/current
[Reviewed earlier]

American Journal of Public Health

Volume 105, Issue 2 (February 2015)
http://ajph.aphapublications.org/toc/ajph/current
[Reviewed earlier]

American Journal of Tropical Medicine and Hygiene

February 2015; 92 (2)
http://www.ajtmh.org/content/current
[Reviewed earlier]

Annals of Internal Medicine

3 February 2015, Vol. 162. No. 3
http://annals.org/issue.aspx

[Reviewed earlier]

BMC Health Services Research
http://www.biomedcentral.com/bmchealthservres/content
(Accessed 14 February 2015)
Research article
Historical account of the national health insurance formulation in Kenya: experiences from the past decade
Timothy Abuya, Thomas Maina, Jane Chuma BMC Health Services Research 2015, 15:56 (12 February 2015)
Abstract | Provisional PDF
Research article
Streamlined research funding using short proposals and accelerated peer review: an observational study
Adrian G Barnett, Danielle L Herbert, Megan Campbell, Naomi Daly, Jason A Roberts, Alison Mudge, Nicholas Graves BMC Health Services Research 2015, 15:55 (7 February 2015)
Abstract | Full text | PDF

BMC Infectious Diseases
http://www.biomedcentral.com/bmcinfectdis/content
(Accessed 14 February 2015)
[No new relevant content]

BMC Medical Ethics
(Accessed 14 February 2015)
http://www.biomedcentral.com/bmcmedethics/content
[No new relevant content]

BMC Public Health
(Accessed 14 February 2015)
http://www.biomedcentral.com/bmcpublichealth/content
Research article
Health care providers' perceptions of and attitudes towards induced abortions in sub-Saharan Africa and Southeast Asia: a systematic literature review of qualitative and quantitative data
Ulrika Loi, Kristina Gemzell-Danielsson, Elisabeth Faxelid, Marie Klingberg-Allvin
BMC Public Health 2015, 15:139 (12 February 2015)
Abstract | Provisional PDF
Research article
Effectiveness of short message services reminder on childhood immunization programme in Kadoma, Zimbabwe - a randomized controlled trial, 2013
Donewell Bangure, Daniel Chirundu, Notion Gombe, Tawanda Marufu, Gibson Mandozana, Mufuta Tshimanga, Lucia Takundwa

BMC Public Health 2015, 15:137 (12 February 2015)
Abstract | Provisional PDF
Research article

The world health organization's health promoting schools framework: a Cochrane systematic review and meta-analysis

Rebecca Langford[1]*, Christopher Bonell[2], Hayley Jones[1], Theodora Pouliou[1], Simon Murphy[3], Elizabeth Waters[4], Kelli Komro[5], Lisa Gibbs[4], Dan Magnus[1] and Rona Campbell[1]
Author Affiliations
BMC Public Health 2015, 15:130 doi:10.1186/s12889-015-1360-y
Published: 12 February 2015
Abstract (provisional)
Background
Healthy children achieve better educational outcomes which, in turn, are associated with improved health later in life. The World Health Organization's Health Promoting Schools (HPS) framework is a holistic approach to promoting health and educational attainment in school. The effectiveness of this approach has not yet been rigorously reviewed.
Methods
We searched 20 health, education and social science databases, and trials registries and relevant websites in 2011 and 2013.We included cluster randomised controlled trials. Participants were children and young people aged four to 18?years attending schools/colleges. HPS interventions had to include the following three elements: input into the curriculum; changes to the school's ethos or environment; and engagement with families and/or local communities. Two reviewers identified relevant trials, extracted data and assessed risk of bias. We grouped studies according to the health topic(s) targeted. Where data permitted, we performed random-effects meta-analyses.
Results
We identified 67 eligible trials tackling a range of health issues. Few studies included any academic/attendance outcomes. We found positive average intervention effects for: body mass index (BMI), physical activity, physical fitness, fruit and vegetable intake, tobacco use, and being bullied. Intervention effects were generally small. On average across studies, we found little evidence of effectiveness for zBMI (BMI, standardized for age and gender), and no evidence for fat intake, alcohol use, drug use, mental health, violence and bullying others. It was not possible to meta-analyse data on other health outcomes due to lack of data. Methodological limitations were identified including reliance on self-reported data, lack of long-term follow-up, and high attrition rates.
Conclusion
This Cochrane review has found the WHO HPS framework is effective at improving some aspects of student health. The effects are small but potentially important at a population level.
Research article

Barriers to modern contraceptive methods uptake among young women in Kenya: a qualitative study

Rhoune Ochako, Mwende Mbondo, Stephen Aloo, Susan Kaimenyi, Rachel Thompson, Marleen Temmerman, Megan Kays
BMC Public Health 2015, 15:118 (10 February 2015)
Abstract | Provisional PDF

BMC Research Notes

(Accessed 14 February 2015)
http://www.biomedcentral.com/bmcresnotes/content
Short Report
Wealth and under-nourishment among married women in two impoverished nations: evidence from Burkina Faso and Congo Democratic Republic
Ayo Adebowale, Martin Palamuleni, Clifford Odimegwu BMC Research Notes 2015, 8:34 (8 February 2015)
Abstract | Provisional PDF

British Medical Journal
07 February 2015(vol 350, issue 7994)
http://www.bmj.com/content/350/7994
[Reviewed earlier; new issue of 14 Feb unavailable at review]

Bulletin of the World Health Organization
Volume 93, Number 2, February 2015, 65-132
http://www.who.int/bulletin/volumes/93/2/en/
[Reviewed earlier]

Clinical Infectious Diseases (CID)
Volume 60 Issue 4 February 15, 2015
http://cid.oxfordjournals.org/content/current
[Reviewed earlier]

Clinical Therapeutics
January 2015 Volume 37, Issue 1, p1-242
http://www.clinicaltherapeutics.com/current
[Reviewed earlier]

Complexity
January/February 2015 Volume 20, Issue 3 Pages fmi–fmi, 1–92
http://onlinelibrary.wiley.com/doi/10.1002/cplx.v20.3/issuetoc
[Reviewed earlier]

Conflict and Health
[Accessed 14 February 2015]
http://www.conflictandhealth.com/
Research
Assessing the experiences of intra-uterine device users in a long-term conflict setting: a qualitative study on the Thailand-Burma border
Gedeon J, Hsue SN, Walsh M, Sietstra C, MarSan H and Foster AM Conflict and Health 2015, 9:6 (12 February 2015)

Contemporary Clinical Trials
Volume 41, In Progress (March 2015)
[Reviewed earlier]

Cost Effectiveness and Resource Allocation
(Accessed 14 February 2015)
http://www.resource-allocation.com/
Research
Revisiting the cost-effectiveness of universal HPV-vaccination in Denmark accounting for all potentially vaccine preventable HPV-related diseases in males and females
Olsen J and Jørgensen TR Cost Effectiveness and Resource Allocation 2015, 13:4 (11 February 2015)
Abstract (provisional)
Objective
The purpose of this study was to assess the consequences of a national immunization program with HPV vaccine for both boys and girls in Denmark, including the prophylactic effects on all potentially vaccine preventable HPV-associated diseases in male and female.
Methods
The study focussed on the quadrivalent vaccine which protects against HPV type 6, 11, 16 and 18, and the vaccine's protection against genital warts, cervical intraepithelial neoplasia, cervical cancer, anogenital cancer (anal, penile, vaginal and vulvar cancer) and head and neck cancer (oral cavity, oropharyngeal, hypopharyngeal and laryngeal cancer) were included in the analyses. In general, the analysis was performed in two phases. First, an agent-based transmission model that described the HPV transmission without and with HPV vaccination was applied. Second, an analysis of the incremental costs and effects was performed. The model did not include naturally-acquired immunity to HPV in the simulations.
Results
In the base case result (i.e. vaccination of girls only, 85% vaccination rate, private market price at ? 123 per dose ex. VAT) an ICER of 3583 ?/QALY (3-dose regime) is estimated when all HPV-related diseases are taken into account. Vaccination of girls & boys vs. vaccination of girls only an ICER of 28,031 ?/QALY (2-dose regime) and 41,636 ?/QALY (3-dose regime) is estimated.
Conclusions
Extension of the current HPV programme in Denmark to include boys and girls is a cost effective preventive intervention that would lead to a faster prevention of cancers, cancer precursors and genital warts in men and women.

Current Opinion in Infectious Diseases
February 2015 - Volume 28 - Issue 1 pp: v-vi,1-116
http://journals.lww.com/co-infectiousdiseases/pages/currenttoc.aspx
[Reviewed earlier]

Developing World Bioethics

December 2014 Volume 14, Issue 3 Pages ii–iii, 111–167
http://onlinelibrary.wiley.com/doi/10.1111/dewb.2014.14.issue-3/issuetoc
[Reviewed earlier]

Development in Practice
Volume 25, Issue 1, 2015
http://www.tandfonline.com/toc/cdip20/current
[Reviewed earlier]

Emerging Infectious Diseases
Volume 21, Number 2—February 2015
http://wwwnc.cdc.gov/eid/
[Reviewed earlier]

Epidemics
Volume 9, In Progress (December 2014)
http://www.sciencedirect.com/science/journal/17554365
[Reviewed earlier]

Epidemiology and Infection
Volume 143 - Issue 03 - February 2015
http://journals.cambridge.org/action/displayIssue?jid=HYG&tab=currentissue
[Reviewed earlier]

The European Journal of Public Health
Volume 25, Issue 1, 01 February 2015
http://eurpub.oxfordjournals.org/content/24/6
[Reviewed earlier]

Eurosurveillance
Volume 20, Issue 6, 12 February 2015
http://www.eurosurveillance.org/Public/Articles/Archives.aspx?PublicationId=11678
Surveillance and outbreak reports
Surveillance of infant pertussis in Sweden 1998–2012; severity of disease in relation to the national vaccination programme
by RM Carlsson, K von Segebaden, J Bergström , AM Kling, L Nilsson
Review articles
Timeliness of epidemiological outbreak investigations in peer-reviewed European publications, January 2003 to August 2013
by EC van de Venter, I Oliver, JM Stuart

Global Health: Science and Practice (GHSP)
December 2014 | Volume 2 | Issue 4
http://www.ghspjournal.org/content/current
[Reviewed earlier]

Global Health Governance
[Accessed 14 February 2015]
http://blogs.shu.edu/ghg/category/complete-issues/summer-2013/
[No new relevant content]

Global Public Health
Volume 10, Issue 2, 2015
http://www.tandfonline.com/toc/rgph20/10/2#.VM2Niy5nBhU
Special Issue: Sexual and Reproductive Health and Rights for the next decades: What's been achieved? What lies ahead? [Reviewed earlier]
[Reviewed earlier]

Globalization and Health
[Accessed 14 February 2015]
http://www.globalizationandhealth.com/
Debate
Strengthening health systems in low-income countries by enhancing organizational capacities and improving institutions
Swanson RC, Atun R, Best A, Betigeri A, de Campos F, Chunharas S, Collins T, Currie G et al. Globalization and Health 2015, 11:5 (12 February 2015)
Research
Maternal mortality: a cross-sectional study in global health
Sajedinejad S, Majdzadeh R, Vedadhir AA, Tabatabaei MG and Mohammad K Globalization and Health 2015, 11:4 (12 February 2015)

Health Affairs
February 2015; Volume 34, Issue 2
http://content.healthaffairs.org/content/current
Biomedical Innovation
[Reviewed earlier]

Health and Human Rights
Volume 16, Issue 2 December 2014
http://www.hhrjournal.org/volume-16-issue-2/
Papers in Press: Special Issue on Health Rights Litigation
[Reviewed earlier]

Health Economics, Policy and Law
Volume 10 - Special Issue 01 January 2015
http://journals.cambridge.org/action/displayIssue?jid=HEP&tab=currentissue
SPECIAL ISSUE: Global Financial Crisis, Health and Health Care
[Reviewed earlier]

Health Policy and Planning
Volume 30 Issue 1 February 2015
http://heapol.oxfordjournals.org/content/current
[Reviewed earlier]

Health Research Policy and Systems
http://www.health-policy-systems.com/content
[Accessed 14 February 2015]
[No new relevant content]

Human Vaccines & Immunotherapeutics (formerly Human Vaccines)
Volume 10, Issue 11, 2014
http://www.landesbioscience.com/journals/vaccines/toc/volume/10/issue/9/
Special Issue on Vaccine Acceptance; Key focus on HPV vaccine uptake and maternal immunization
[Reviewed earlier]

Infectious Agents and Cancer
[Accessed 14 February 2015]
http://www.infectagentscancer.com/content
[No new relevant content]

Infectious Diseases of Poverty
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http://www.idpjournal.com/content
Research Article
An ecohealth assessment of poultry production clusters (PPCs) for the livelihood and biosecurity improvement of small poultry producers in Asia
Libin Wang, Edi Basuno, Tuan Nguyen, Worapol Aengwanich, Nyak Ilham and Xiaoyun Li
Infectious Diseases of Poverty 2015, 4:6 doi:10.1186/2049-9957-4-6
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Abstract (provisional)
Background
Poultry production cluster (PPC) programs are key strategies in many Asian countries to engage small commercial poultry producers in high-value production chains and to control infectious poultry diseases. This study assessed the multiple impacts of PPCs through a transdisciplinary ecohealth approach in four Asian countries, and drew the implications for small producers to

improve their livelihoods and reduce the risk of spreading infectious diseases in the poultry sector.
Methods
The data collection combined both quantitative and qualitative methods. It comprised: formal structured household survey questionnaires, measuring the biosecurity level of poultry farms with a biosecurity score card; and key informant interviews. Descriptive statistics were used to process the quantitative data and a content analysis was used to process the qualitative data.
Results
This research found that poultry farms in clusters do not necessarily have better economic performance than those outside PPCs. Many farmers in PPCs only consider them to be an advantage for expanding the scale of their poultry operations and improving household incomes, and they are less concerned about--and have limited capacities to--enhancing biosecurity and environmental management. We measured the biosecurity level of farms in PPCs through a 14-item checklist and found that biosecurity is generally very low across all sample sites. The increased flies, mosquitoes, rats, and smells in and around PPCs not only pollute the environment, but also cause social conflicts with the surrounding communities.
Conclusion
This research concluded that a poultry cluster, mainly driven by economic objectives, is not necessarily a superior model for the control of infectious diseases. The level of biosecurity in PPCs was found to be low. Given the intensity of poultry operations in PPCs (farms are densely packed into clusters), and the close proximity to residential areas of some PPCs, the risk of spreading infectious diseases, in fact, increases. Good management and collective action for implementing biosecurity measures are key for small producers in PPCs to address common challenges and pursue health-based animal production practices.

International Health
Volume 109 Issue 2 February 2015
http://trstmh.oxfordjournals.org/content/109/2.toc
Special issue: Innovative community-based vector control interventions for improved dengue and Chagas disease prevention in Latin America
[Reviewed earlier]

International Journal of Epidemiology
Volume 43 Issue 6 December 2014
http://ije.oxfordjournals.org/content/current
[Reviewed earlier]

International Journal of Infectious Diseases
April 2015 Volume 33, p1
http://www.ijidonline.com/current
[Reviewed earlier]

JAMA
February 10, 2015, Vol 313, No. 6

http://jama.jamanetwork.com/issue.aspx
Viewpoint / February 10, 2015
The 2014 Ebola Outbreak and Mental Health: Current Status and Recommended Response
FREE
James M. Shultz, MS, PhD1; Florence Baingana, MB, ChB, MMed (Psychiatry), MSc (HPPF)2; Yuval Neria, PhD3
Author Affiliations
JAMA. 2015;313(6):567-568. doi:10.1001/jama.2014.17934.
…CONCLUSIONS
Fear reactions are predictable and pervasive and may exacerbate disease spread in pandemic areas. Efforts to develop effective treatments and vaccines should be coupled with a response to help with efforts to control preventable viral transmission and support the psychological needs of the public overall as well as infected patients, family members, health care workers, and other responders. The West Africa pandemic provides insights into the psychological consequences associated with a "worst case scenario" event involving a highly virulent infectious disease. An effective response is essential both in West Africa to address the psychosocial needs associated with population-wide direct exposure to disease, death, and distress; and in the United States, to counterbalance fear-driven behaviors and policy making with prudent and effective preparedness for emerging infectious diseases.

JAMA Pediatrics
February 2015, Vol 169, No. 2
http://archpedi.jamanetwork.com/issue.aspx
[Reviewed earlier]

Journal of Community Health
Volume 40, Issue 1, February 2015
http://link.springer.com/journal/10900/40/1/page/1
[Reviewed earlier]

Journal of Epidemiology & Community Health
February 2015, Volume 69, Issue 2
http://jech.bmj.com/content/current
[Reviewed earlier]

Journal of Global Ethics
Volume 10, Issue 3, 2014
http://www.tandfonline.com/toc/rjge20/.U2V-Elf4L0I#.VAJEj2N4WF8
Tenth Anniversary Forum: The Future of Global Ethics
[Reviewed earlier]

Journal of Global Infectious Diseases (JGID)

January-March 2015 Volume 7 | Issue 1 Page Nos. 1-50
http://www.jgid.org/currentissue.asp?sabs=n
[Reviewed earlier]

Journal of Health Care for the Poor and Underserved (JHCPU)
Volume 25, Number 4, November 2014
http://muse.jhu.edu/journals/journal_of_health_care_for_the_poor_and_underserved/toc/hpu.25.4.html
[Reviewed earlier]

Journal of Health Organization and Management
Issue 6 – December 2014
http://link.springer.com/journal/10903/16/6/page/1
Special Focus: Mental Health and Wellness
[Reviewed earlier]

Journal of Immigrant and Minority Health
Volume 17, Issue 1, February 2015
http://link.springer.com/journal/10903/17/1/page/1
[Reviewed earlier]

Journal of Immigrant & Refugee Studies
Volume 12, Issue 4, 2014
http://www.tandfonline.com/toc/wimm20/current#.VFWeF8l4WF9
Special Issue: New Forms of Intolerance in European Political Life
[Reviewed earlier]

Journal of Infectious Diseases
Volume 211 Issue 5 March 1, 2015
http://jid.oxfordjournals.org/content/current
[Reviewed earlier]

The Journal of Law, Medicine & Ethics
Winter 2014 Volume 42, Issue 4 Pages 408–602
http://onlinelibrary.wiley.com/doi/10.1111/jlme.2014.42.issue-4/issuetoc
Special Issue: SYMPOSIUM: The Buying and Selling of Health Care
[Reviewed earlier]

Journal of Medical Ethics
February 2015, Volume 41, Issue 2
http://jme.bmj.com/content/current

[New issue; No relevant content]

Journal of Medical Internet Research
Vol 17, No 2 (2015): February
http://www.jmir.org/2015/2
[Reviewed earlier]

Journal of Medical Microbiology
February 2015; 64 (Pt 2)
http://jmm.sgmjournals.org/content/current
[Reviewed earlier]

Journal of the Pediatric Infectious Diseases Society (JPIDS)
Volume 3 Issue 4 December 2014
http://jpids.oxfordjournals.org/content/current
[Reviewed earlier]

Journal of Pediatrics
February 2015 Volume 166, Issue 2, p215-506
http://www.jpeds.com/current
[Reviewed earlier]

Journal of Public Health Policy
Volume 36, Issue 1 (February 2015)
http://www.palgrave-journals.com/jphp/journal/v36/n1/index.html
[Reviewed earlier]

Journal of the Royal Society – Interface
06 February 2015; volume 12, issue 103
http://rsif.royalsocietypublishing.org/content/current
[Reviewed earlier]

Journal of Virology
February 2015, volume 89, issue 3
http://jvi.asm.org/content/current
[Reviewed earlier]

The Lancet
Feb 14, 2015 Volume 385 Number 9968 p577-662 e7-e11
http://www.thelancet.com/journals/lancet/issue/current

Comment

Older people's health in sub-Saharan Africa

Isabella A G Aboderin, John R Beard

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Awareness is growing that the world's population is rapidly ageing. Although much of the related policy debate is about the implications for high-income countries, attention is broadening to less developed settings.[1] Middle-income country populations, in particular, are generally ageing at a much faster rate than was the case for today's high-income countries, and the health of their older populations could be substantially worse.[2] However, little consideration has been given to issues of old age in sub-Saharan Africa, which remains the world's poorest and youngest region.[3] Development and health agendas for that region, including those being discussed in relation to targets to succeed the Millennium Development Goals,[4] understandably centre on how to increase the capacity of and opportunities for the region's young people. Yet strong arguments exist for why the health of older people (aged 60 years and older) should not be overlooked. Not least is the substantial size of these populations—already double the number of older adults in northern Europe—which is expected to grow faster than anywhere else, increasing from 46 million in 2015 to 157 million by 2050.[5] Furthermore, life expectancy at age 60 years in sub-Saharan Africa is 16 years for women and 14 years for men, suggesting that, for those who survive early life, a long old age is already a reality.[2]

However, perhaps the most important reason to consider the older population in present plans for increased human and economic wellbeing in sub-Saharan Africa is that, contrary to common assumptions, older Africans play roles that are crucial to achievement of this wellbeing. Within families, older people are often carers or guardians of younger kin. They directly shape younger generations' access to health, education, and other capabilities, and thus their future human capital. The extent of older people's caregiving is increasingly recognised in the context of HIV/AIDS—more than 60% of orphaned children in Namibia and Zimbabwe, for example, are looked after by their grandmothers.[5] This care function is also important in everyday settings of poverty or labour-related parental absence—in the urban slums of Nairobi, Kenya, for instance, more than 30% of older women and 20% of older men (aged 60 years or older) care for one or more non-biological child (African Population and Health Research Center, Centre for Research on Ageing, University of Southampton, unpublished).

Beyond the family, older African people have key economic roles. In most sub-Saharan African countries, older people largely remain in the labour force,[6] particularly in smallholder agriculture, which encompasses the bulk of food production and must be revitalised if nutrition security and sufficient job opportunities are to be ensured for younger generations. As a result of selective rural–urban outmigration, incapacity, or uninterest of younger adults in farming, older people constitute a substantial share of smallholders. In Kenya, for example, the average age of a farmer is estimated to be 60 years.[7] Similarly, preliminary analyses of national survey data from Malawi and Kenya show close to 20% of decision makers on smallholder land use in both countries to be aged 60 years and older (African Population and Health Research Center, unpublished). The extent to which older African people can execute their social and economic functions effectively depends heavily on their physical and mental capacity.[8], [9] Conversely, if their health deteriorates to a point at which they themselves need care, the responsibility is likely to fall on female younger kin, whose own health, and employment and education

opportunities, can be affected.10 Impaired health in older age in sub-Saharan Africa thus affects not only older individuals, but families, communities, and prospects for development more broadly.

Yet older African people face a large morbidity and disability burden, particularly from chronic disease. Our preliminary analysis of 2010 Global Burden of Disease data identifies cardiovascular and circulatory disease, nutritional deficiencies, cirrhosis of the liver, and diabetes as major causes of disability-adjusted life years in sub-Saharan Africa's older population. Moreover, representative surveys of older adults' health show high rates of hypertension,11 musculoskeletal disease,12 visual impairment,13 functional limitations,9 and depression.14 Additionally, infectious diseases continue to affect older Africans, underscored by a substantial prevalence of HIV infection and its exacerbating effect on several non-communicable diseases.15 At the same time, evidence of heterogeneity in health and function within older populations and the importance of modifiable factors in shaping it underscore the importance of health-promoting interventions to enable successful ageing in the region.16 Yet a large proportion of, or even most, older Africans lack the requisite care—results of the WHO Study on Adult Health and Ageing11 in Ghana, for example, showed 96% of those with hypertension to have no adequate treatment for the disorder.

A crucial but often omitted perspective is a comparison with younger age groups. Illness and disability rates of older people substantially outstrip those of younger adults.17, 18 This contrasts starkly with findings from high-income countries that show older age to be an increasingly unreliable predictor of greater morbidity or impaired function.19 Yet, despite having worse health than younger age groups, older people in sub-Saharan Africa have been observed to use health services substantially less than younger people do.17, 18 This disparity points to possible age-based inequalities in access to health care that need attention in addition to the widely considered axes of inequities in health (ie, economic status, sex, ethnic origin, or rural or urban residence).

Barriers to health care faced by older African people include absence of an escort or high costs of transport to health providers, and private sector fees for medicines or treatment.18, 20 Older patients use commercial providers because of the unavailability, perceived poor quality, or age insensitivity of services in government facilities.18 These providers, in a bid to achieve the health Millennium Development Goals, typically remain focused on services for infectious diseases, children, and reproductive age adults.18, 20 The supply-side difficulties are exacerbated by important demand-side factors. Such obstacles include resource allocation norms within poor families, which can prioritise the needs of the young at the expense of the old, and older adults' often little appreciation of the value of, or need for, management of asymptomatic chronic disease.18, 20

In view of the direct importance of older African people's physical and mental health for the achievement of core development goals, their burden of ill health and likely inequitable access to necessary care provide compelling economic and social grounds for action. These needs should be incorporated into emergent frameworks for attainment of universal health coverage in sub-Saharan Africa in the form of a commitment to maintenance of health and function across the entire life course. Essential action on non-communicable diseases, in particular, will need to extend beyond a focus on prevention of early mortality from key diseases to include provision of chronic care for key non-fatal disorders that affect the function of older

populations. However, such a commitment will need to be accompanied by concerted evidence generation if it is to be converted into practice. Such research will need to: better define health needs and care gaps for older Africans; identify feasible and effective models for adaptation of health systems in sub-Saharan Africa; and persuade decision makers to invest in these models. Longitudinal studies such as the WHO Study on Adult Health and Ageing or 10/66 dementia research are starting to improve understanding of priority intervention needs in a small number of sub-Saharan African countries. However, further social and epidemiological investigations are needed in these and other national contexts. These studies will need to be complemented by assessments of effectiveness of the few existing health financing, human resource, essential medicine or technology, and service delivery approaches targeted at older people in sub-Saharan Africa, and by design and testing of new models.

Lastly, national evidence on possible age-based health inequities and economic effects of ill health in the older population is needed to help garner political will for action. Such information could be generated—as part of the called-for data revolution for the post-Millennium Development Goals agenda—through systematic expansions to sampling, data collection, or analysis protocols of routine surveys, such as Demographic and Health Surveys, regularly undertaken by countries in sub-Saharan Africa. The fact that developing-country governments have launched a joint Commission on Ageing in Developing Countries bodes well. This Commission should help promote the necessary research and operationalisation of emerging findings by policy makers and external drivers of health-system development in sub-Saharan Africa.

We declare no competing interests.

References

Bloom, DE, Börsch-Supan, A, McGee, P, and Seike, A. Population ageing: macro challenges and policy responses. in: JR Beard, S Biggs, DE Bloom, (Eds.) Global ageing: peril or promise?World Economic Forum, Geneva; 2012: 35–38
View in Article

WHO. Good health adds life to years. Global brief for World Health Day 2012. World Health Organization, Geneva; 2012
View in Article

UN Population Division. World population prospects: the 2012 revision. http://esa.un.org/unpd/wpp/index.htm. ((accessed Dec 20, 2013).)
View in Article

UN Economic Commission for Africa. Africa regional consultative meeting on the sustainable development goals. Outcome document. United Nations Economic Commission for Africa, Addis Ababa; 2013
View in Article

UNICEF. The state of the world's children: the double dividend of gender equality. United Nations Children's Fund, Geneva; 2007
View in Article

UN Population Division. Population ageing and development 2012. United Nations, New York; 2012
View in Article

Olwande, J and Mathenge, M. Market participation among poor rural households in Kenya. Tegemeo Institute of Agricultural Policy and Development, Nairobi; 2011
View in Article

Skovdal, M, Campbell, C, Madanhire, C, Nyamukapa, C, and Gregson, S. Challenges faced by elderly guardians in sustaining the adherence to antiretroviral therapy in HIV-infected children in Zimbabwe. AIDS Care. 2011; 23: 957–964
View in Article
Payne, CF, Mkandawire, J, and Kohler, HP. Disability transitions and health expectancies among adults 45 years and older in Malawi: a cohort-based model. PLoS Med. 2013; 10: e1001435
View in Article
Aboderin I, Hoffman J. Care for dependent older people in sub-Saharan Africa: recognizing and addressing a "cultural lag". 20th International Association of Gerontology and Geriatrics World Congress of Gerontology and Geriatrics; Seoul, South Korea; June 23–27, 2013.
View in Article
Lloyd-Sherlock, P, Beard, J, Minicuci, N, Ebrahim, S, and Chatterji, S. Hypertension among older adults in low and middle income countries: prevalence, awareness and control. Int J Epidemiol. 2014; 43: 116–128
View in Article
Clausen, T, Romøren, TI, Ferreira, M, Kristensen, P, Ingstad, B, and Holmboe-Ottensen, G. Chronic diseases and health inequalities in older persons in Botswana (southern Africa): a national survey. J Nutr Health Aging. 2005; 9: 455–461
View in Article
Bekibele, CO and Gureje, O. Self-reported visual impairment and impact on vision-related activities in an elderly Nigerian population: report from the Ibadan Study of Ageing. Ophthalmic Epidemiol. 2008; 15: 250–256
View in Article
Gureje, O, Kola, L, and Afolabi, E. Epidemiology of major depressive disorder in elderly Nigerians in the Ibadan Study of Ageing: a community-based survey. Lancet. 2007; 370: 957–964
View in Article
Mills, EJ, Barnighausen, T, and Negin, J. HIV and aging—preparing for the challenges ahead. N Engl J Med. 2012; 366: 1270–1273
View in Article
Gureje, O, Oladeji, BD, Abiona, T, and Chatterji, S. Profile and determinants of successful aging in the Ibadan Study of Ageing. J Am Geriatr Soc. 2014; 62: 836–842
View in Article
McIntyre, D. Health policy and older people in Africa. in: P Lloyd-Sherlock (Ed.) Living longer. Ageing, development and social protection. Zed Books, London; 2004: 160–183
View in Article
Aboderin, I and Kizito, P. Dimensions and determinants of health in old age in Kenya. National Coordinating Agency for Population and Development, Nairobi; 2010
View in Article
Lowsky, DJ, Olshansky, SJ, Bhattacharya, J, and Goldman, DP. Heterogeneity in healthy aging. J Gerontol A Biol Sci Med Sci. 2014; 69: 640–649
View in Article
Olukoya, P. Ghana country assessment report on ageing and health. World Health Organization, Geneva; 2014
View in Article

Articles

A population-based, multifaceted strategy to implement antenatal corticosteroid treatment versus standard care for the reduction of neonatal mortality due to preterm birth in low-income and middle-income countries: the ACT cluster-randomised trial

Dr Fernando Althabe, MD, José M Belizán, MD, Elizabeth M McClure, PhD, Jennifer Hemingway-Foday, MPH, Mabel Berrueta, MD, Agustina Mazzoni, MD, Alvaro Ciganda, BIT, Prof Shivaprasad S Goudar, MD, Prof Bhalachandra S Kodkany, MD, Prof Niranjana S Mahantshetti, MD, Prof Sangappa M Dhaded, DM, Geetanjali M Katageri, MD, Prof Mrityunjay C Metgud, MD, Anjali M Joshi, BAMS, Prof Mrutyunjaya B Bellad, MD, Narayan V Honnungar, MBBS, Prof Richard J Derman, MD, Sarah Saleem, MBBS, Omrana Pasha, MD, Sumera Ali, MD, Farid Hasnain, PhD, Prof Robert L Goldenberg, MD, Fabian Esamai, MBChB, Paul Nyongesa, MD, Silas Ayunga, MD, Edward A Liechty, MD, Ana L Garces, MD, Lester Figueroa, MD, Prof K Michael Hambidge, MD, Nancy F Krebs, MD, Prof Archana Patel, MD, Anjali Bhandarkar, MD, Manjushri Waikar, MD, Prof Patricia L Hibberd, MD, Prof Elwyn Chomba, MD, Prof Waldemar A Carlo, MD, Angel Mwiche, MD, Melody Chiwila, RN, Albert Manasyan, MD, Sayury Pineda, MD, Sreelatha Meleth, PhD, Vanessa Thorsten, MPH, Kristen Stolka, MPH, Dennis D Wallace, PhD, Marion Koso-Thomas, MD, Prof Alan H Jobe, MD, Prof Pierre M Buekens, MD

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Summary

Background

Antenatal corticosteroids for pregnant women at risk of preterm birth are among the most effective hospital-based interventions to reduce neonatal mortality. We aimed to assess the feasibility, effectiveness, and safety of a multifaceted intervention designed to increase the use of antenatal corticosteroids at all levels of health care in low-income and middle-income countries.

Methods

In this 18-month, cluster-randomised trial, we randomly assigned (1:1) rural and semi-urban clusters within six countries (Argentina, Guatemala, India, Kenya, Pakistan, and Zambia) to standard care or a multifaceted intervention including components to improve identification of women at risk of preterm birth and to facilitate appropriate use of antenatal corticosteroids. The primary outcome was 28-day neonatal mortality among infants less than the 5th percentile for birthweight (a proxy for preterm birth) across the clusters. Use of antenatal corticosteroids and suspected maternal infection were additional main outcomes. This trial is registered with ClinicalTrials.gov, number NCT01084096.

Findings

The ACT trial took place between October, 2011, and March, 2014 (start dates varied by site). 51 intervention clusters with 47 394 livebirths (2520 [5%] less than 5th percentile for birthweight) and 50 control clusters with 50 743 livebirths (2258 [4%] less than 5th percentile) completed follow-up. 1052 (45%) of 2327 women in intervention clusters who delivered less-than-5th-percentile infants received antenatal corticosteroids, compared with 215 (10%) of 2062 in control clusters (p<0·0001). Among the less-than-5th-percentile infants, 28-day neonatal mortality was 225 per 1000 livebirths for the intervention group and 232 per 1000 livebirths for the control group (relative risk [RR] 0·96, 95% CI 0·87–1·06, p=0·65) and suspected maternal infection was reported in 236 (10%) of 2361 women in the intervention group and 133 (6%) of 2094 in the control group (odds ratio [OR] 1·67, 1·33–2·09, p<0·0001). Among the whole population, 28-day neonatal mortality was 27·4 per 1000 livebirths for the intervention group and 23·9 per 1000 livebirths for the control group (RR 1·12, 1·02–1·22,

p=0·0127) and suspected maternal infection was reported in 1207 (3%) of 48 219 women in the intervention group and 867 (2%) of 51 523 in the control group (OR 1·45, 1·33–1·58, p<0·0001).

Interpretation

Despite increased use of antenatal corticosteroids in low-birthweight infants in the intervention groups, neonatal mortality did not decrease in this group, and increased in the population overall. For every 1000 women exposed to this strategy, an excess of 3·5 neonatal deaths occurred, and the risk of maternal infection seems to have been increased.

Funding

Eunice Kennedy Shriver National Institute of Child Health and Human Development.

Series

Subjective wellbeing, health, and ageing

Prof Andrew Steptoe, DPhil, Prof Angus Deaton, PhD, Prof Arthur A Stone, PhD

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Summary

Subjective wellbeing and health are closely linked to age. Three aspects of subjective wellbeing can be distinguished—evaluative wellbeing (or life satisfaction), hedonic wellbeing (feelings of happiness, sadness, anger, stress, and pain), and eudemonic wellbeing (sense of purpose and meaning in life). We review recent advances in the specialty of psychological wellbeing, and present new analyses about the pattern of wellbeing across ages and the association between wellbeing and survival at older ages. The Gallup World Poll, a continuing survey in more than 160 countries, shows a U-shaped relation between evaluative wellbeing and age in high-income, English speaking countries, with the lowest levels of wellbeing in ages 45–54 years. But this pattern is not universal. For example, respondents from the former Soviet Union and eastern Europe show a large progressive reduction in wellbeing with age, respondents from Latin America also shows decreased wellbeing with age, whereas wellbeing in sub-Saharan Africa shows little change with age. The relation between physical health and subjective wellbeing is bidirectional. Older people with illnesses such as coronary heart disease, arthritis, and chronic lung disease show both increased levels of depressed mood and impaired hedonic and eudemonic wellbeing. Wellbeing might also have a protective role in health maintenance. In an analysis of the English Longitudinal Study of Ageing, we identify that eudemonic wellbeing is associated with increased survival; 29·3% of people in the lowest wellbeing quartile died during the average follow-up period of 8·5 years compared with 9·3% of those in the highest quartile. Associations were independent of age, sex, demographic factors, and baseline mental and physical health. We conclude that the wellbeing of elderly people is an important objective for both economic and health policy. Present psychological and economic theories do not adequately account for the variations in patterns of wellbeing with age across different parts of the world. The apparent association between wellbeing and survival is consistent with a protective role of high wellbeing, but alternative explanations cannot be ruled out at this stage.

Series

Macroeconomic implications of population ageing and selected policy responses

Prof David E Bloom, PhD, Somnath Chatterji, MD, Paul Kowal, PharmD, Peter Lloyd-Sherlock, PhD, Prof Martin McKee, DSc, Bernd Rechel, PhD, Larry Rosenberg, MPA, James P Smith, PhD

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Summary

Between now and 2030, every country will experience population ageing—a trend that is both pronounced and historically unprecedented. Over the past six decades, countries of the world had experienced only a slight increase in the share of people aged 60 years and older, from 8% to 10%. But in the next four decades, this group is expected to rise to 22% of the total population—a jump from 800 million to 2 billion people. Evidence suggests that cohorts entering older age now are healthier than previous ones. However, progress has been very uneven, as indicated by the wide gaps in population health (measured by life expectancy) between the worst (Sierra Leone) and best (Japan) performing countries, now standing at a difference of 36 years for life expectancy at birth and 15 years for life expectancy at age 60 years. Population ageing poses challenges for countries' economies, and the health of older populations is of concern. Older people have greater health and long-term care needs than younger people, leading to increased expenditure. They are also less likely to work if they are unhealthy, and could impose an economic burden on families and society. Like everyone else, older people need both physical and economic security, but the burden of providing these securities will be falling on a smaller portion of the population. Pension systems will be stressed and will need reassessment along with retirement policies. Health systems, which have not in the past been oriented toward the myriad health problems and long-term care needs of older people and have not sufficiently emphasised disease prevention, can respond in different ways to the new demographic reality and the associated changes in population health. Along with behavioural adaptations by individuals and businesses, the nature of such policy responses will establish whether population ageing will lead to major macroeconomic difficulties.

The Lancet Global Health
Feb 2015 Volume 3 Number 2 e62-e112
http://www.thelancet.com/journals/langlo/issue/current
[Reviewed earlier]

The Lancet Infectious Diseases
Feb 2015 Volume 15 Number 2 p131-248
http://www.thelancet.com/journals/laninf/issue/current
[Reviewed earlier]

Maternal and Child Health Journal
Volume 19, Issue 2, February 2015
http://link.springer.com/journal/10995/19/1/page/1
Special Issue : MCH Leadership
[19 articles focused around MCH leadership themes]
[Reviewed earlier]

Medical Decision Making (MDM)
February 2015; 35 (2)
http://mdm.sagepub.com/content/current
[New issue; No relevant content]

The Milbank Quarterly
A Multidisciplinary Journal of Population Health and Health Policy
December 2014 Volume 92, Issue 4 Pages 633–840
http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1468-0009/currentissue
[Reviewed earlier]

Nature
Volume 518 Number 7538 pp137-268 12 February 2015
http://www.nature.com/nature/current_issue.html
Nature | Editorial
Spot the difference
The US measles outbreak highlights why most states should reconsider their vaccination rules.
11 February 2015

Over the past decade, increasing numbers of US parents have chosen not to vaccinate their children against diseases such as whooping cough, mumps and measles. The consequence has been a periodic return of these historical scourges, in localized outbreaks of a few dozen to a few hundred people. These episodes often appear in local news reports, some of which warn that lower vaccination rates could result in a nationwide outbreak.

Reading the US news media over the past two weeks, you might conclude that that day has come. The current US measles outbreak, which began in December and was first reported in late January, has blown up into a national debate over the rights of parents to decide whether their children should be vaccinated. But by global standards, it is a tempest in a teapot: as of 6 February, measles had struck 121 people in 17 states and the District of Columbia.

Those numbers are unremarkable. Since October, a measles outbreak has affected more than 370 people in Germany; it saw almost 1,800 cases in 2013 and more than 1,600 in 2011. The Philippines had more than 50,000 cases in 2014. The United Kingdom had only 137 cases last year, but in both 2012 and 2013 it had close to 2,000 (see page 148).

In fact, even by US standards, the current outbreak is not unprecedented. Last year, a much larger outbreak was sparked by Amish missionaries returning from the Philippines to Ohio, where low vaccination rates among the community caused 383 cases.

Perhaps that incident stayed out of the national spotlight because it was an unusual set of circumstances that occurred in an isolated rural community. But the current outbreak centres on 'the happiest place on Earth' — Disneyland in southern California. At least 42 people seem to have been exposed to measles at the theme park, which receives an estimated 16 million visits a year.

Fortunately for the public's health, attention around the outbreak has come down in favour of vaccination and against the myths about its dangers. Public opinion has turned against parents and physicians who are suspicious of vaccines. Two potential Republican presidential candidates, Governor Chris Christie of New Jersey and Senator Rand Paul of Kentucky, at first declared that parents should have the right to decide whether their children are vaccinated, and then had to clarify their positions in the face of harsh criticism.

Whether or not the theme park's involvement in the episode contributed to the media coverage, Disneyland's cherished place in US culture makes it ideal for an infectious-disease outbreak. It is popular with international tourists eager for a quintessential American experience, who as a group are less likely than US residents to be vaccinated. The park also

hosts large numbers of infants less than one year old — younger than the age at which the first measles shot is generally given in the United States.

And Disneyland is at the epicentre of the US anti-vaccine movement. Although 94.7% of US children entering school at around age 5 are vaccinated against measles, in hundreds of California schools the percentage of vaccinated children falls well short of the 92% considered necessary to produce the 'herd immunity' that prevents transmission of the disease. The state's public-health department reports that 2.54% of children entered school in 2014 with an exemption from vaccination based on personal belief.

The federal government has little say in who gets a measles shot — those rules are written by individual states. Most, like California, allow parents to send their children to school unvaccinated by claiming a religious or philosophical objection to the practice. But two — Mississippi and West Virginia — allow only medical exceptions. And that, many observers have argued, is why Mississippi, one of the poorest states in the union, has the highest percentage of 5-year-old children who have received vaccination for measles, mumps and rubella.

Last month, the Mississippi state legislature was considering a bill to allow the same types of personal-belief exemption that most other states allow. But on 3 February, a committee in the state's House of Representatives killed the proposal. On 4 February, legislators in California said that they would introduce a bill to adopt the same strict rules as Mississippi. And several other states, including Maine, Minnesota and Oregon, are considering measures that would require parents to consult with a physician about vaccines before being granted an exemption.

That is a step in the right direction. Parents, of course, have the right to decide what is best for their children. But when it comes to vaccination, those decisions should be based on complete and accurate information about the risks and benefits.

Nature Medicine
January 2015, Volume 21 No 1 pp1-98
http://www.nature.com/nm/journal/v21/n1/index.html
[Reviewed earlier]

Nature Reviews Immunology
January 2015 Vol 15 No 1
http://www.nature.com/nri/journal/v15/n1/index.html
[Reviewed earlier]

New England Journal of Medicine
February 12, 2015 Vol. 372 No. 7
http://www.nejm.org/toc/nejm/medical-journal
[New issue; No relevant content]

Pediatrics
February 2015, VOLUME 135 / ISSUE 2
http://pediatrics.aappublications.org/current.shtml
[Reviewed earlier]

Pharmaceutics
Volume 7, Issue 1 (March 2015), Pages 1-
http://www.mdpi.com/1999-4923/6/4
[No new relevant content]

Pharmacoeconomics
Volume 33, Issue 2, February 2015
http://link.springer.com/journal/40273/33/2/page/1
[No relevant content]

PLoS Currents: Outbreaks
http://currents.plos.org/outbreaks/
(Accessed 14 February 2015)
Temporal Changes in Ebola Transmission in Sierra Leone and Implications for Control Requirements: a Real-time Modelling Study
February 10, 2015 · Research
Background: Between August and November 2014, the incidence of Ebola virus disease (EVD) rose dramatically in several districts of Sierra Leone. As a result, the number of cases exceeded the capacity of Ebola holding and treatment centres. During December, additional beds were introduced, and incidence declined in many areas. We aimed to measure patterns of transmission in different regions, and evaluate whether bed capacity is now sufficient to meet future demand.
Methods: We used a mathematical model of EVD infection to estimate how the extent of transmission in the nine worst affected districts of Sierra Leone changed between 10th August 2014 and 18th January 2015. Using the model, we forecast the number of cases that could occur until the end of March 2015, and compared bed requirements with expected future capacity.
Results: We found that the reproduction number, R, defined as the average number of secondary cases generated by a typical infectious individual, declined between August and December in all districts. We estimated that R was near the crucial control threshold value of 1 in December. We further estimated that bed capacity has lagged behind demand between August and December for most districts, but as a consequence of the decline in transmission, control measures caught up with the epidemic in early 2015.
Conclusions: EVD incidence has exhibited substantial temporal and geographical variation in Sierra Leone, but our results suggest that the epidemic may have now peaked in Sierra Leone, and that current bed capacity appears to be sufficient to keep the epidemic under-control in most districts.
Estimating Drivers of Autochthonous Transmission of Chikungunya Virus in its Invasion of the Americas
February 10, 2015 · Research
Background
Chikungunya is an emerging arbovirus that has caused explosive outbreaks in Africa and Asia for decades and invaded the Americas just over a year ago. During this ongoing invasion, it has spread to 45 countries where it has been transmitted autochthonously, infecting nearly 1.3 million people in total.

Methods
Here, we made use of weekly, country-level case reports to infer relationships between transmission and two putative climatic drivers: temperature and precipitation averaged across each country on a monthly basis. To do so, we used a TSIR model that enabled us to infer a parametric relationship between climatic drivers and transmission potential, and we applied a new method for incorporating a probabilistic description of the serial interval distribution into the TSIR framework.
Results
We found significant relationships between transmission and linear and quadratic terms for temperature and precipitation and a linear term for log incidence during the previous pathogen generation. The lattermost suggests that case numbers three to four weeks ago are largely predictive of current case numbers. This effect is quite nonlinear at the country level, however, due to an estimated mixing parameter of 0.74. Relationships between transmission and the climatic variables that we estimated were biologically plausible and in line with expectations.
Conclusions
Our analysis suggests that autochthonous transmission of Chikungunya in the Americas can be correlated successfully with putative climatic drivers, even at the coarse scale of countries and using long-term average climate data. Overall, this provides a preliminary suggestion that successfully forecasting the future trajectory of a Chikungunya outbreak and the receptivity of virgin areas may be possible. Our results also provide tentative estimates of timeframes and areas of greatest risk, and our extension of the TSIR model provides a novel tool for modeling vector-borne disease transmission.

High-resolution Genomic Surveillance of 2014 Ebolavirus Using Shared Subclonal Variants

February 9, 2015 · Research

Background: Viral outbreaks, such as the 2014 ebolavirus, can spread rapidly and have complex evolutionary dynamics, including coinfection and bulk transmission of multiple viral populations. Genomic surveillance can be hindered when the spread of the outbreak exceeds the evolutionary rate, in which case consensus approaches will have limited resolution. Deep sequencing of infected patients can identify genomic variants present in intrahost populations at subclonal frequencies (i.e. <50%). Shared subclonal variants (SSVs) can provide additional phylogenetic resolution and inform about disease transmission patterns.
Methods: We use metrics from population genetics to analyze data from the 2014 ebolavirus outbreak in Sierra Leone and identify phylogenetic signal arising from SSVs. We use methods derived from information theory to measure a lower bound on transmission bottleneck size.
Results and Conclusions: We identify several SSV that shed light on phylogenetic relationships not captured by consensus-based analyses. We find that transmission bottleneck size is larger than one founder population, yet significantly smaller than the intrahost effective population. Our results demonstrate the important role of shared subclonal variants in genomic surveillance.

PLoS Medicine

(Accessed 14 February 2015)
http://www.plosmedicine.org/
[No new relevant content]

PLoS Neglected Tropical Diseases

http://www.plosntds.org/
(Accessed 14 February 2015)
Viewpoints

The Newest "Omics"—Metagenomics and Metabolomics—Enter the Battle against the Neglected Tropical Diseases

Geoffrey A. Preidis ,
Affiliation: Section of Gastroenterology, Hepatology & Nutrition, Department of Pediatrics, Baylor College of Medicine and Texas Children's Hospital, Houston, Texas, United States of America
Peter J. Hotez
Affiliations: National School of Tropical Medicine, Department of Pediatrics and Molecular Virology & Microbiology, Baylor College of Medicine, Houston, Texas, United States of America, Sabin Vaccine Institute and Texas Children's Hospital Center for Vaccine Development, Houston, Texas, United States of America, James A. Baker III Institute for Public Policy, Rice University, Houston, Texas, United States of America, Department of Biology, Baylor University, Waco, Texas, United States of America
Published: February 12, 2015
DOI: 10.1371/journal.pntd.0003382

Introduction

The international Human Microbiome Project [1,2] trumpeted the coming of age of the field of metagenomics, the study of entire communities of microbes and their contributions to health and disease. Metagenomic analyses are most often undertaken by sequencing the bacterial 16S ribosomal RNA (rRNA) subunit or by whole metagenome shotgun sequencing, typically on a massively parallel pyrosequencing platform. These technologies have expanded the scope of traditional culture-dependent microbiological methods and have enhanced our understanding of the rich microbial communities that inhabit the intestine, skin, oral cavity, and genitourinary tract and how these commensal microbes interact with both pathogen and host.

In parallel, the field of metabolomics emerged as the systematic, nonbiased analysis of all low-molecular-weight small molecules, or metabolites, produced by a system in response to an environmental stimulus. Metabolites are secreted into body fluids by host and microbial cells, measured by mass spectrometry–based approaches, and aligned against libraries of known biochemicals. These techniques have been used to gain insights into mechanisms of pathogenesis and to identify new biomarkers of disease. Metabolomics also offers clues to the presence and function of microbes living deep within the small bowel that are difficult to sample directly and highlights the complex relationship between resident microbes, host metabolism, pharmacotherapeutic action, and relative health or disease.

Metagenomics and metabolomics are the two most rapidly advancing "omics" technologies and lie at either end of the "omics cascade" [3]; the former identifies the genetic potential of a community, whereas the latter reports the actual biology that produces a phenotype. These fields have enabled discoveries pertinent to a number of human conditions—namely, acute gastroenteritis, antibiotic-associated diarrhea, inflammatory bowel disease, irritable bowel syndrome, liver disease, undernutrition, and obesity—and have begun to shed new light on multiple aspects of the neglected tropical diseases. Moreover, there are exciting opportunities to now pair metagenomic and metabolomic data in order to gain new and unprecedented insights into the host–parasite relationship. Here, we explore the nascent metagenomic and metabolomic contributions to the diagnosis, pathogenesis, treatment, and prevention (including vector control) of neglected tropical diseases. We then look ahead to the full potential of the

postgenomics era and consider how metagenomics and metabolomics could help in the control and elimination of these diseases…

PLoS One
[Accessed 14 February 2015]
http://www.plosone.org/
[No new relevant content]

PLoS Pathogens
http://journals.plos.org/plospathogens/
(Accessed 14 February 2015)
[No new relevant content]

PNAS - Proceedings of the National Academy of Sciences of the United States of America
(Accessed 14 February 2015)
http://www.pnas.org/content/early/
[No new relevant content]

Pneumonia
Vol 5 (2014)
https://pneumonia.org.au/index.php/pneumonia/issue/current
Special Issue "Pneumonia Diagnosis"
[Reviewed earlier]

Proceedings of the Royal Society B
07 March 2015; volume 282, issue 1802
http://rspb.royalsocietypublishing.org/content/282/1802?current=y
[No relevant content]

Public Health Ethics
Volume 7 Issue 3 November 2014
http://phe.oxfordjournals.org/content/current
Special Symposium on Dual Loyalities: Health Providers Working for the State
[Reviewed earlier]

Qualitative Health Research
February 2015; 25 (2)
http://qhr.sagepub.com/content/current
Special Issue: Responses to Treatment
[Reviewed earlier]

Revista Panamericana de Salud Pública/Pan American Journal of Public Health (RPSP/PAJPH)
September 2014 Vol. 36, No. 3
http://www.paho.org/journal/index.php?option=com_content&view=article&id=151&Itemid=266&lang=en
[Reviewed earlier]

Risk Analysis
December 2014 Volume 34, Issue 12 Pages 2063–2188
http://onlinelibrary.wiley.com/doi/10.1111/risa.2014.34.issue-12/issuetoc
[Reviewed earlier]

Science
13 February 2015 vol 347, issue 6223, pages 689-800
http://www.sciencemag.org/current.dtl
In Depth
Infectious Diseases
Ebola drug trials lurch ahead
Kai Kupferschmidt, Jon Cohen

News leaked last week that the drug favipiravir worked in some Ebola patients, but even researchers running the study in Guinea said questions remain about its efficacy. Interpreting the data is difficult because there is no control arm that treated patients can be compared with. This is just one of several confusing twists in the search for a treatment that can stave off death and disease from Ebola virus. Chimerix, the maker of an antiviral called brincidofovir, surprised investigators in Liberia when it suddenly ended a study of its drug after discussions with the U.S. Food and Drug Administration. Chimerix noted that the study was having trouble enrolling patients because Liberia has seen a steep drop in cases, but the researchers running it said they had hoped to expand the trial to Sierra Leone, where most new infections are happening. Liberia is also beginning another trial with ZMapp, a cocktail of Ebola antibodies, and study leaders are having difficulty convincing Sierra Leone and Guinea to join because the study uses a placebo control. Finally, a trial of convalescent serum taken from recovered patients is getting under way in Guinea, but there are now questions about whether it should be compared with favipiravir as a control.
Policy Forum
Health Care Policy
Randomize evaluations to improve health care delivery
Amy Finkelstein1,2,3,*, Sarah Taubman2
Author Affiliations
1Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139, USA.
2J-PAL North America, Massachusetts Institute of Technology, Cambridge, MA 02139, USA.
3National Bureau of Economic Research, Cambridge, MA 02138, USA.

The medical profession has long recognized the importance of randomized evaluations; such designs are commonly used to evaluate the safety and efficacy of medical innovations such as

drugs and devices. Unfortunately, innovations in how health care is delivered (e.g., health insurance structures, interventions to encourage the use of appropriate care, and care coordination approaches) are rarely evaluated using randomization. We consider barriers to conducting randomized trials in this setting and suggest ways for overcoming them. Randomized evaluations of fundamental issues in health care policy and delivery should be—and can be—closer to the norm than the exception.

Social Science & Medicine
Volume 126, In Progress (February 2015)
http://www.sciencedirect.com/science/journal/02779536/126
[Reviewed earlier]

Tropical Medicine and Health
Vol. 42(2014) No. 4
https://www.jstage.jst.go.jp/browse/tmh/42/4/_contents
[Reviewed earlier]

Tropical Medicine & International Health
March 2015 Volume 20, Issue 3 Pages 251–406
http://onlinelibrary.wiley.com/doi/10.1111/tmi.2014.20.issue-1/issuetoc
[Reviewed earlier]

Vaccine
Volume 33, Issue 10, Pages 1231-1298 (3 March 2015)
http://www.sciencedirect.com/science/journal/0264410X/33/10
Immunodeficiency-related vaccine-derived poliovirus (iVDPV) cases: A systematic review and implications for polio eradication
Review Article
Pages 1235-1242
Jean Guo, Sara Bolivar-Wagers, Nivedita Srinivas, Marisa Holubar, Yvonne Maldonado
Abstract
Background
Vaccine-derived polioviruses (VDPVs), strains of poliovirus mutated from the oral polio vaccine, pose a challenge to global polio eradication. Immunodeficiency-related vaccine-derived polioviruses (iVDPVs) are a type of VDPV which may serve as sources of poliovirus reintroduction after the eradication of wild-type poliovirus. This review is a comprehensive update of confirmed iVDPV cases published in the scientific literature from 1962 to 2012, and describes clinically relevant trends in reported iVDPV cases worldwide.
Methods
We conducted a systematic review of published iVDPV case reports from January 1960 to November 2012 from four databases. We included cases in which the patient had a primary immunodeficiency, and the vaccine virus isolated from the patient either met the sequencing definition of VDPV (>1% divergence for serotypes 1 and 3 and >0.6% for serotype 2) and/or was previously reported as an iVDPV by the World Health Organization.

Results
We identified 68 iVDPV cases in 49 manuscripts reported from 25 countries and the Palestinian territories. 62% of case patients were male, 78% presented clinically with acute flaccid paralysis, and 65% were iVDPV2. 57% of cases occurred in patients with predominantly antibody immunodeficiencies, and the overall all-cause mortality rate was greater than 60%. The median age at case detection was 1.4 years [IQR: 0.8, 4.5] and the median duration of shedding was 1.3 years [IQR: 0.7, 2.2]. We identified a poliovirus genome VP1 region mutation rate of 0.72% per year and a higher median percent divergence for iVDPV1 cases. More cases were reported from high income countries, which also had a larger age variation and different distribution of immunodeficiencies compared to upper and lower middle-income countries.
Conclusion
Our study describes the incidence and characteristics of global iVDPV cases reported in the literature in the past five decades. It also highlights the regional and economic disparities of reported iVDPV cases.

Controlling measles using supplemental immunization activities: A mathematical model to inform optimal policy

Original Research Article
Pages 1291-1296
Stéphane Verguet, Mira Johri, Shaun K. Morris, Cindy L. Gauvreau, Prabhat Jha, Mark Jit
Abstract
Background
The Measles & Rubella Initiative, a broad consortium of global health agencies, has provided support to measles-burdened countries, focusing on sustaining high coverage of routine immunization of children and supplementing it with a second dose opportunity for measles vaccine through supplemental immunization activities (SIAs). We estimate optimal scheduling of SIAs in countries with the highest measles burden.
Methods
We develop an age-stratified dynamic compartmental model of measles transmission. We explore the frequency of SIAs in order to achieve measles control in selected countries and two Indian states with high measles burden. Specifically, we compute the maximum allowable time period between two consecutive SIAs to achieve measles control.
Results
Our analysis indicates that a single SIA will not control measles transmission in any of the countries with high measles burden. However, regular SIAs at high coverage levels are a viable strategy to prevent measles outbreaks. The periodicity of SIAs differs between countries and even within a single country, and is determined by population demographics and existing routine immunization coverage.
Conclusions
Our analysis can guide country policymakers deciding on the optimal scheduling of SIA campaigns and the best combination of routine and SIA vaccination to control measles.

Vaccines — Open Access Journal
(Accessed 14 February 2015)
http://www.mdpi.com/journal/vaccines
Review: M2e-Based Universal Influenza A Vaccines
by Lei Deng, Ki Joon Cho, Walter Fiers and Xavier Saelens

Vaccines 2015, 3(1), 105-136; doi:10.3390/vaccines3010105 - published 13 February 2015
Abstract:
The successful isolation of a human influenza virus in 1933 was soon followed by the first attempts to develop an influenza vaccine. Nowadays, vaccination is still the most effective method to prevent human influenza disease. However, licensed influenza vaccines offer protection against antigenically matching viruses, and the composition of these vaccines needs to be updated nearly every year. Vaccines that target conserved epitopes of influenza viruses would in principle not require such updating and would probably have a considerable positive impact on global human health in case of a pandemic outbreak. The extracellular domain of Matrix 2 (M2e) protein is an evolutionarily conserved region in influenza A viruses and a promising epitope for designing a universal influenza vaccine. Here we review the seminal and recent studies that focused on M2e as a vaccine antigen. We address the mechanism of action and the clinical development of M2e-vaccines. Finally, we try to foresee how M2e-based vaccines could be implemented clinically in the future.

Value in Health
January 2015 Volume 18, Issue 1, p1-136
http://www.valueinhealthjournal.com/current
[Reviewed earlier]

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

Journal of Family Planning & Reproductive Health Care
Online First
doi:10.1136/jfprhc-2014-100896
Article
Comparing risk behaviours of human papillomavirus-vaccinated and non-vaccinated women
Laura Sadler1, Stephen A Roberts2, Gail Hampal3, Dona McManus4, Debashis Mandal5, Loretta Brabin6
Author Affiliations
1Research Associate, Institute of Cancer Sciences, University of Manchester, Manchester, UK
2Senior Lecturer in Medical Statistics, Centre for Biostatistics, University of Manchester, Manchester, UK
3Sister, Department of Genitourinary Medicine, Warrington and Halton Hospitals NHS Foundation Trust, Cheshire, UK
4Departmental Manager, Department of Genitourinary Medicine, Warrington and Halton Hospitals NHS Foundation Trust, Cheshire, UK
5Consultant in Genitourinary Medicine, Department of Genitourinary Medicine, Warrington and Halton Hospitals NHS Foundation Trust, Cheshire, UK and Senior Lecturer, Faculty of Medical and Human Sciences, University of Manchester, Manchester, UK
6Reader in Women's Health, Institute of Cancer Sciences, University of Manchester, Manchester, UK

Received 7 February 2014
Revised 5 November 2014
Accepted 1 December 2014
Published Online First 20 January 2015
Abstract
Background
Since September 2008, a national vaccine programme in the UK has offered routine human papillomavirus (HPV) vaccination to young women aged 12–13 years. A catch-up programme also offered HPV vaccination to women born after 1 September 1990.
Aim
To compare indicators of risk and preventive behaviours among young women attending genitourinary medicine (GUM) clinics who had, and had not, received at least one dose of HPV vaccine.
Methods
Clinical histories and HPV vaccination status were obtained from 363 participants eligible for HPV vaccination (Cervarix®) in the UK vaccination programme (born after 1 September 1990) attending GUM clinics in the North West of England. Using logistic regression, markers of sexual and non-sexual risk behaviours were compared between vaccinated and unvaccinated women.
Results
At least one dose of HPV vaccine had been received by 63.6% (n=231) of participants. Unvaccinated women demonstrated higher levels of risky behaviour than those who had undergone HPV vaccination. Unvaccinated women were significantly more likely to have had three or more partners in the last 6 months, attended the clinic with symptoms, not used a condom at first sexual intercourse, had anal intercourse with their last sexual contact, to have tested positive for Chlamydia trachomatis diagnosis at the clinic visit and to be a current smoker.
Conclusions
In the UK, where vaccine coverage is high, failure to initiate HPV vaccination amongst GUM attendees is a marker of high-risk behaviours. As a result, HPV vaccination status should be ascertained as part of an individual's clinical history by sexual health services to ensure advice and counselling is provided to those at greatest risk of HPV-associated disease.

Special Focus Newsletters
RotaFlash - February 9, 2015
Significant reductions in rotavirus-related hospitalizations in Malawi
Argentina and Tajikistan introduce rotavirus vaccines, bringing worldwide total to 75

* * * *

Media/Policy Watch

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

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

Al Jazeera
http://america.aljazeera.com/search.html?q=vaccine
Accessed 14 February 2015
[No new, unique, relevant content]

The Atlantic
http://www.theatlantic.com/magazine/
Accessed 14 February 2015
Vaccines Are Profitable, So What?
Bourree Lam Feb 10 2015, 7:50 AM ET
Yes, Big Pharma is making money from immunizations. But that doesn't mean anyone should skip the shots.
…So while the vaccine industry is likely more profitable now than in the 1970s or 1980s, this is the result of global market forces, not a reason to skip a child's vaccinations: Pharmaceutical companies need incentives to keep producing vaccines, because regardless of profits the economic and social benefits of vaccination are huge—in lives and the billions of dollars saved. A study released last year estimated that fully immunizing babies resulted in $10 saved for every dollar spent, about $69 billion total. "Vaccines are one of the most cost-effective interventions we have," says Halsey.
In the U.S., a study looking at the benefits of vaccination between 1994 and 2013 estimated a net savings of $295 billion in direct costs and $1.38 trillion in total societal costs. Looking at the last 50 years of the vaccine market, it's absurd to think profits could have ever been the sole motivation of vaccine production. In fact, 83 percent of Americans believe that the MMR vaccine is safe. Profits from vaccine production aren't a valid argument against vaccinations—the most important question is whether vaccines are safe and effective, and the answer is unambiguously yes.
Why Is Germany So Calm About Its Measles Outbreak?
A bigger flare-up of the contagious disease has a different cause—and has prompted a much more placid reaction.
Adam Chandler Feb 9 2015, 5:28 PM E

BBC
http://www.bbc.co.uk/
Accessed 14 February 2015
[No new, unique, relevant content]

Brookings
http://www.brookings.edu/
Accessed 14 February 2015

CNN

http://money.cnn.com/
Accessed 14 February 2015

Council on Foreign Relations
http://www.cfr.org/
Accessed 14 February 2015

The Economist
http://www.economist.com/
Accessed 14 February 2015

Financial Times
http://www.ft.com/home/uk
Accessed 14 February 2015

Forbes
http://www.forbes.com/
Accessed 14 February 2015

Foreign Affairs
http://www.foreignaffairs.com/
Accessed 14 February 2015
Good Thing Chris Christie Isn't the Governor of Congo
Poor countries from India to Zambia are making huge gains against preventable killers like measles -- just as rich countries are falling behind.
By Laurie Garrett February 9, 2015
…If the backlash against non-vaccinators continues to grow, Christie (and others like fellow presidential candidates Ben Carson, who insists illegal immigrants are responsible for measles, and Rand Paul, who has struggled to balance his libertarian views of free choice against support for public health) may realize they have made the wrong political gamble in playing with public health. A deep, emotional polarization already divides public health advocates and those who dream of global measles eradication versus parental-choice promoters who feel even scant hypothetical vaccine risks are too much burden for their babies to bear. This vaccine polarization has been vociferous and often angry for many years. It would be tragic not only for the children of America, but for the measles-fighting world as a whole, if efforts to achieve American herd immunity against the virus were stymied by U.S. political polarization. Measles infects both Democrats and Republicans, and the vaccine protects the children of conservatives and of liberals equally well…

The Guardian
http://www.guardiannews.com/
Accessed 14 February 2015
[No new, unique, relevant content]

The Huffington Post
http://www.huffingtonpost.com/
Accessed 14 February 2015
Don't Politicize Vaccinations

6 February 2015
by Rosalynn Carter (former First Lady)
For more than four decades, I have joined with many others working to ensure the timely vaccination of children, and today I am saddened to see an outbreak of measles infecting more than 100 people in 14 states, many of them vulnerable infants. Our country has achieved the highest immunization rates in history and thankfully the vast majority of parents are choosing to vaccinate their children on time. Yet, some parents today are being swayed by misinformation that has caused them to delay or decline vaccinating their children, jeopardizing the health of many others. I want all people to know that immunizations are safe, and that they work…

Los Angeles Times
The measles outbreaks that matter the most aren't happening here
10 February 2015
By Andrea Gay
The measles outbreak linked to Disneyland has heightened public debate about the effect of anti-vaccination sentiment, and what can be characterized as a luxury of choice in the United States. Understandably, much of the dialogue is focused on whether to vaccinate kids. It's critical to address these issues so we can dispel myths about immunization and reemphasize the important benefits of vaccines. But there is another conversation that we're not having, one that is equally important to making sure measles outbreaks don't happen in the United States: how to stop measles outside our borders….

Mail & Guardian
http://mg.co.za/
Accessed 14 February 2015
[No new, unique, relevant content]

New Yorker
http://www.newyorker.com/
Accessed 14 February 2015
Comment February 16, 2015 Issue
Not Immune
By Margaret Talbot
Twenty-five years ago, when a doctor named Robert Ross was the deputy health commissioner of Philadelphia, a measles epidemic swept the country. Until this year's outbreak, which started at Disneyland and has so far sickened more than a hundred people, the 1989-91 epidemic was the most alarming that the United States had seen since 1963, when the measles vaccine was introduced. Nationwide, there were more than fifty-five thousand cases and eleven thousand hospitalizations; a hundred and twenty-three people died. Most of those infected were unimmunized babies and toddlers, predominantly poor and minority kids living in cities…

New York Times
http://www.nytimes.com/
Accessed 14 February 2015
Africa
Red Cross Faces Attacks at Ebola Victims' Funerals
By PAM BELLUCK
FEB. 12, 2015

Red Cross volunteers helping to safely bury people who die of Ebola in Guinea have been attacked in recent days by people attending the funerals, complicating efforts to stop the spread of the disease.

The International Federation of Red Cross and Red Crescent Societies reported Thursday that since March, the organization's burial teams in Guinea have been attacked verbally or physically 10 times a month on average. Most recently, on Sunday in Forécariah, two volunteers were beaten as they tried to carry out a safe burial…

The Opinion Pages | Editorial

Reform After the Ebola Debacle

By THE EDITORIAL BOARD

FEB. 10, 2015

The World Health Organization's anemic performance in handling the Ebola outbreaks in West Africa may yield one positive outcome: sweeping, and long overdue, institutional reforms to improve its ability to respond more quickly to the next outbreak of a lethal infectious disease. Scrambling to answer growing criticism, the W.H.O.'s executive board recently endorsed changes to enhance the agency's rapid response capabilities.

The reforms call for well-trained public health workers to rush to the aid of beleaguered countries and an emergency fund to support their initial operations, among other advances. One big question, which can only be answered in practice, is whether the organization's 194 member states will set aside their typical politicking on behalf of national self-interests and allow it to function as the global health leader it ought to be.

As of Feb. 6, Ebola had infected more than 22,000 people and killed more than 9,000 of them, mostly in the three West African nations of Guinea, Liberia and Sierra Leone, with a smattering of cases in other countries. The number of new cases of Ebola had been falling steadily in those three countries but recently ticked back up for the first time this year in all three, according to the W.H.O.'s latest weekly report. There were 124 new confirmed cases, up from 99 the week before.

That could be a momentary statistical aberration or a harbinger of worse to come as the rainy season makes it increasingly difficult to reach remote areas where the virus may still be lurking. The agency's lapses in confronting the Ebola outbreaks have been blamed, rightly, on poor leadership at its headquarters in Geneva and its regional office in Africa. Dr. Margaret Chan, the director general and a Hong Kong pediatrician who got her job thanks to pressure from the Chinese government, failed to respond quickly when Ebola first emerged in West Africa.

Only after a nongovernmental organization, Doctors Without Borders, repeatedly warned that the epidemic was out of control and the virus had spread to the populous neighboring country of Nigeria did Dr. Chan finally declare the outbreak a public health emergency of international concern.

The agency's regional office in Africa was also slow to respond, partly because it was staffed by politically appointed people of little competence and partly because it feared that declaring a widespread emergency would tarnish the reputation and international trade of afflicted countries.

The resolution adopted by the W.H.O.'s executive board signals a heightened willingness to be more aggressive and could go a long way toward addressing these deficiencies. It calls for the agency to create a global cadre of public health workers trained to deal with a crisis, to establish a $100 million emergency fund that could be tapped quickly without waiting for donations from advanced nations to come dribbling in, and a commitment by the executive-director to ensure that regional staff members are selected for their expertise. The proposals

are expected to be approved by the agency's governing body, the World Health Assembly, in May.

In another promising sign of change, a highly regarded physician from Botswana was appointed last month as the new regional director for Africa. She promised to introduce competency tests for the staff and audits of job performance by outside consultants, among other changes.

But the long-term issue of adequate financing for the W.H.O. will remain. Budget cuts reduced the agency's ability to monitor outbreaks even before Ebola arrived in West Africa. And the agency has not been given power to demand actions it thinks member nations should perform. With the epidemic appearing to ebb in West Africa, the danger remains that the drive for reform could lose steam as well

The Opinion Pages | Op-Ed Contributor

What Would Jesus Do About Measles?

By PAUL A. OFFIT

FEB. 10, 2015

PHILADELPHIA — MEASLES is back. Last year, about 650 cases were reported in the United States — the largest outbreak in almost 20 years. This year, more than a hundred have already been reported.

Parents have chosen not to vaccinate their children because they can; 19 states have philosophical exemptions to vaccination, and 47 have religious exemptions. The other reason is that parents are not scared of the disease. But I'm scared. I lived through the 1991 Philadelphia measles epidemic….

…In the wake of the current epidemic, several states have proposed legislation modifying or eliminating philosophical exemptions to vaccination. No lawmaker, however, dares to touch religious exemptions. It's political dynamite. But with an estimated 30,000 children in the United States unvaccinated for religious reasons, that is a dangerous mistake.

Parents shouldn't be allowed to martyr their children — or in this case, those with whom their children have come in contact. Religious exemptions to vaccination are a contradiction in terms. In the good name of all religions, they should be eliminated.

Wall Street Journal

http://online.wsj.com/home-page?_wsjregion=na,us&_homepage=/home/us

Accessed 14 February 2015

Measles Vaccine Debate Hits Home at California School

The measles outbreak and debate over vaccinations has hit close to home at Julian Charter School in California, where many parents have opted out of getting their children immunized.

02/11/15

Dan Henninger: Vaccines and Politicized Science

Jenny McCarthy knows the credibility of science is a house of cards.

02/11/15

U.S. Measles Cases for 2015 Rise 18.6% Over Past Week

The number of measles cases in the U.S. this year rose 18.6% over the past week, to 121 people in 17 states, federal health officials says.

02/09/15

Vaccines: Delays, Too, Pose Risks

While parents who don't vaccinate their children have been the focus of the recent measles outbreak, experts say vaccine delayers compose a larger and growing group that may expose the most vulnerable population to vaccine-preventable diseases.

02/09/15
Doctors Work to Ease Vaccine Fears
Pediatricians face growing numbers of parents who question or reject vaccinations for their children. Now, public health experts are working on new ways to help these doctors hone their pitches to families.
02/09/15

Washington Post
http://www.washingtonpost.com/
Accessed 14 February 2015
12 February 2015
The polio vaccine killed my father. But that's not a reason to oppose vaccines.
Individual risk is a necessary part of public health.
By Nuria Sheehan
My father was one in 5 million. That's the probability of getting polio after being in contact with someone who has received the oral polio vaccine. I got the vaccine as an infant. And somehow the weakened form of the virus within it managed to infect my father. He spent nine months in intensive care, eventually becoming entirely paralyzed except for one eyelid with which he agonizingly communicated with my mother. A year after I was born, he was dead….

* * * *

U.S. White House – FACT SHEET: Progress in Our Ebola Response at Home and Abroad
February 11, 2015
[Full text]

Today, approximately 10 months since the first U.S. personnel deployed to West Africa to fight Ebola, we mark important milestones in our response to the epidemic and chart the way ahead. In keeping with the President's charge that we tackle Ebola as a national security priority, we built, coordinated, and led an international response—involving thousands of personnel, both U.S. and international, civilian, and military—to fight the disease at its source. All the while, we enhanced our preparedness to encounter Ebola on our shores, establishing comprehensive measures to screen and detect the disease in travelers, while strengthening our capacity to diagnose, isolate, and treat any patients safely. This response showcased American leadership at its finest on the world stage, just as we came together as a nation to fortify our domestic resilience in the face of understandable apprehension. To be sure, our tasks are far from complete; we will keep working to meet this challenge until there are zero cases in West Africa and our domestic infrastructure is fully completed. Our focus now turns to consolidating that substantial progress as America today marks the next phase of our response.

As we mark this transition, today President Obama will host at the White House some of those responsible for these substantial gains. In preparation for this event, Ron Klain, the outgoing Ebola Response Coordinator, provided the President with a comprehensive update on our progress. As he told the President, Americans should be proud of what we, together as a

nation, have accomplished, even as we must not lose sight of the challenges that remain and the urgent tasks ahead.

Together with our international partners – and the people of the three nations themselves – we have bent the curve of the epidemic and placed it on a much improved trajectory. We have gone from over 1,000 new suspected, probable, and confirmed Ebola cases a week in October, to roughly 150 new confirmed weekly cases in the most recent reports. Liberia has reported only a handful of new cases per week, a drop of well over 90 percent. Significant declines also have been reported in Sierra Leone from the epidemic's peak. Among the accomplishments in this response:

- We ramped up the civilian response to treat Ebola patients, trace their contacts, promote safe burials, and increase community knowledge, resulting in more than 10,000 U.S. Government-supported civilians now on the ground in West Africa;
- In Liberia, U.S. personnel, both civilian and military, trained more than 1,500 healthcare workers, enabling them to provide safe and direct medical care to Ebola patients;
- The Centers for Disease Control and Prevention (CDC) sent nearly 1,000 civil servants on international deployments to support the Ebola response;
- The U.S. Government facilitated the construction of 15 Ebola Treatment Units (ETUs) in the region, of which 10 were built by U.S. service members, along with a medical unit in Monrovia, Liberia, used to treat infected healthcare workers. These facilities have enabled the testing and isolation of hundreds of patients;
- We supported the establishment of core public health management of the epidemic such that in all three countries, there are now functioning public health emergency operations centers, laboratory testing capabilities, enhanced coordination, and rapid response capabilities; and,
- U.S. leadership galvanized a robust international response comprised of over 62 countries contributing more than $2 billion as well as thousands of personnel and wide-ranging resources.

Here at home, our response was methodical and guided by the science as we stood-up and enhanced our domestic preparedness. We are much better prepared to identify, isolate, and treat anyone who presents with the disease. Among our specific domestic accomplishments:

- We established a system for monitoring all arriving travelers from countries with widespread transmission. The regime is comprised of screening and daily symptom checks, including in-person examinations for those at elevated risk, covering more than 99 percent of all arriving travelers subject to this regime;
- We devised and implemented a system of nationwide Ebola Treatment Centers (ETCs)—facilities designed to treat an Ebola patient safely and effectively—resulting in a network that places more than 80 percent of all arriving travelers from the affected countries within 200 miles of one of the 51 Centers;
- We accelerated development of diagnostics, vaccines, and therapeutics to identify, prevent, and treat the disease. Two vaccine candidates have completed Phase 1 trials, while Phase 2/3 vaccine candidate trials are underway in West Africa with therapeutics trials starting shortly. Three rapid point-of-care tests are being evaluated; two of them are in field trials, and another will be ready for field trial in the near future; We are

taking steps to ensure commercial-scale manufacturing capabilities for the successful vaccines, diagnostics, and therapeutics for potential future needs; and
- We worked with a bipartisan coalition of lawmakers to secure the resources necessary to confront this disease both at home and abroad, leading a Congressional majority to approve $5.4 billion in emergency funding in December 2014.

A Successful Strategy to "Bend the Curve" of the Epidemic in West Africa

Since its launch in March 2014, the U.S. Ebola response has deployed more than 3,500 Department of Defense (DoD), CDC, U.S. Public Health Service (USPHS) Commissioned Corps, U.S. Agency for International Development (USAID), and National Institutes of Health (NIH) personnel to the affected region. As a result of this strategy – along with international partners, non-governmental organization, international responders, and others -- we have helped bend the epidemiological curve and averted the horrific worst-case scenarios predicted by computer modeling at the beginning of the response. We have since seen drastic declines in the case counts in all three countries.

- In Liberia at the peak of the outbreak, there were 119 confirmed cases per week, and today there were 3 confirmed new cases this week.
- In Sierra Leone at the peak of the outbreak, there were 534 confirmed new cases per week, and today there are 76 confirmed new cases this week.
- In Guinea at the peak of the outbreak, there were 148 confirmed cases per week, and today there are 66 confirmed new cases this week.

This progress was predicated on a global response, in which America's whole-of-government strategy has included both civilian and military personnel. Over 10,000 U.S. Government-supported personnel are now engaged in the Ebola response in West Africa, treating patients, tracing contacts, promoting safe burials, and educating communities, among other core tasks.

Isolation and Treatment Facilities: The U.S. Government facilitated the construction of 15 ETUs in the region, of which 10 were built by DoD. All had been completed by early January and have helped isolate of hundreds of Ebola patients and those suspected of having the disease. We also provided materials and operational support to several other ETUs, Transit Centers, and Limited Care facilities in the affected countries, resulting in a network of isolation and treatment facilities critical to disrupting chains of transmission.

- Additionally, DoD constructed the Monrovia Medical Unit (MMU) for treatment of Ebola-infected healthcare workers with staffing by the USPHS Commissioned Corps. DoD is now in the process of transitioning non-clinical management to USAID. Since November, the MMU has admitted and cared for over 36 patients from 9 nations. Over 200 officers of HHS' U.S. Public Health Service Commissioned Corps have deployed and staffed the facility.

Provision of Medical and Relief Supplies: USAID expanded the pipeline of medical equipment and supplies, airlifting to the region more than 400 metric tons of personal protective equipment (PPE), infrared thermometers, chlorine, and plastic sheeting for the

construction of ETUs. In addition, DoD is in the process of delivering 1.4 million sets of PPE to Liberia. CDC has provided the technical expertise to direct purchasing requests for both ETU and frontline healthcare facility PPE and infection control resource needs.

Safe Burial Teams: Unsafe burial practices accounted for many of the transmissions throughout the region, leading us to prioritize the creation and support of Safe Burial Teams. U.S. partners have established and operated over 190 burial teams in the region—70 in Liberia, 50 in Sierra Leone, 70 in Guinea.

Laboratory Testing Facilities: DoD has provided seven mobile laboratories to the region, reducing the time to diagnosis from days to hours. These labs have tested more than 4,000 samples since September 2014. CDC is also supporting laboratories in Liberia and Sierra Leone, leading to efficient and rapid Ebola testing. CDC continues to staff a laboratory in Bo, Sierra Leone, that has tested more than 10,000 samples and has applied innovations to improve throughput. CDC's Lab Task Force has initiated trainings and provided guidance in partnership with at-risk, unaffected countries to improve their response capacity in the event that an Ebola case is imported into their country.

Contact Tracing and Case Investigation: USAID and CDC partners have pursued an aggressive case investigation and contact tracing effort designed to identify and monitor all active chains of transmission in the region. As of early February, nearly all new cases in Liberia were diagnosed in known contacts of Ebola patients, indicating the tremendous progress we have made. CDC has deployed teams to district/county prefecture levels to assist with the response.

Training Healthcare Workers: In Liberia, DoD has trained more than 1,500 health care providers, enabling them to provide safe and direct medical care to Ebola patients. In Sierra Leone and Guinea, USAID-supported partners have trained thousands of health care workers in infection control standards and Ebola case management to ensure they have resources and skills to safely care for Ebola patients. CDC, meanwhile, has trained 690 master trainers and more than 18,000 frontline healthcare staff and has conducted 231 facility assessments. As of January, CDC had trained more than 450 responders in the United States prior to their work in West African ETUs.

Community Outreach and Social Mobilization: USAID has supported programs to reach millions across the region with messages on Ebola identification and prevention, teaching them how to protect themselves and their loved ones. USAID also enabled mobilization teams to go door-to-door in communities across the region with potentially life-saving information. Additionally, CDC and its partners have engaged with communities in the affected countries through influential community members, such as community leaders, religious leaders, journalists, celebrities, and others to foster widespread use of accurate, consistent messages.

Exit Screening: CDC has worked with international partners to increase capacity in Liberia, Sierra Leone, and Guinea to identify travelers who may be experiencing symptoms of Ebola or other diseases, educate travelers, prevent them from traveling within or beyond the region, and refer them for appropriate care as necessary.

Getting to Zero Cases in West Africa

We are encouraged by the declining number of new Ebola cases in West Africa, but remain concerned about a recent increase in cases in Guinea, and an inability to further reduce case counts in Sierra Leone. Moreover, given that a single case can lead to flare-ups of the virus, we must not lose focus. We will continue to pursue our flexible and adaptable strategy, meeting the evolving conditions on the ground until we have reached zero cases. For example, just as we have scaled the ETU isolation and treatment capacity to reflect lower case rates, we are now ramping up aggressive case finding and contact tracing efforts to hunt remaining cases. We are training health staff on infection prevention and control measures to ensure that, as regular health services resume across the region, they will be able to identify, triage, isolate, and treat any additional cases. Finally, we will continue public awareness campaigns and outreach so that communities remain vigilant and prepared.

With over 10,000 civilians engaged in this effort with U.S. support, we will beat the virus, launch recovery efforts that strengthen the health systems, prepare for future Ebola or other contagious disease outbreaks, and contribute to stronger global health security.

With the improved epidemiological outlook, we are planning for the return to the United States of the majority of the troops deployed in Operation United Assistance (OUA), the U.S. Military's Ebola response. Of the 2,800 troops deployed, approximately 1,500 are already back in the United States, and nearly all of those remaining will return home by April 30. OUA will continue after April 30 with a complement of approximately 100 DoD personnel who, leveraging an already strong military-to-military partnership with the Armed Forces of Liberia and other regional partners, will remain steadfast in supporting Ebola response efforts. Other response functions have been or will be transitioned to civilian personnel.

- Throughout the transition, DoD will remain prepared to respond to Ebola-related contingencies in West Africa as requested by USAID. Military personnel will revert the OUA Intermediate Staging Base in Dakar, Senegal to Cooperative Security Location (CSL) Status on March 2, 2015, where it will remain available to support a range of missions. DoD is identifying the right forces to support follow-on activities, including the headquarters cell, augmentation for Operation ONWARD LIBERTY, the Defense Preparedness Program, and additional security cooperation activities.
- The Cooperative Threat Reduction Program (CTR) is preparing to build out its biosurveillance capacity, including related biosecurity and biosafety capabilities, in West Africa and expand this capacity to the rest of the continent over the long-term to augment partner country capability to detect and report outbreaks of dangerous infectious diseases.
- DoD and the Government of Liberia agreed that in the near term two mobile labs will be repurposed to support sustainable diagnostic testing for biosurveillance. They also agreed that CTR will continue to support the Liberian Institute for Biomedical Research through training, equipping, facility upgrades, and sustainment plans.

As DoD draws down, the United States will continue to support the regional governments alongside the international humanitarian and public health community. Working together, the goal remains to get to zero cases while building better and more resilient health systems and ensuring capacity to prevent, detect, and rapidly respond to future outbreaks through our

Global Health Security Agenda. While the fight is far from over, we will also be helping health workers and health facilities to reopen their doors to treat malaria, catch up on immunizations for children, and keep pregnant mothers healthy. This objective will require a sustained U.S. engagement in the region.

Protecting Against Cases at Home

Just as we mounted an aggressive whole-of-government response to bring the epidemic under control in West Africa, we took prudent measures to respond to threat of Ebola cases to the United States. Since early October, CDC and Department of Homeland Security (DHS) personnel have conducted entry screening to detect signs of illness or potential exposure to Ebola among all passengers arriving in the United States who recently traveled to, from, or through Guinea, Liberia, or Sierra Leone. Entry screening was expanded to include Mali while cases were being reported in that country and potential spread through international air travel remained a concern.

- Since entry screening began, 7,700 adults and children have been screened. All of them have been subject to a 21-day monitoring regime which enables prompt detection, isolation, and treatment of anyone who is diagnosed with Ebola.
- We developed national guidance on Ebola exposure risk levels and relevant public health actions. This guidance included recommendations for public health officials to actively monitor the health of recently-arrived travelers who have some degree of identifiable risk each day for 21 days from the date of their last possible exposure. If a traveler returning from the affected countries were to develop symptoms, he or she would be able to get care immediately and prevent transmission to others.
- Each traveler being monitored now also receives a Check and Report Ebola (CARE) Kit, a 21-day pre-paid cell phone, a digital thermometer, and meets with a trained educator to learn about daily symptom monitoring and reporting.
- CDC has given out more than 5,700 CARE Kits, including more than 3,800 CARE cell phones, provided to the U.S. Government free-of-charge by the non-profit CDC Foundation.
- CDC provided guidance and resources to state and local health partners to implement active and direct active monitoring. In this way, every person arriving in the US from the three West African nations is subjected to a daily monitoring regime for a 21-day period.

Enhancing Domestic Preparedness

On top of our entry screening measures, we undertook a concerted effort to ensure that, if we needed to treat an Ebola patient, our national health system would be prepared to spot, diagnose, transport, and treat the patient effectively without infecting others. CDC and the Office of the Assistant Secretary for Preparedness and Response (ASPR) at HHS led efforts to enhance domestic preparedness. CDC implemented a series of tools to assess and improve

facility readiness, allowing us to have confidence in our nationwide ability to respond to any additional cases at home.

CDC released guidance to prepare U.S. healthcare facilities for Ebola through a 3-tiered approach: ETCs, assessment hospitals, and frontline healthcare facilities.

Ebola Treatment Centers. State and local public health officials, with technical assistance from CDC and ASPR, have collaborated with hospital officials to increase domestic capacity to treat Ebola patients. Prior to October, there were three facilities in the United States recognized for their biocontainment capability for treating Ebola and other infectious diseases: Emory University Hospital, University of Nebraska Medical Center, and the National Institutes of Health (NIH) Clinical Center. Today, we have a network of 51 Ebola treatment centers in 16 states and the District of Columbia, with 72 available beds.

- Hospitals with treatment centers have been designated by state health officials, based on a collaborative decision with local health authorities and the hospital administration, to serve as treatment facilities for Ebola patients. ETCs are staffed, equipped, and have been assessed to have the capability, training, and resources to provide the treatment necessary to care for an Ebola patient.
- ETCs have been assessed by a CDC Rapid Ebola Preparedness (REP) team, a concept created in October that brings together experts in all aspects of Ebola care, including staff training, infection control, and PPE use. In total, CDC REP teams have visited 80 facilities in 20 states and the District of Columbia.
- Because of this approach, more than 80 percent of travelers returning from West Africa are now within 200 miles of an Ebola treatment center and could be safely transported to one via ambulance, if necessary. (Medevac capacity is available for the other returning travelers.)

Assessment Hospitals. CDC and ASPR have also made progress working with state and local public health officials in identifying Ebola assessment hospitals. Assessment hospitals have been identified by state health officials as the point of referral for individuals who have a travel history and symptoms compatible with Ebola.

- These hospitals have the capability to evaluate and care for individuals who have a travel history and symptoms compatible with Ebola for up to 96 hours and initiate or coordinate Ebola testing and testing for alternative diagnoses. These hospitals can either rule out Ebola or transfer the individual to an Ebola treatment center, as needed.
- States with the majority of travelers from the affected countries have developed strategies to evaluate persons under investigation and to provide care for up to 96 hours at an assessment hospital while Ebola testing can be arranged.

Frontline Healthcare Facilities. Acute care hospitals and other emergency care settings can also serve as frontline healthcare facilities. Frontline healthcare facilities are prepared to identify a person with a travel history, potential exposure, and symptoms suggestive of Ebola.

- These facilities have the ability to identify and isolate patients with a relevant exposure history and signs or symptoms compatible with Ebola.

- Frontline healthcare facilities have enough PPE to last for 12 to 24 hours of care and can prepare a patient for transfer to an assessment hospital or treatment center, if needed.
- Regardless of a facility's pre-designated role, CDC is ready to support any U.S. hospital or medical clinic that identifies a probable Ebola patient by sending a CDC Ebola Response Team (CERT) within a few hours of a highly suspected or confirmed diagnosis. The CERT Teams will help clinicians and state and local public health practitioners to consistently follow strict protocols that protect the patient and health care workers. These teams are operational and have already been called on for assistance. CDC has also provided additional resources and guidance to assist with hospital readiness.

Ebola Testing Laboratories. Just as we have expanded the network of hospitals capable of responding to an Ebola patient, CDC's Laboratory Response Network (LRN) has grown the network of laboratories able to test a potential Ebola specimen. In order to qualify as an LRN Ebola testing lab, a facility must have an appropriate and functioning biosafety level 3 laboratory, the necessary test reagents, appropriate staff training, and the proper PPE to perform the assay safely. A testing lab demonstrates competency by successful completion of a quality assurance panel. Upon completion and evaluation of the panel, the laboratory is considered approved to test for Ebola using the DoD assay.

- Prior to the current outbreak in West Africa, Ebola could be confirmed only at the CDC laboratory in Atlanta, Georgia. In August 2014, 13 LRN laboratories in 13 states were qualified to test for Ebola. As of January 31, 2015, there are 55 LRN laboratories in 43 states that are approved to test for Ebola using a DoD test authorized for emergency use by the U.S. Food and Drug Administration (FDA). Since we have more than quadrupled our capacity to test for Ebola, turnaround time for Ebola results dramatically decreased in the United States.
- With the expansion of testing services, a test result is typically available 4 to 6 hours after receipt of a specimen in the lab. This allows clinicians to make patient-care decisions in a shorter timeframe and protects the American public from unnecessary exposures. By comparison, the first Ebola specimen domestically tested at Mt. Sinai in August 2014 took close to 24 hours to complete.
- State and local public health laboratories have been actively involved in the response. To date, 25 laboratories have performed 90 tests using the DoD Assay. Since the authorization of the first test for the detection of Ebola in August, there are now a total of seven diagnostic tests that have been authorized for emergency use by FDA. While there are commercial Ebola tests available for qualified hospital laboratories, test results must be confirmed at CDC.

Healthcare Worker Outreach and Training. We have conducted extensive outreach to the healthcare community, including hospitals, clinicians, healthcare unions, and professional associations. Our outreach has focused on training and on preparing facilities to identify, isolate, diagnose, and care for patients under investigation for Ebola. CDC conducts daily and weekly calls and webinars to provide a forum for partners to have questions answered directly by CDC staff.

- Since the start of the outbreak, CDC has educated more than 150,000 healthcare workers via more than 150 webinars and conference calls with professional organization members.

- CDC has also conducted numerous live, onsite training events for healthcare professionals. These events have reached more than 6,500 people in-person and over 20,000 people from 10 countries via live webcast. CDC partnered with Partnership for Quality Care, hospital associations, and healthcare unions on three live events.

Developing Countermeasures to Prevent and Treat Ebola

Over the longer-term, vaccines and therapeutics will be a key tool in our arsenal to address future epidemics, and we have significantly ramped up development and clinical trials of vaccine and drug candidates. While no therapeutics or vaccines have yet been proven safe and effective for treating or preventing Ebola, HHS—led by efforts at NIH, CDC, the Biomedical Advanced Research and Development Authority (BARDA), and the FDA—has made tremendous progress and is expediting the human clinical trials of several Ebola vaccine and therapeutic candidates.

Ebola Vaccine Development. The U.S. Government is supporting the development of multiple Ebola vaccine candidates in various stages of development. Two vaccine candidates—ChAd3 and VSV-ZEBOV—have completed Phase 1 human clinical trials and are now being tested in a Phase 2/3 clinical trial in Liberia and in the near future in a phase 3 trial in Sierra Leone. Other vaccine candidates are either in Phase 1 testing or are expected to begin Phase 1 testing during the year. FDA has held meetings with the sponsors of several other vaccine candidates, which are a few months to approximately a year away from the start of clinical trials.

We achieved a major milestone on February 2 with the launch of the Partnership for Research on Ebola Vaccines in Liberia (PREVAIL) Phase 2/3 trial. The PREVAIL trial, which is designed to enroll approximately 27,000 healthy men and women in Liberia, is testing two experimental Ebola vaccines that have performed well in previous Phase 1 clinical trials. The two test vaccines include the cAd3 Ebola vaccine candidate, which was developed by the National Institute of Allergy and Infectious Diseases (NIAID), part of the National Institutes of Health (NIH), and GlaxoSmithKline, and the VSV-ZEBOV vaccine, which was developed by the Public Health Agency of Canada and licensed to NewLink Genetics Corp. The government of Sierra Leone is collaborating with CDC to plan a large study there to evaluate the safety and efficacy of an Ebola vaccine candidate among health workers. This trial is anticipated to begin in the near future.

Ebola Therapeutics Development. Additionally, the U.S. Government is supporting the development of several investigational candidate therapeutics to treat patients infected with the disease. Some have already been employed in patients under compassionate usage in the United States, Western Europe, and Africa.

- **ZMapp**: Under contract with DoD's Defense Threat Reduction Agency (DTRA) and BARDA, Mapp Biopharmaceutical is developing Zmapp, a candidate therapeutic with antibodies that are produced in specially grown tobacco plants. Only limited quantities have been produced to date. NIAID supported the preclinical safety studies. BARDA is sponsoring the manufacturing of ZMapp for clinical studies to determine the product's safety and efficacy. ZMapp has shown evidence of antiviral activity in animal models of

Ebola infection. Clinical studies are anticipated to start in February 2015 in Liberia and in North America. This therapeutic candidate has been used under an emergency investigational new drug (eIND) application in Ebola-infected patients in the United States, and also has been administered in Africa, and elsewhere. Mapp Biopharmaceutical is developing ZMapp with BARDA support.

- **TKM-Ebola**: TKM-Ebola has undergone testing in nonhuman primates and has shown evidence of activity against Ebola virus. This therapeutic candidate has been used under an IND in some Ebola-infected patients in the United States. TKM-Ebola is produced by the Canadian company Tekmira Inc. under a contract from the Joint Program Executive Office for Chemical and Biological Defense.
- **BCX4430**: BCX4430 is a small molecule drug developed by BioCryst with support from NIH. Preliminary investigations have shown antiviral activity against a range of viruses, including Ebola. Results from a nonhuman primate Ebola challenge study have shown evidence of activity. NIH began Phase 1 clinical studies in healthy volunteers in December 2014 to determine safety and a treatment dosage. BioCryst is in discussions with BARDA to improve drug manufacturing and conduct future clinical studies.

FDA continues to work with product sponsors, U.S. government funding agencies, and international partners, to clarify data, clinical studies, and regulatory requirements necessary to facilitate the development and availability of the most promising vaccines and therapeutics that could potentially mitigate the current Ebola outbreak, as well as potential future outbreaks. FDA will use its flexible regulatory framework, such as issuing Emergency Use Authorizations, to make available investigational in vitro diagnostics needed to detect Ebola in West Africa, and will continue to work with diagnostic manufacturers and U.S. Government partners to facilitate development of diagnostics for Ebola, as well as other potential emerging infectious disease threats.

Institutionalizing Domestic Preparedness

The current Ebola outbreak, combined with information from other outbreaks of both recognized and novel pathogens in U.S. healthcare settings, suggests that additional efforts are needed to support domestic preparedness by enhancing the ability to prevent transmission of infectious diseases in healthcare settings. As such, HHS will convert at least 10 of the Ebola Treatment Centers into long-term Regional Ebola and Pandemic Treatment Centers. These facilities will have heightened and long-term readiness capabilities to treat Ebola and other similar dangerous diseases for years to come.

CDC, meanwhile, will build upon existing state and local health department infection control infrastructure to bolster infection control training and competency across the healthcare delivery system through a combination of on-site assessments, training, and policy implementation. Working with partners in healthcare, health departments will:

- Perform targeted assessments of infection control competency at healthcare facilities;
- Identify gaps in infection control performance and facilitate/implement programs and policies to address these gaps; and

- Implement response and prevention activities aimed at making a large impact on reducing transmission of pathogens in healthcare settings.

ASPR and CDC also plan to implement peer-review and recognition as well as healthcare worker training at regional Ebola and Other Special Pathogen Treatment Centers, state Ebola treatment centers, and assessment hospitals. Experts from healthcare institutions with experience in caring for a patient with Ebola will implement targeted training, including hands-on training, for these facilities and staff, as well as state health department employees where Regional Ebola and Other Special Pathogen Treatment Centers, state Ebola treatment centers, and assessment hospitals are located.

- CDC is working with numerous academic and industry partners to explore innovative strategies for preventing healthcare-associated transmission of Ebola and/or infectious pathogens that can be spread by the same mechanism as Ebola.

Going forward, CDC is offering states an additional $145 million in funding for additional measures that could pay dividends in response to Ebola or another contagious disease, including:

- Accelerating preparedness planning within state and local public health authorities for Ebola and other infectious diseases;
- Improving and promoting operational readiness for Ebola and other infectious diseases,
- Enhancing laboratory capabilities; and,
- Supporting state and local Ebola public health response efforts.

Securing Resources to Sustain Our Progress at Home and Abroad

Since the first cases of Ebola were reported in West Africa, Americans have understood the need to contain the disease at its source, while fortifying our defenses and preparedness at home. As the epidemic intensified, lawmakers from both parties understood that an effective, whole-of-government response required resources commensurate with the challenge. The Administration worked closely with Congress in a bipartisan way to fund the emergency request. In December 2014, the President was pleased to sign legislation that included $5.4 billion in emergency funding to implement a comprehensive strategy to end the Ebola epidemic in West Africa and advance our preparedness at home. The bill includes funding for the key agencies and departments involved in the response.

CDC—$1.7 billion. The bill includes funding to prevent, detect, and respond to the Ebola epidemic both at home and abroad for the following activities:

- Fortify domestic public health systems and advance U.S. preparedness through Ebola Treatment Centers coordinated by state and local public health departments;
- Improve Ebola readiness through additional support to the Public Health Emergency Preparedness program;
- Procure PPE for the Strategic National Stockpile.

- Increase support for monitoring travelers at U.S. airports and provide for the transportation, medical care, treatment, and other related costs of persons quarantined;
- Provide medical worker-based training to prevent and reduce exposure of hospital employees, emergency responders, and other workers who are at risk of exposure to Ebola;
- Control the epidemic in the hardest hit countries in Africa by funding activities such as: infection control; contact tracing; laboratory surveillance and training; emergency operation centers and preparedness; and education and outreach;
- Conduct evaluations of clinical trials in affected countries to assess safety and efficacy of vaccine candidates; and,
- Enhance global health security capacity in vulnerable countries to prevent, detect, and rapidly respond to outbreaks before they become epidemics by standing up emergency operations centers; providing equipment and training needed to test patients and report data in real-time; providing safe and secure laboratory capacity; and developing a trained workforce to track and end outbreaks before they become epidemics.

Public Health and Social Services Emergency Fund—$533 million. The bill includes funding to respond to patients with highly-infectious diseases such as Ebola, including for the purchase of and training on the use of PPE at hospitals across the United States and to support ETCs. The funding will also support the nation's approximately 500 health care coalitions to support the purchase of PPE and training for hospitals, emergency medical services providers, and ambulatory care facilities to address Ebola. The bill also provides transfer authority across HHS to meet critical needs that may arise rapidly. For example, resources could be used to scale Ebola response efforts in Guinea, Sierra Leone, and neighboring countries if the outbreak spreads or if the caseload dramatically increases. As HHS continues its work to develop an Ebola vaccine, these resources could also be used to scale-up production and implement a vaccination campaign.

BARDA—$157 million. The bill includes resources for BARDA to manufacture vaccines and synthetic therapeutics for use in clinical trials.

NIH—$238 million. The bill includes funding for immediate response for advanced clinical trials to evaluate the safety and efficacy of investigational vaccines and therapeutics.

FDA—$25 million*.* The bill includes funding for immediate response for development, review, regulation, and post-market surveillance of an Ebola vaccine and therapeutics.

Department of State and USAID—$2.5 billion. These resources will allow USAID to scale up the U.S. foreign assistance response to contain the Ebola crisis in West Africa and assist in the region's recovery from the epidemic. The bill funds USAID to expand emergency assistance to contain the epidemic, address humanitarian needs, and support the recovery of affected countries in the region. The funds also allow USAID to support the medical and non-medical management of ETUs and community care facilities; provide them with PPE and supplies; strengthen the regional logistics network to support the international crisis response; increases the number of safe burial teams; address food insecurity and other second-order impacts in affected communities, such as adverse effects on maternal and child health; and bolster community education efforts critical to prevent the spread of the disease. The bill also provides

authority to reimburse accounts at State and USAID that funded activities to contain and end the Ebola epidemic prior to enactment.

DoD—$112 million. These funds will be allocated for the following purposes: $33 million for DARPA for Phase I clinical trials of experimental vaccines and therapeutics; $12 million for diagnostic efforts; $50 million to the Chemical and Biological Defense Program to continue work on vaccines, therapeutics, and diagnostic systems that could mitigate the spread of Ebola; and $17 million for the procurement of detection and diagnostic systems, mortuary supplies, and isolation transport units.

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