

# Vaccines and Global Health: The Week in Review 21 December 2019 Center for Vaccine Ethics & Policy (CVEP)

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

Vaccines and Global Health: The Week in Review is also **posted in pdf form** and as a set of blog posts at <a href="https://centerforvaccineethicsandpolicy.net">https://centerforvaccineethicsandpolicy.net</a>. This blog allows full-text searching of over 8,000 entries. Comments and suggestions should be directed to

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

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Vaccines and Global Health: The Week in Review will resume publication on 4 January 2020 after an end-of-year holidays break.

# Milestones :: Perspectives :: Research ::::::

### <u>Drop in cholera cases worldwide, as key endemic countries report gains in cholera control</u>

19 December 2019 WHO News release

The number of cholera cases decreased globally by 60% in 2018, the World Health Organization (WHO) announced in a <u>report</u> that points to an encouraging trend in cholera prevention and control in the world's major cholera hotspots, including Haiti, Somalia and the Democratic Republic of the Congo.

"The decrease we are seeing in several major cholera-endemic countries demonstrates the increased engagement of countries in global efforts to slow and prevent cholera outbreaks and shows the vital role of mass cholera vaccination campaigns," said WHO Director-General Dr Tedros Adhanom Ghebreyesus. "We continue to emphasize, however, that the long-term solution for ending cholera lies in increasing access to clean drinking water and providing adequate sanitation and hygiene."

There were 499,447 cases of cholera and 2990 deaths in 2018, according to reports from 34 countries. While outbreaks are still ongoing in various countries, the case load represents a significant downward trend in cholera transmission that has continued into 2019, according to data collected by WHO.

"The global decrease in case numbers we are observing appears to be linked to large-scale vaccination campaigns and countries beginning to adopt the <u>Global Roadmap to 2030 strategy</u> in their national cholera action plans," said Dr Dominique Legros, who heads WHO's cholera programme in Geneva. "We must continue to strengthen our efforts to engage all cholera-endemic countries in this global strategy to eliminate cholera."

Nearly 18 million doses of Oral Cholera Vaccine (OCV) were shipped to 11 countries in 2018. Since the OCV stockpile was created in 2013, almost 60 million doses have been shipped worldwide. Gavi, the Vaccine Alliance, has provided funding for purchase of the vaccine and financial support for the global vaccination drives....

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### New pneumococcal vaccine from Serum Institute of India achieves WHO prequalification

December 19, 2019 by Lauren Newhouse

This milestone marks a key step toward improving pneumococcal conjugate vaccine affordability and enabling sustainable access for low- and middle-income countries

Pune, India and Seattle, United States, December 19, 2019—PNEUMOSIL®, a vaccine against a leading cause of deadly childhood pneumonia—the pneumococcus bacterium—has achieved

prequalification by the World Health Organization (WHO). Developed though a collaboration spanning over a decade between Serum Institute of India, Pvt., Ltd. (SIIPL) and PATH and with funding from the Bill & Melinda Gates Foundation, the vaccine is expected to provide protection for children on par with other pneumococcal conjugate vaccines at a price that is more affordable for low- and middle-income countries...

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#### **Global Vaccine Action Plan review and Lessons Learned Report**

WHO/IVB/19.07 2019 :: 44 pages

Strategic Advisory Group of Experts on Immunization. The Global Vaccine Action Plan 2011-2020.

Report PDF: <a href="https://apps.who.int/iris/bitstream/handle/10665/329097/WHO-IVB-19.07-eng.pdf">https://apps.who.int/iris/bitstream/handle/10665/329097/WHO-IVB-19.07-eng.pdf</a>?ua=1

Preface [excerpt]

...This report expands on the annual assessment reports prepared by the SAGE Decade of Vaccines Working Group. It considers the entire decade, drawing on a review of progress toward GVAP's goals and objectives as well as the perceptions of stakeholders captured through three surveys, which elicited 310 responses from immunization stakeholders, and two sets of semi-structured interviews with 80 stakeholders undertaken in 2017–2019. It also incorporates valuable insights from Working Group members and the representatives of partner organizations and WHO regional offices who have made important contributions to annual assessments. Annex 3 provides links to the full body of evidence used to generate this report.

This document reflects on the lessons learned from GVAP, and makes recommendations for the development, content and implementation of the next global immunization strategy.

#### **HIGH-LEVEL RECOMMENDATIONS**

A post-2020 global immunization strategy should:

- 1. Build on GVAP's lessons learned, ensuring more timely and comprehensive implementation at global, regional and national levels
- 2. Have a key focus on countries:
- 2a. Place countries at the centre of strategy development and implementation to ensure context specificity and relevance
  - 2b. Strengthen country-led evidence-based decision-making
  - 2c. Encourage the sourcing and sharing of innovations to improve programme performance
- 2d. Promote use of research by countries to accelerate uptake of vaccines and vaccine technologies and to improve programme performance
- 3. Maintain the momentum towards GVAP's goals:
- 3a. Incorporate key elements of GVAP, recognizing its comprehensiveness and the need to sustain immunization's successes each and every year
- 3b. Add a specific focus on humanitarian emergencies, displacement and migration, and chronic fragility
- 3c. Encourage stronger integration between disease-elimination initiatives and national immunization programmes 3d. Encourage greater collaboration and integration within and beyond the health sector

- 4. Establish a governance model better able to turn strategy into action:
- 4a. Create a robust and flexible governance structure and operational model based on closer collaboration between partners at all levels
  - 4b. Incorporate the flexibility to detect and respond to emerging issues
  - 4c. Develop and maintain a strong communications and advocacy strategy
- 5. Promote long-term planning for the development and implementation of novel vaccine and other preventive innovations, to ensure populations benefit as rapidly as possible
- 6. Promote use of data to stimulate and guide action and to inform decision-making
- 7. Strengthen monitoring and evaluation at the national and sub-national level to promote greater accountability

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### <u>Highest-Ever Funding Allocations Announced to Fight AIDS, TB and Malaria – Global Fund</u>

18 December 2019

GENEVA – Following a record-breaking Replenishment in October 2019, the Global Fund today announced its largest-ever funding allocations for eligible countries to fight AIDS, tuberculosis and malaria and build systems for health over the next three years.

The allocations include US\$12.71 billion for country allocations and US\$890 million for catalytic investments for the period beginning 1 January 2020 – 23% more than for the previous three-year period. The funds will help save 16 million lives, cut the mortality rate for the three diseases in half and get the world back on track to end the epidemics of AIDS, tuberculosis and malaria by 2030.

"World leaders came together at our Replenishment and made commitments to step up the fight to end these epidemics by 2030," said Peter Sands, Executive Director of the Global Fund. "Now the real work begins. Our allocations will allow partners to expand programs that work, and to find innovative solutions for new challenges. In addition to more money, we need better collaboration and more effective programs."...

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#### **Featured Journal Content**

#### **Science Translational Medicine**

18 December 2019 Vol 11, Issue 523 <a href="https://stm.sciencemag.org/">https://stm.sciencemag.org/</a> *Research Articles* 

<u>Biocompatible near-infrared quantum dots delivered to the skin by microneedle patches record vaccination</u>

By Kevin J. McHugh, Lihong Jing, Sean Y. Severt, Mache Cruz, Morteza Sarmadi, Hapuarachchige Surangi N. Jayawardena, Collin F. Perkinson, Fridrik Larusson, Sviatlana Rose, Stephanie Tomasic, Tyler Graf, Stephany Y. Tzeng, James L. Sugarman, Daniel Vlasic, Matthew Peters, Nels Peterson, Lowell Wood, Wen Tang, Jihyeon Yeom, Joe Collins, Philip A. Welkhoff, Ari Karchin, Megan Tse, Mingyuan Gao, Moungi G. Bawendi, Robert Langer, Ana Jaklenec Science Translational Medicine18 Dec 2019 Full Access

Vaccines prevent disease and save lives; however, lack of standardized immunization recordkeeping makes it challenging to track vaccine coverage across the world. McHugh et al. developed dissolvable microneedles that deliver patterns of near-infrared light-emitting microparticles to the skin. Particle patterns are invisible to the eye but can be imaged using modified smartphones. By codelivering a vaccine, the pattern of particles in the skin could serve as an on-person vaccination record. Patterns were detected 9 months after intradermal delivery of microparticles in rats, and codelivery of inactivated poliovirus led to protective antibody production. Discrete microneedle-delivered microparticle patterns in porcine and pigmented human skin were identifiable using semiautomated machine learning. These results demonstrate proof of concept for intradermal on-person vaccination recordkeeping. *Abstract* 

Accurate medical recordkeeping is a major challenge in many low-resource settings where wellmaintained centralized databases do not exist, contributing to 1.5 million vaccine-preventable deaths annually. Here, we present an approach to encode medical history on a patient using the spatial distribution of biocompatible, near-infrared quantum dots (NIR QDs) in the dermis. ODs are invisible to the naked eye yet detectable when exposed to NIR light. ODs with a copper indium selenide core and aluminum-doped zinc sulfide shell were tuned to emit in the NIR spectrum by controlling stoichiometry and shelling time. The formulation showing the greatest resistance to photobleaching after simulated sunlight exposure (5-year equivalence) through pigmented human skin was encapsulated in microparticles for use in vivo. In parallel, microneedle geometry was optimized in silico and validated ex vivo using porcine and synthetic human skin. QD-containing microparticles were then embedded in dissolvable microneedles and administered to rats with or without a vaccine. Longitudinal in vivo imaging using a smartphone adapted to detect NIR light demonstrated that microneedle-delivered QD patterns remained bright and could be accurately identified using a machine learning algorithm 9 months after application. In addition, codelivery with inactivated poliovirus vaccine produced neutralizing antibody titers above the threshold considered protective. These findings suggest that intradermal QDs can be used to reliably encode information and can be delivered with a vaccine, which may be particularly valuable in the developing world and open up new avenues for decentralized data storage and biosensing.

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#### **Emergencies**

On the record

#### Ebola - DRC+

Public Health Emergency of International Concern (PHEIC)

**Ebola Outbreak in DRC 72: 17 December 2019** 

Situation Update

In the week of 9 to 15 December 2019, 24 new confirmed Ebola virus disease (EVD) cases were reported from three health zones in two affected provinces in the Democratic Republic of the Congo. The majority of these new confirmed cases are from Mabalako (22/24; 92%), and the other cases were reported from Biena (1/24; 4%) and Mandima (1/24; 4%) health zones.

The new cases from Mabalako and Biena, are linked to a single chain of transmission, in which one individual was a potential source of infection for 24 people. This was the second documentation of EVD illness in this individual within a 6-month period. Based on the preliminary sequencing of samples from the case, this is being classified as a relapse of EVD. Rare cases of relapse have been documented, in which a person who has recovered from EVD gets disease symptoms again, but this is the first documented relapse in this outbreak.

The volume of alerts reported has returned to levels seen before the security incidents in the past weeks. In general, the overall average proportion of contacts under surveillance in the last seven days has returned to previously observed levels. However, Mabalako, the health zone with the highest volume of contacts, has the lowest performance with 73% of contacts under surveillance...

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## <u>First FDA-approved vaccine for the prevention of Ebola virus disease, marking a critical milestone in public health preparedness and response</u> December 19, 2019

The U.S. Food and Drug Administration announced today the approval of Ervebo, the first FDA-approved vaccine for the prevention of Ebola virus disease (EVD), caused by Zaire ebolavirus in individuals 18 years of age and older. Cases of EVD are very rare in the U.S., and those that have occurred have been the result of infections acquired by individuals in other countries who then traveled to the U.S., or health care workers who became ill after treating patients with EVD.

"While the risk of Ebola virus disease in the U.S. remains low, the U.S. government remains deeply committed to fighting devastating Ebola outbreaks in Africa, including the current outbreak in the Democratic Republic of the Congo," said Anna Abram, FDA Deputy Commissioner for Policy, Legislation, and International Affairs. "Today's approval is an important step in our continuing efforts to fight Ebola in close coordination with our partners across the U.S. Department of Health and Human Services, as well as our international partners, such as the World Health Organization. These efforts, including today's landmark approval, reflect the FDA's unwavering dedication to leveraging our expertise to facilitate the development and availability of safe and effective medical products to address urgent public health needs and fight infectious diseases, as part of our vital public health mission."...

... "Ebola virus disease is a rare but severe and often deadly disease that knows no borders. Vaccination is essential to help prevent outbreaks and to stop the Ebola virus from spreading when outbreaks do occur," said Peter Marks, M.D., Ph.D., director of the FDA's Center for Biologics Evaluation and Research. "The FDA's approval of Ervebo is a major advance in helping to protect against the Zaire ebolavirus as well as advancing U.S. government preparedness efforts. The research approach used to study the effectiveness and safety of this vaccine was precedent-setting during a public health emergency and may help create a model for future

studies under similar circumstances. The FDA is committed to continuing our work across the U.S. government and with our international partners to prevent future Ebola outbreaks and mitigate the current outbreak in the DRC, reflecting our nation's commitment to preparing for and responding to biological threats, like Ebola.""

...The FDA granted this application <u>Priority Review</u> and a <u>Tropical Disease Priority Review</u> <u>Voucher</u> under a program intended to encourage development of new drugs and biologics for the prevention and treatment of certain tropical diseases. The FDA also granted <u>Breakthrough Therapy designation</u> for Ervebo to facilitate the development and scientific evaluation of the vaccine. Because of the public health importance of a vaccine to prevent EVD, the FDA worked closely with the company and completed its evaluation of the safety and effectiveness of Ervebo in less than six months. The approval was granted to Merck & Co., Inc.

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#### Merck Announces FDA Approval for ERVEBO® (Ebola Zaire Vaccine, Live)

Action Represents Another Milestone for the Global Partnership Against Ebola December 20, 2019 07:15 AM Eastern Standard Time

KENILWORTH, N.J.--(BUSINESS WIRE)--Merck (NYSE:MRK), known as MSD outside the United States and Canada, today announced that the U.S. Food and Drug Administration (FDA) has approved ERVEBO® (Ebola Zaire Vaccine, Live) (pronounced er-VEE-boh) for the prevention of disease caused by *Zaire ebolavirus* in individuals 18 years of age and older. The duration of protection conferred by ERVEBO is unknown. ERVEBO does not protect against other species of *Ebolavirus or Marburgvirus*. Effectiveness of the vaccine when administered concurrently with antiviral medication, immune globulin (IG), and/or blood or plasma transfusions is unknown. Do not administer ERVEBO to individuals with a history of a severe allergic reaction (e.g., anaphylaxis) to any component of the vaccine, including rice protein.

"Approval of this vaccine by the FDA represents another important milestone in the global response to Ebola Virus Disease and stands as a tremendous accomplishment by a unique global partnership," said Dr. Roger M. Perlmutter president, Merck Research Laboratories. "In acknowledging this event, I wish in particular to recognize the heroic efforts being made by frontline responders to the ongoing outbreak in the Democratic Republic of the Congo. We are proud and honored to play a role in supporting their vital activities, and we remain focused on the important work ahead."

"Having an Ebola vaccine approved by the FDA is a significant milestone in Ebola preparedness and prevention efforts," said Rick Bright, Ph.D., deputy assistant secretary for preparedness and response and director of the Biomedical Advanced Research and Development Authority (BARDA). "At BARDA, we are tremendously proud to have been a part of this unprecedented collaboration between private and public sectors in multiple countries that has led to this important moment in public health history."...

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#### **POLIO**

Public Health Emergency of International Concern (PHEIC)

#### Polio this week as of 18 December 2019

Summary of new viruses this week (AFP cases and ES positives):

- :: Afghanistan two WPV1 cases and two WPV1-positive environmental samples.
- :: **Pakistan** seven WPV1 cases, one cVDPV2 case and 12 WPV1-positive environmental samples.
- :: DR Congo Eight cVDPV2 cases.
- :: Somalia two cVDPV2-positive environmental sample.
- :: Angola 11 cVDPV2 cases and two cVDPV2-positive environmental samples.
- :: Chad one cVDPV2 case.
- :: Ethiopia one cVDPV2-positive environmental sample.
- :: Ghana three cVDPV2 cases.

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#### Editor's Note:

WHO has posted a <u>refreshed emergencies page</u> which presents an updated listing of Grade 3,2,1 emergencies as below.

#### WHO Grade 3 Emergencies [to 21 Dec 2019]

#### **Democratic Republic of the Congo**

:: Ebola Outbreak in DRC 72: 17 December 2019

Mozambique floods - No new digest announcements identified
Nigeria - No new digest announcements identified
Somalia - No new digest announcements identified
South Sudan - No new digest announcements identified
Syrian Arab Republic - No new digest announcements identified
Yemen - No new digest announcements identified

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#### WHO Grade 2 Emergencies [to 21 Dec 2019]

#### **Measles in Europe**

- :: Nordic countries working together to sustain measles and rubella elimination 20-12-2019
- :: 2019: the WHO European Region's year in review 19-12-2019

#### <u>Myanmar</u>

- :: <u>Bi-weekly Situation Report 24 5 December 2019</u> *HIGHLIGHTS*
- :: A total of 1,270,70 doses of oral cholera vaccine (OCV) was approved for the OCV campaign, targeting around 635,000 individuals, which will take place from 8 to 14 December in the Rohingya camps and 8 to 31 December in the host communities.
- :: Since 5 September 2019, a total of 213 cases of Acute Watery Diarrhea (AWD) have tested positive by cholera Rapid Diagnostic Tests (RDTs), or culture.

:: An assessment undertaken for the operational risks associated with Fecal Sludge management (FSM) and water sources has concluded that, urgent actions are required to improve the water safety situation in these camps...

#### *Immunization*

Oral Cholera Vaccine and Measles Outbreak Response Immunization campaigns

- :: The Civil Surgeon, with support from WHO and UNICEF, established an immunization core group. The first meeting took place at the Ministry of Health and Family Welfare (MoHFW) Coordination Cell offices. Details of the upcoming Oral Cholera Vaccine (OCV) campaign were discussed.
- :: A total of 1 270 170 doses of OCV was approved for the OCV campaign targeting around 635 000 individuals. The campaign will take place from 8 to 14 December in the Rohingya camps and 8 to 31 December in the host communities.
- :: Several preparatory meetings have taken place. This includes District planning and Coordination meeting on 27 November, Upazila planning and microplanning meetings on 28 November and several advocacy meetings involving different target leaders including political leaders, Imams, Ministry of Education officials, among others.
- :: Training has taken place for 34 OCV Camp Coordinators, 34 OCV Associate Camp Coordinators on 23 and 24 November 2019. These trainings were cascaded to over 2750 Community Health Workers and Communication for Development volunteers and 240 team supervisors between 28 and 30 November 2019, with support from partners.
- :: For the host community, 300 vaccinators and mobilizers have been trained alongside 50 supervisors. Training for 1 050 and 900 volunteers commenced and will be completed by 4 December 2019, for Teknaf and Ukhia respectively.
- :: The Rohingya Camp Wide Measles Rubella Outbreak Response Immunization (MR ORI) is planned in response to the measles outbreak that is currently confirmed in 16 of 34 camps in the Ukhia and Teknaf Upazila. Discussions on MR ORI took place 28 November 2019 during Scientific and Technical Sub- Committee (STSC) of the National Committee for Immunization Practices (NCIP) meeting held in Dhaka. There is need for timely ORI while ensuring quality, good coverage and proper capacity and management plan for any Adverse Events Following Immunization (AEFI).
- :: MR ORI implementation planned for first week of January 2020 subject to Government approvals and favorable preparedness assessment. The target age group for this ORI is all children 6 months to less than 10 years of age in the Rohingya camps of Ukhia and Teknaf in Cox's Bazar district.

Afghanistan - No new digest announcements identified

Angola - No new digest announcements identified

Burkina Faso [in French] - No new digest announcements identified

Burundi - No new digest announcements identified

Cameroon - No new digest announcements identified

Central African Republic - No new digest announcements identified

Ethiopia - No new digest announcements identified

HIV in Pakistan - No new digest announcements identified

Iran floods 2019 - No new digest announcements identified

Iraq - No new digest announcements identified

Libya - No new digest announcements identified

<u>Malawi floods</u> - No new digest announcements identified

MERS-CoV - No new digest announcements identified

Niger - No new digest announcements identified

occupied Palestinian territory - No new digest announcements identified

<u>Sudan</u> - No new digest announcements identified

<u>Ukraine</u> - No new digest announcements identified

<u>Zimbabwe</u> - No new digest announcements identified

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#### WHO Grade 1 Emergencies [to 21 Dec 2019]

Chad - No new digest announcements identified

Djibouti - No new digest announcements identified

Kenya - No new digest announcements identified

Mali - No new digest announcements identified

Namibia - viral hepatitis - No new digest announcements identified

<u>Tanzania</u> - No new digest announcements identified

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#### **UN OCHA – L3 Emergencies**

The UN and its humanitarian partners are currently responding to three 'L3' emergencies. This is the global humanitarian system's classification for the response to the most severe, large-scale humanitarian crises.

#### **Syrian Arab Republic**

:: <u>Syrian Arab Republic: Recent Developments in Northwestern Syria Flash Update No. 1 - As of 20 December 2019</u>

**HIGHLIGHTS** 

- :: Following the intensification of airstrikes and shelling since 16 December in southern Idleb, tens of thousands of civilians are reportedly fleeing from Ma'arrat An-Nu'man area in southern Idleb governorate to north. Thousands of others are reportedly waiting for the bombardment to ease allowing them to move. The shortage of fuel in Idleb area is also limiting the movement of civilians fleeing from hostilities.
- :: As of 20 December, ground fighting also resumed along the frontlines in southern Idleb governorate, amplifying displacement from southern Idleb as civilians are fleeing in anticipation of fighting directly affecting their communities.
- :: Displacement happening in winter months is exacerbating the vulnerability of people in need. Many of those who fled are in urgent need of humanitarian support, particularly shelter, food, health, non-food and winterization assistance.

Yemen - No new digest announcements identified

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#### **UN OCHA – Corporate Emergencies**

When the USG/ERC declares a Corporate Emergency Response, all OCHA offices, branches and sections provide their full support to response activities both at HQ and in the field. *Editor's Note:* 

Ebola in the DRC has bene added as a OCHA "Corporate Emergency" this week: <a href="Mailto:CYCLONE IDAI">CYCLONE IDAI</a> and Kenneth - No new digest announcements identified EBOLA OUTBREAK IN THE DRC - No new digest announcements identified

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#### WHO & Regional Offices [to 21 Dec 2019]

19 December 2019 News release

<u>Drop in cholera cases worldwide, as key endemic countries report gains in cholera control</u>

[See Milestones above for detail]

19 December 2019 News release

WHO launches new report on global tobacco use trends

18 December 2019 News release

WHO prequalifies first biosimilar medicine to increase worldwide access to lifesaving breast cancer treatment

16 December 2019 News release

More than one in three low- and middle-income countries face both extremes of malnutrition

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#### Weekly Epidemiological Record, 20 December 2019, vol. 94, 51/52 (pp. 613-628)

Index of countries/areas

Index, Volume 94, 2019, Nos. 1-52

Weekly Epidemiological Record, 24 May 2019, vol. 94, SPECIAL ISSUE (pp. i-xlviii)

Immunization and Vaccine-related Implementation Research Advisory Committee Executive summary, September 2019

Monthly report on dracunculiasis cases, January-October 2019

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#### **WHO Regional Offices**

Selected Press Releases, Announcements

#### **WHO African Region AFRO**

No new digest content identified.

#### **WHO Region of the Americas PAHO**

- :: Pan American Health Organization and Airbnb Announce Collaboration (12/20/2019)
- :: PAHO/WHO urges southern hemisphere countries to prepare for heatwayes (12/19/2019)
- :: Rabies Elimination in Haiti: Dog vaccination campaign launched (12/16/2019)

#### **WHO South-East Asia Region SEARO**

No new digest content identified.

#### **WHO European Region EURO**

- :: 2019: the WHO European Region's year in review 19-12-2019
- :: Promoting health literacy as powerful tool to address public health challenges 19-12-2019
- :: Tobacco use declining globally but set to miss targets 19-12-2019
- :: Migrant mothers receiving the support they need 18-12-2019

#### **WHO Eastern Mediterranean Region EMRO**

- :: Seasonal influenza in Yemen 18 December 2019
- :: Giving disabled children in Syria new hope 17 December 2019

#### **WHO Western Pacific Region**

No new digest content identified.

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**CDC/ACIP** [to 21 Dec 2019]

http://www.cdc.gov/media/index.html

https://www.cdc.gov/vaccines/acip/index.html

Wednesday, December 18, 2019

Nine Health Threats that Made Headlines in 2019: A CDC Review

#### MMWR News Synopsis for Friday, December 20, 2019

### <u>Estimating the Incidence of Influenza at the State Level — Utah, 2016–17 and 2017–18 Influenza Seasons</u>

Timely state- or local-level estimates of the number of people who are ill and seek medical care due to influenza (flu) contribute to preparedness and communication messages needed during flu season and in the event of a flu pandemic. As flu season approaches, pilot work done at the Utah Department of Health and Salt Lake County Health Department to estimate seasonal flu burden and severity may help inspire other health departments to adopt similar measures. Methods used by CDC to estimate the numbers of people who are ill, seek medical care, or who are hospitalized due to flu nationally were applied for the first time at state and local levels. Results showed that in Utah during the 2017-18 flu season, approximately 11% of Utah residents were sick due to flu, and 3,900 of these people had severe flu illness requiring hospitalization. These findings complement a previous report

(<u>https://www.cdc.gov/mmwr/volumes/68/wr/mm6806a7.htm</u>) on real-time flu season severity estimation in Utah that is now actively used in the state

(http://health.utah.gov/epi/diseases/influenza/surveillance/2019-

<u>2020/Utah Weekly Influenza Report.htmlexternal icon</u>). State or county health departments may consider adapting these reproducible methods in their jurisdictions to estimate local flu disease burden and severity to help public health officials, policymakers, and clinicians tailor flu messaging, planning, and responses for seasonal flu epidemics and pandemics.

<u>Ebola Virus Disease Outbreak — Democratic Republic of the Congo, August 2018—November 2019</u>

The Democratic Republic of Congo's (DRC) Ministry of Health (MoH), along with international partners, have improved the MoH's ability to respond to the DRC's current Ebola epidemic and to identify targeted intervention strategies for affected health zones. However, because this outbreak is happening in the context of more violence than seen in earlier outbreaks, there is a need for innovative approaches beyond the conventional Ebola response. On August 1, 2018, the DRC MoH declared the tenth outbreak of Ebola virus disease (Ebola) in DRC, in the North Kivu Province in eastern DRC on the border with Uganda. From the beginning of the outbreak to November 17, 2019, a total of 3,296 Ebola cases and 2,196 (67%) deaths were reported, making this the second largest documented outbreak after the 2014–2016 epidemic in West Africa. Since August 2018, the DRC MoH has been collaborating with international partners to control the outbreak. Although the DRC has successfully contained Ebola outbreaks in the past, challenges specific to North Kivu and Ituri provinces have complicated outbreak control. Limited infrastructure and resources, armed conflict, and community distrust of local authorities and international partners are major challenges faced by the Ebola response.

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Africa CDC [to 21 Dec 2019]

http://www.africacdc.org/

News

**Togo Health Minister Elected Chair of Africa CDC Governing Board** 

02-12-2019

The Health Minister of Togo, Prof. Moustafa Mijiyawa, has been elected Chair of the Africa CDC Governing Board for a term of three years. He was unanimously chosen by representatives of Member States present in the 6th meeting of the Board in Addis Ababa, Ethiopia, on 2 December 2019. Prof. Mijiyawa, an Officer of the Order of Academic Palms and Knight of the Order of Mono, has been Togo's Minister of Health and Public Hygiene since June...

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#### **China CDC**

http://www.chinacdc.cn/en/ No new digest content identified.

#### **National Health Commission of the People's Republic of China**

http://en.nhc.gov.cn/ Updated: 2019-12-19

TCM further incorporated into medical systems of B&R countries

Xinhua

BEIJING — Traditional Chinese Medicine (TCM) has been further incorporated into medical systems of Belt and Road countries due to China's increased medical exchanges and cooperation in the region, according to a forum on TCM development.

China has set up a group of overseas TCM centers in relevant B&R countries and regions and is building a batch of bases for international cooperation on TCM, according to participants at the forum, which was held in Beijing Dec 18.

Chinese TCM experts have also taken research tours to other countries, including Russia and Poland. Experts from China and the ASEAN have co-published a book listing 350 kinds of traditional medicines in the above countries.

Lui Tuck Yew, Singaporean ambassador to China, said Singapore attaches great importance to TCM development, and that acupuncture has been introduced in public hospitals for rehabilitative therapies.

Li Malin, vice-governor of Yunnan province in Southwest China, said nearly 800 foreign students come to Yunnan to study TCM on an annual basis, and that over one-third of the 350,000 foreign patients received by local hospitals are treated with TCM each year.

However, experts said the development of TCM in B&R countries still needs to address issues ranging from standardization, trade barriers, legal barriers, and the differences in cultural backgrounds and market demands between different countries.

The forum, the third of its kind, was co-organized by the Chinese People's Association for Friendship with Foreign Countries and the Beijing municipal people's government. It aimed to promote international cooperation on TCM.

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#### **Announcements**

**Paul G. Allen Frontiers Group** [to 21 Dec 2019] <a href="https://alleninstitute.org/what-we-do/frontiers-group/news-press/">https://alleninstitute.org/what-we-do/frontiers-group/news-press/</a> No new digest content identified.

**BMGF - Gates Foundation** [to 21 Dec 2019] http://www.gatesfoundation.org/Media-Center/Press-Releases No new digest content identified.

#### **Bill & Melinda Gates Medical Research Institute** [to 21 Dec 2019]

https://www.gatesmri.org/

The Bill & Melinda Gates Medical Research Institute is a non-profit biotech organization. Our mission is to develop products to fight malaria, tuberculosis, and diarrheal diseases—three major causes of mortality, poverty, and inequality in developing countries. The world has unprecedented scientific tools at its disposal; now is the time to use them to save the lives of the world's poorest people

No new digest content identified.

**CARB-X** [to 21 Dec 2019] https://carb-x.org/

CARB-X is a non-profit public-private partnership dedicated to accelerating antibacterial research to tackle the global rising threat of drug-resistant bacteria. No new digest content identified.

#### **CEPI – Coalition for Epidemic Preparedness Innovations** [to 21 Dec 2019]

http://cepi.net/ Latest news

No new digest content identified.

#### Clinton Health Access Initiative, Inc. (CHAI) [to 21 Dec 2019]

https://clintonhealthaccess.org/ News & Press Releases

No new digest content identified.

#### **EDCTP** [to 21 Dec 2019]

http://www.edctp.org/

The European & Developing Countries Clinical Trials Partnership (EDCTP) aims to accelerate the development of new or improved drugs, vaccines, microbicides and diagnostics against HIV/AIDS, tuberculosis and malaria as well as other poverty-related and neglected infectious diseases in sub-Saharan Africa, with a focus on phase II and III clinical trials Latest news

No new digest content identified.

#### **Emory Vaccine Center** [to 21 Dec 2019]

http://www.vaccines.emory.edu/ No new digest content identified.

#### **European Medicines Agency** [to 21 Dec 2019]

http://www.ema.europa.eu/ema/ News & Press Releases No new digest content identified.

#### **European Vaccine Initiative** [to 21 Dec 2019]

http://www.euvaccine.eu/news-events No new digest content identified.

#### **FDA** [to 21 Dec 2019]

https://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/default.htm Announcements

<u>December 19, 2019 - First FDA-approved vaccine for the prevention of Ebola virus disease, marking a critical milestone in public health preparedness and response</u>

#### [See Milestones above for detail]

#### Fondation Merieux [to 21 Dec 2019]

http://www.fondation-merieux.org/

News, Events

20 - 22 Jan 2020

Mérieux Foundation co-organized event

#### **Dengue pre-vaccination screening strategies workshop**

Les Pensières Center for Global Health, Veyrier-du-Lac (France)

#### **Gavi** [to 21 Dec 2019]

https://www.gavi.org/

No new digest content identified.

#### **GHIT Fund** [to 21 Dec 2019]

https://www.ghitfund.org/newsroom/press

GHIT was set up in 2012 with the aim of developing new tools to tackle infectious diseases that No new digest content identified.

#### **Global Fund** [to 21 Dec 2019]

https://www.theglobalfund.org/en/news/

News & Stories

**Updates** 

#### **Technical Evaluation Reference Group: Market Shaping Strategy Mid-Term Review**

20 December 2019

Thematic Review of Market Shaping Strategy (Mid-Term) download in English

News

#### Highest-Ever Funding Allocations Announced to Fight AIDS, TB and Malaria

18 December 2019

[See Milestones above for detail]

Feature Story

#### **2019: A Record Year for Global Health**

17 December 2019

#### Hilleman Laboratories [to 21 Dec 2019]

http://www.hillemanlabs.org/

No new digest content identified.

#### **Human Vaccines Project** [to 21 Dec 2019]

http://www.humanvaccinesproject.org/media/press-releases/

Press Releases No new digest content identified.

**IAVI** [to 21 Dec 2019]

https://www.iavi.org/newsroom

December 18, 2019

#### **EDCTP-Funded Clinical Trial of New TB Vaccine Initiates Vaccinations**

Partners collaborate in trial to evaluate whether vaccine candidate can prevent recurrence of TB disease

18 DECEMBER 2019 — Statens Serum Institut (SSI) in Copenhagen, Denmark, is the coordinator of a consortium that has been granted EUR 13.8 million from the <u>European & Developing Countries Clinical Trial Partnership</u> (EDCTP) supported by the European Union. The grant finances a clinical trial in South Africa and Tanzania of a new and promising tuberculosis (TB) vaccine candidate H56:IC31\* developed by SSI. SSI and Aeras Global TB Vaccine Foundation NPC (a South African affiliate of IAVI) are co-sponsors of the trial.

The consortium consists of partners from South Africa, Tanzania, Italy, and Denmark: the South African Tuberculosis Vaccine Initiative (SATVI; Cape Town, South Africa), University of Cape Town Lung Institute (Cape Town, South Africa), TASK Applied Science (Cape Town, South Africa), the Aurum Institute (Johannesburg, South Africa), the National Institute for Medical Research (NIMR; Mbeya, Tanzania), Ospedale San Raffaele (Milan, Italy), the Aeras Global TB Vaccine Foundation NPC (Cape Town, South Africa), and SSI (a governmental research institution under the Danish Ministry of Health)...

#### **International Coalition of Medicines Regulatory Authorities [ICMRA]**

http://www.icmra.info/drupal/en/news Selected Statements, Press Releases, Research No new digest content identified.

#### **International Generic and Biosimilar Medicines Association [IGBA]**

https://www.igbamedicines.org/ No new digest content identified.

#### **IFFIm**

http://www.iffim.org/library/news/press-releases/ No new digest content identified.

IFRC [to 21 Dec 2019] http://media.ifrc.org/ifrc/news/press-releases/ Selected Press Releases, Announcements No new digest content identified.

**IVAC** [to 21 Dec 2019]

https://www.jhsph.edu/research/centers-and-institutes/ivac/index.html

**Updates** 

No new digest content identified.

**IVI** [to 21 Dec 2019]

http://www.ivi.int/

Selected IVI News & Announcements

#### IVI appoints three new members to its Board of Trustees

December 18, 2019 – SEOUL, South Korea – The International Vaccine Institute (IVI), a Seoul, Korea-based international organization dedicated to accelerating vaccines for global health, announced today that Professor Gordon Dougan, Dr. Melanie Saville, and Dr. Jean-Marie Okwo-Bele will join its Board of Trustees (BOT) early next year. The three new members were elected at a face-to-face board meeting last month, and their terms will commence at the end of the next BOT meeting, scheduled for February 27, 2020.

"I'm very pleased to announce that three exemplary leaders across vaccinology, vaccine development and Global Health have joined the IVI Board of Trustees," said Dr. Jerome Kim, Director General of IVI. "As we continue to diversify our vaccine portfolio and expand into different research areas, we and our global network of partners will greatly benefit from the expertise and guidance of Professor Dougan, Dr. Saville, and Dr. Okwo-Bele."

- :: Professor Gordon Dougan, GSK Professor, Department of Medicine at Cambridge University
- :: Dr. Melanie Saville, Director of Vaccine Development, Coalition for Epidemic Preparedness Innovations (CEPI)
  - :: Dr. Jean-Marie Okwo-Bele, Independent Public Health Consultant

**JEE Alliance** [to 21 Dec 2019]

https://www.jeealliance.org/ Selected News and Events No new digest content identified.

#### MSF/Médecins Sans Frontières [to 21 Dec 2019]

http://www.msf.org/

Latest [Selected Announcements]

Democratic Republic of Congo

#### Extra humanitarian assistance urgently needed in southern North Kivu crisis

Press Release 16 Dec 2019

- :: A little-known humanitarian crisis is affecting the territories of Masisi, Rutshuru and Walikale in the southern part of DRC's North Kivu province.
- :: More than 685,000 displaced people live in camps or are hosted by local families, with worrying levels of malnutrition and sexual violence.
- :: With almost no aid organisations on the ground, MSF urges humanitarian organisations and donors to immediately return to this neglected area.

National Vaccine Program Office - U.S. HHS [to 21 Dec 2019]

https://www.hhs.gov/vaccines/about/index.html

NVAC 2020 Meetings

February 13-14, 2020 NVAC Meeting

June 9-10, 2020 NVAC Meeting

September 23-24, 2020 Meeting (Virtual)

**NIH** [to 21 Dec 2019]

http://www.nih.gov/news-events/news-releases

Selected News Releases

#### Infectious Diseases Clinical Research Consortium awards announced

New NIH grants build on established clinical trials program.

Thursday, December 19, 2019

The National Institute of Allergy and Infectious Diseases (NIAID), one of the National Institutes of Health, today announced the establishment of the Infectious Diseases Clinical Research Consortium, a clinical trials network that will encompass the Institute's long-standing Vaccine and Treatment Evaluation Units (VTEUs) and create a new consortium leadership group. NIAID intends to provide approximately \$29 million per year for seven years for the VTEU program and its companion leadership group.

The consortium leadership group will be headed by co-principal investigators David S. Stephens, M.D., of Emory University, and Kathleen M. Neuzil, M.D., M.P.H., of the University of Maryland School of Medicine. The group will include VTEU investigators as well as scientific experts in infectious diseases who will prioritize candidate vaccines, diagnostics, therapeutics and other interventions to test in clinical trials. To respond to public health emergencies, the leadership group will have the capacity to rapidly organize and initiate clinical trials at the VTEU sites. It also will coordinate activities with VTEU sites implementing specific clinical trials and with scientific staff in the NIAID Division of Microbiology and Infectious Diseases (DMID).

The nine VTEUs are located at institutions across the United States. They will conduct Phase 1 through 4 vaccine and treatment trials, including clinical studies in collaboration with industry partners. Depending on the disease or condition, the VTEUs may establish study sites and enroll participants at locations outside the United States. Additionally, sites will have the capacity to conduct human challenge trials—where healthy volunteers are exposed to infection under tightly controlled conditions—of influenza, malaria and other diseases....

#### NIH-developed Zika vaccine improves fetal outcomes in animal model

December 19, 2019 — Zika virus is primarily transmitted to humans by Aedes mosquitoes.

<u>Children with HIV score below HIV-negative peers in cognitive, motor function tests</u> December 18, 2019 — Disparity worsens over time despite early HIV treatment, NIH study

finds.

**PATH** [to 21 Dec 2019]

https://www.path.org/media-center/

Selected Announcements

New pneumococcal vaccine from Serum Institute of India achieves WHO prequalification

December 19, 2019 by Lauren Newhouse

This milestone marks a key step toward improving pneumococcal conjugate vaccine affordability and enabling sustainable access for low- and middle-income countries

Pune, India and Seattle, United States, December 19, 2019—PNEUMOSIL®, a vaccine against a leading cause of deadly childhood pneumonia—the pneumococcus bacterium—has achieved prequalification by the World Health Organization (WHO). Developed though a collaboration spanning over a decade between Serum Institute of India, Pvt., Ltd. (SIIPL) and PATH and with funding from the Bill & Melinda Gates Foundation, the vaccine is expected to provide protection for children on par with other pneumococcal conjugate vaccines at a price that is more affordable for low- and middle-income countries...

#### Sabin Vaccine Institute [to 21 Dec 2019]

http://www.sabin.org/updates/pressreleases Statements and Press Releases No new digest content identified.

**UNAIDS** [to 21 Dec 2019]

http://www.unaids.org/en Selected Press Releases/Reports/Statements 18 December 2019

**Health kiosks expanding HIV services in Zimbabwe** 

18 December 2019

Communities are making the difference in the HIV response

17 December 2019

Young people and men less likely to know their HIV status

#### **UNICEF** [to 21 Dec 2019]

https://www.unicef.org/media/press-releases
Selected Statements, Press Releases, Reports
Press release

Waves of protests around the world are reminder that voices of children and adolescents must be heard and their rights protected

Statement by UNICEF Executive Director Henrietta Fore 17/12/2019

#### Vaccination Acceptance Research Network (VARN) [to 21 Dec 2019]

https://vaccineacceptance.org/news.html#header1-2r No new digest content identified.

Vaccine Confidence Project [to 21 Dec 2019]

http://www.vaccineconfidence.org/ No new digest content identified.

#### **Vaccine Education Center – Children's Hospital of Philadelphia** [to 21 Dec 2019]

http://www.chop.edu/centers-programs/vaccine-education-center

December 2019
Newsletter

#### Wellcome Trust [to 21 Dec 2019]

https://wellcome.ac.uk/news

Opinion | 18 December 2019

### This is the decade we made one of the world's deadliest diseases preventable and curable

by Jeremy Farrar

The commitment to research during the last two Ebola outbreaks has changed the course of this disease. Jeremy Farrar reflects on what made this possible.

Opinion | 18 December 2019

#### How 'connectors' bridge the gap between research and the public by Carla Ross

News | 17 December 2019

<u>Stellar science and research funded by another year of strong investment returns</u>

Strong investment returns in 2019 mean Wellcome has been able to spend over £1.1 billion on improving health for everyone.

#### **The Wistar Institute** [to 21 Dec 2019]

https://www.wistar.org/news/press-releases

Press Release Dec. 19, 2019

#### The Wistar Institute Received Nearly \$2.5M in Philanthropic Support

PHILADELPHIA — (Dec. 19, 2019) — In the past six months, scientists at The Wistar Institute received funding from private foundations totaling \$2,418,000 that will fuel new discoveries in cancer, immunology and infectious diseases.

#### World Organisation for Animal Health (OIE) [to 21 Dec 2019]

https://www.oie.int/en/for-the-media/press-releases/2019/ No new digest content identified.

::::::

#### **ARM [Alliance for Regenerative Medicine]** [to 21 Dec 2019]

https://alliancerm.org/press-releases/

No new digest content identified.

**BIO** [to 21 Dec 2019]

https://www.bio.org/press-releases

Press Releases

No new digest content identified.

#### **DCVMN – Developing Country Vaccine Manufacturers Network** [to 21 Dec 2019]

http://www.dcvmn.org/

News

No new digest content identified.

**IFPMA** [to 21 Dec 2019]

http://www.ifpma.org/resources/news-releases/ Selected Press Releases, Statements, Publications No new digest content identified.

**PhRMA** [to 21 Dec 2019]

http://www.phrma.org/ Selected Press Releases, Statements No new digest content identified.

\* \* \* \*

#### 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 focu-s 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: <a href="mailto:david.r.curry@centerforvaccineethicsandpolicy.org">david.r.curry@centerforvaccineethicsandpolicy.org</a>

#### **American Journal of Infection Control**

December 2019 Volume 47, Issue 12, p1405-1524 <a href="http://www.ajicjournal.org/current">http://www.ajicjournal.org/current</a> [Reviewed earlier]

#### **American Journal of Preventive Medicine**

December 2019 Volume 57, Issue 6, p733-874 <a href="http://www.ajpmonline.org/current">http://www.ajpmonline.org/current</a> [Reviewed earlier]

#### **American Journal of Public Health**

January 2020 110(1) <a href="http://ajph.aphapublications.org/toc/ajph/current">http://ajph.aphapublications.org/toc/ajph/current</a> [Reviewed earlier]

#### **American Journal of Tropical Medicine and Hygiene**

Volume 101, Issue 6, 2019 http://www.ajtmh.org/content/journals/14761645/101/6 [Reviewed earlier]

#### **Annals of Internal Medicine**

17 December 2019 Vol: 171, Issue 12 <a href="http://annals.org/aim/issue">http://annals.org/aim/issue</a> [New issue; No digest content identified]

#### **BMC Cost Effectiveness and Resource Allocation**

http://resource-allocation.biomedcentral.com/ (Accessed 21 Dec 2019) [No new digest content identified]

#### **BMJ Global Health**

November 2019 - Volume 4 - 6 https://gh.bmj.com/content/4/6 [Reviewed earlier]

#### **BMC Health Services Research**

http://www.biomedcentral.com/bmchealthservres/content (Accessed 21 Dec 2019) [No new digest content identified]

#### **BMC Infectious Diseases**

http://www.biomedcentral.com/bmcinfectdis/content (Accessed 21 Dec 2019)

<u>Comparing alternative cholera vaccination strategies in Maela refugee camp: using a transmission model in public health practice</u>

Cholera is a major public health concern in displaced-person camps, which often contend with overcrowding and scarcity of resources. Maela, the largest and longest-standing refugee camp in Thailand, located al...

Authors: Joshua Havumaki, Rafael Meza, Christina R. Phares, Kashmira Date and Marisa C. Eisenberg

Citation: BMC Infectious Diseases 2019 19:1075

Content type: Research Article Published on: 21 December 2019

#### <u>Prepared for PrEP: preferences for HIV pre-exposure prophylaxis among Chinese</u> men who have sex with men in an online national survey

Pre-exposure prophylaxis (PrEP) is not widely available in China. Previous studies reported low awareness and inconclusive findings on the acceptability of PrEP among Chinese men who have sex with men (MSM).

Authors: Wenting Huang, Dan Wu, Jason J. Ong, M. Kumi Smith, Fan Yang, Hongyun Fu,

Weiming Tang and Joseph D. Tucker

Citation: BMC Infectious Diseases 2019 19:1057

Content type: Research article Published on: 16 December 2019

#### **BMC Medical Ethics**

http://www.biomedcentral.com/bmcmedethics/content

(Accessed 21 Dec 2019)

#### <u>Community perspectives on randomisation and fairness in a cluster randomised</u> <u>controlled trial in Zambia</u>

One important ethical issue in randomised controlled trials (RCTs) is randomisation. Relatively little is known about how participating individuals and communities understand and perceive central aspects of ra...

Authors: Maureen Mupeta Kombe, Joseph Mumba Zulu, Charles Michelo and Ingvild F. Sandøy

Citation: BMC Medical Ethics 2019 20:99

Content type: Research article Published on: 21 December 2019

#### **BMC Medicine**

http://www.biomedcentral.com/bmcmed/content (Accessed 21 Dec 2019) [No new digest content identified]

#### **BMC Pregnancy and Childbirth**

http://www.biomedcentral.com/bmcpregnancychildbirth/content

(Accessed 21 Dec 2019)

### <u>Determinants of influenza vaccination uptake in pregnancy: a large single-Centre cohort study</u>

Although vaccination of pregnant women against influenza is recommended, the vaccination rate remains low. We conducted a study to identify determinants of influenza vaccination uptake in pregnancy in order to...

Authors: Stéphanie Bartolo, Emilie Deliege, Ophélie Mancel, Philippe Dufour, Sophie Vanderstichele, Marielle Roumilhac, Yamina Hammou, Sophie Carpentier, Rodrigue Dessein, Damien Subtil and Karine Faure

Citation: BMC Pregnancy and Childbirth 2019 19:510

Content type: Research article

Published on: 19 December 2019

#### **BMC Public Health**

http://bmcpublichealth.biomedcentral.com/articles

(Accessed 21 Dec 2019)

### <u>Pharmacy-based interventions to increase vaccine uptake: report of a multidisciplinary stakeholders meeting</u>

Despite the existence of efficacious vaccines, the burden of vaccine-preventable diseases remains high and the potential health benefits of paediatric, adolescent and adult vaccination are not being achieved d...

Authors: Fiona Ecarnot, Gaetano Crepaldi, Philippe Juvin, John Grabenstein, Giuseppe Del Giudice, Litjen Tan, Susan O'Dwyer, Susanna Esposito, Xavier Bosch, Gaetan Gavazzi, John Papastergiou, Jacques Gaillat, Robert Johnson, Marco Fonzo, Andrea Rossanese, Caterina Suitner...

Citation: BMC Public Health 2019 19:1698

Content type: Debate

Published on: 18 December 2019

### <u>Impact of national influenza vaccination strategy in severe influenza outcomes among the high-risk Portuguese population</u>

All aged individuals with a chronic condition and those with 65 and more years are at increased risk of severe influenza post-infection complications. There is limited research on cases averted by the yearly v...

Authors: Ausenda Machado, Irina Kislaya, Amparo Larrauri, Carlos Matias Dias and Baltazar

Nunes

Citation: BMC Public Health 2019 19:1690

Content type: Research article Published on: 16 December 2019

#### **BMC Research Notes**

http://www.biomedcentral.com/bmcresnotes/content (Accessed 21 Dec 2019) [No new digest content identified]

#### **BMJ Open**

December 2019 - Volume 9 - 12 http://bmjopen.bmj.com/content/current [Reviewed earlier]

#### **Bulletin of the World Health Organization**

Volume 97, Number 12, December 2019, 789-856 <a href="https://www.who.int/bulletin/volumes/97/12/en/">https://www.who.int/bulletin/volumes/97/12/en/</a> [Reviewed earlier]

#### **Child Care, Health and Development**

Volume 45, Issue 6 Pages: 773-876 November 2019 <a href="https://onlinelibrary.wiley.com/toc/13652214/current">https://onlinelibrary.wiley.com/toc/13652214/current</a> [Reviewed earlier]

#### **Clinical Therapeutics**

December 2019 Volume 41, Issue 12, p2461-2680 <a href="http://www.clinicaltherapeutics.com/current">http://www.clinicaltherapeutics.com/current</a> [Reviewed earlier]

#### **Clinical Trials**

Volume 16 Issue 6, December 2019 <a href="https://journals.sagepub.com/toc/ctja/16/6">https://journals.sagepub.com/toc/ctja/16/6</a> [Reviewed earlier]

#### **Conflict and Health**

http://www.conflictandhealth.com/ [Accessed 21 Dec 2019] [No new digest content identified]

#### **Contemporary Clinical Trials**

Volume 87 December 2019 <a href="https://www.sciencedirect.com/journal/contemporary-clinical-trials/vol/87/suppl/C">https://www.sciencedirect.com/journal/contemporary-clinical-trials/vol/87/suppl/C</a> [Reviewed earlier]

#### The CRISPR Journal

Volume 2, Issue 6 / December 2019 https://www.liebertpub.com/toc/crispr/2/6 Perspectives

#### Genetic Protection Modifications: Moving Beyond the Binary Distinction Between Therapy and Enhancement for Human Genome Editing

Rasmus Bjerregaard Mikkelsen, Henriette Reventlow S. Frederiksen, Mickey Gjerris, Bjørn Holst, Poul Hyttel, Yonglun Luo, Kristine Freude, and Peter Sandøe

Pages:362-369

Published Online:16 December 2019 https://doi.org/10.1089/crispr.2019.0024

**Abstract** 

The current debate and policy surrounding the use of genome editing in humans typically relies on a binary distinction between therapy and human enhancement. Here, we argue that this dichotomy fails to take into account perhaps the most significant potential uses of CRISPR-Cas9 genome editing in humans. We argue that genetic treatment of sporadic Alzheimer's disease, breast and ovarian cancer predisposing BRCA1/2 mutations, and the introduction of human

immunodeficiency virus resistance in humans should be considered within a new category of genetic protection treatments. We suggest that if this category is not introduced, life-altering research might be unnecessarily limited by current or future policy. Otherwise ad hoc decisions might be made, which introduce a risk of unforeseen moral costs, and might overlook or fail to address some important opportunities.

#### Open Access

### <u>Safety of Germline Genome Editing for Genetically Related "Future" Children as Perceived by Parents</u>

Tetsuya Ishii and Iñigo de Miguel Beriain

Pages:370-375

Published Online:19 November 2019 https://doi.org/10.1089/crispr.2019.0010

**Abstract** 

The social acceptability of germline genome editing (GGE) depends on its perceived safety, as well as respect for reproductive autonomy. However, it is doubtful that prospective parents sufficiently understand the risks of GGE. In the future, the use of GGE in specific situations seems plausible, as it offers couples potential means to safeguard genetically related future children from a serious disease and overcome infertility due to a gene mutation. Should GGE fail, however, some couples may be obliged to abort affected fetuses, or give birth to adversely affected children, which would be a tragedy. Some children might develop diseases later in life due to overlooked off-target mutations. Compounding this, some parents are unlikely to inform their offspring about the details of conception, hampering necessary follow-up. Prospective parents, scientists and policy makers should carefully discuss the safety implications of GGE for genetically related future children.

#### **Current Genetic Medicine Reports**

Volume 7, Issue 4, December 2019 https://link.springer.com/journal/40142/7/4 [Reviewed earlier]

#### **Current Opinion in Infectious Diseases**

December 2019 - Volume 32 - Issue 6 <a href="https://journals.lww.com/co-infectiousdiseases/pages/currenttoc.aspx">https://journals.lww.com/co-infectiousdiseases/pages/currenttoc.aspx</a> [Reviewed earlier]

#### **Developing World Bioethics**

Volume 19, Issue 4 Pages: 187-247 December 2019 <a href="https://onlinelibrary.wiley.com/toc/14718847/current">https://onlinelibrary.wiley.com/toc/14718847/current</a> [Reviewed earlier]

#### **Development in Practice**

Volume 29, Issue 8, 2019 <a href="http://www.tandfonline.com/toc/cdip20/current">http://www.tandfonline.com/toc/cdip20/current</a>

#### [Reviewed earlier]

#### **Disaster Medicine and Public Health Preparedness**

Volume 13 - Issue 4 - August 2019 <a href="https://www.cambridge.org/core/journals/disaster-medicine-and-public-health-preparedness/">https://www.cambridge.org/core/journals/disaster-medicine-and-public-health-preparedness/</a> [Reviewed earlier]

#### **Disasters**

Volume 44, Issue 1 Pages: 1-232 January 2020 <a href="https://onlinelibrary.wiley.com/toc/14677717/current">https://onlinelibrary.wiley.com/toc/14677717/current</a> [Reviewed earlier]

#### **EMBO Reports**

Volume 20 Issue 12 5 December 2019 <a href="https://www.embopress.org/toc/14693178/current">https://www.embopress.org/toc/14693178/current</a> [Reviewed earlier]

#### **Emerging Infectious Diseases**

Volume 25, Number 12—December 2019 <a href="http://wwwnc.cdc.gov/eid/">http://wwwnc.cdc.gov/eid/</a> [Reviewed earlier]

#### **Epidemics**

Volume 29 December 2019 <a href="https://www.sciencedirect.com/journal/epidemics/vol/29/suppl/C">https://www.sciencedirect.com/journal/epidemics/vol/29/suppl/C</a> [Reviewed earlier]

#### **Epidemiology and Infection**

Volume 147 - 2019 <a href="https://www.cambridge.org/core/journals/epidemiology-and-infection/latest-issue">https://www.cambridge.org/core/journals/epidemiology-and-infection/latest-issue</a> [Reviewed earlier]

#### **Ethics & Human Research**

Volume 41, Issue 6 November–December 2019
<a href="https://onlinelibrary.wiley.com/toc/25782363/current">https://onlinelibrary.wiley.com/toc/25782363/current</a> *Trial Design, Stakeholder Perspectives, Pregnancy and Research*[Reviewed earlier]

#### The European Journal of Public Health

Volume 29, Issue 6, December 2019

### https://academic.oup.com/eurpub/issue/29/6 [Reviewed earlier]

#### **Gates Open Research**

https://gatesopenresearch.org/browse/articles [Accessed 21 Dec 2019] [No new digest content identified]

#### **Genome Medicine**

https://genomemedicine.biomedcentral.com/articles [Accessed 21 Dec 2019] [No new digest content identified]

#### **Global Health Action**

Volume 12, 2019 Supp 1
<a href="https://www.tandfonline.com/toc/zgha20/12/sup1?nav=tocList">https://www.tandfonline.com/toc/zgha20/12/sup1?nav=tocList</a>

\*\*Antimicrobial Resistance - Issue In Progress

[Reviewed earlier]

#### **Global Health: Science and Practice (GHSP)**

Vol. 7, No. 3 September 23, 2019 <a href="http://www.ghspjournal.org/content/current">http://www.ghspjournal.org/content/current</a> [Reviewed earlier]

#### **Global Public Health**

Volume 14, 2019 Issue 12 <a href="http://www.tandfonline.com/toc/rgph20/current">http://www.tandfonline.com/toc/rgph20/current</a> [Reviewed earlier]

#### **Globalization and Health**

http://www.globalizationandhealth.com/ [Accessed 21 Dec 2019]

<u>Urban health: an example of a "health in all policies" approach in the context of SDGs implementation</u>

Cities are an important driving force to implement the Sustainable Development Goals (SDGs) and the New Urban Agenda. The SDGs provide an operational framework to consider urbanization globally, while providin...

Authors: Oriana Ramirez-Rubio, Carolyn Daher, Gonzalo Fanjul, Mireia Gascon, Natalie Mueller, Leire Pajín, Antoni Plasencia, David Rojas-Rueda, Meelan Thondoo and Mark J. Nieuwenhuijsen

Citation: Globalization and Health 2019 15:87

Content type: Research

Published on: 18 December 2019

#### **Health Affairs**

Vol. 38, No. 12 December 2019

https://www.healthaffairs.org/toc/hlthaff/current

Rural Health

[New issue; No digest content identified]

#### **Health and Human Rights**

Volume 21, Issue 2, December 2019

https://www.hhrjournal.org/volume-21-issue-2-december-2019/

Special Section: Abortion in the Middle East and North Africa

Special Section: Abortion Law Reform

Special Section: Human Rights for Health across the United Nations

[Reviewed earlier]

#### **Health Economics, Policy and Law**

Volume 15 - Issue 1 - January 2020

https://www.cambridge.org/core/journals/health-economics-policy-and-law/latest-issue [Reviewed earlier]

#### **Health Policy and Planning**

Volume 34, Issue Supplement 3, December 2019

https://academic.oup.com/heapol/issue/34/Supplement 3

Access to Medicines through Health Systems in Low- and Middle-Income Countries

[Reviewed earlier]

#### **Health Research Policy and Systems**

http://www.health-policy-systems.com/content

[Accessed 21 Dec 2019]

<u>Strengthening capacity to use research evidence in health sector policy-making:</u>
<u>experience from Kenya and Malawi</u>

Among the many barriers to evidence use in decision-making, weak capacity for evidence use has attracted a lot of focus in the last decade. The study aims to inform and enrich ongoing and future efforts to str...

Authors: Rose N. Oronje, Violet I. Murunga and Eliya M. Zulu Citation: Health Research Policy and Systems 2019 17:101

Content type: Research

Published on: 19 December 2019

#### **Human Gene Therapy**

Volume 30, Issue 12 / December 2019 https://www.liebertpub.com/toc/hum/30/12

#### **Editorials**

#### <u>Prime Editing: A Novel Cas9-Reverse Transcriptase Fusion May Revolutionize</u> <u>Genome Editing</u>

Terence R. Flotte and Guangping Gao

Pages:1445-1446

Published Online:16 December 2019

https://doi.org/10.1089/hum.2019.29098.trf

#### **Humanitarian Exchange Magazine**

Number 75, May 2019

https://odihpn.org/magazine/making-humanitarian-action-work-for-women-and-girls/

### **Special Feature: Making humanitarian action work for women and girls** by HPN May 2019

The theme of this edition of Humanitarian Exchange, co-edited with Women Deliver, is making humanitarian action work for women and girls. Despite gains, including commitments made at the World Humanitarian Summit, there is still much to be done to address the gendered impacts of humanitarian crises and improve gender-sensitive humanitarian action.

In the lead article, <u>Jacqueline Paul</u> advocates for feminist humanitarian action based on evidence that improvements in women's socio-economic status can reduce excess mortality among women after shocks. <u>Jean Kemitare, Juliet Were and Jennate Eoomkham</u> look at the role of local women's rights organisations in preventing and responding to violence against women and girls, and <u>Marcy Hersh and Diana Abou Abbas</u> highlight opportunities for more concrete action on sexual and reproductive health in emergencies.

Citing experience from Vanuatu, <u>Jane Newnham</u> explains how women will choose to use contraceptives even during a humanitarian response, when services and counselling are delivered in an appropriate and responsive way. Drawing on experience in Bangladesh, <u>Tamara Fetters and colleagues</u> challenge the belief that abortion is a non-essential service, or too complicated for humanitarian actors to provide. <u>Darcy Ataman, Shannon Johnson, Justin Cikuru and Jaime Cundy</u> reflect on an innovative programme using music therapy to help survivors of trauma.

Emilie Rees Smith, Emma Symonds and Lauryn Oates highlight lessons from the STAGE education programme in Afghanistan, and Degan Ali and Dega Saleh outline how African Development Solutions is helping women and girls take on leadership and decision-making roles in Somalia. Fiona Samuels and Taveeshi Gupta explore patterns of suicide among young people in Vietnam, with a particular focus on girls, and Subhashni Raj, Brigitte Laboukly and Shantony Moli illustrate the importance of a gendered approach to community-based disaster risk reduction in the South-West Pacific. Nicola Jones, Workneh Yadete and Kate Pincock draw on research in Ethiopia to explore the gender- and age-specific vulnerabilities of adolescents. The edition ends with an article by Julie Rialet-Cislaghi on how humanitarian responses can better address child marriage.

[Reviewed earlier]

**Human Vaccines & Immunotherapeutics** (formerly Human Vaccines)

Volume 15, Issue 12, 2019 http://www.tandfonline.com/toc/khvi20/current [Reviewed earlier]

#### **Infectious Agents and Cancer**

http://www.infectagentscancer.com/content [Accessed 21 Dec 2019] [No new digest content identified]

#### **Infectious Diseases of Poverty**

http://www.idpjournal.com/content [Accessed 21 Dec 2019] [No new digest content identified]

#### **International Health**

Volume 11, Issue Supplement\_1, November 2019 <a href="https://academic.oup.com/inthealth/issue/11/6">https://academic.oup.com/inthealth/issue/11/6</a> [Reviewed earlier]

#### **International Journal of Community Medicine and Public Health**

Vol 6, No 11 (2019) November 2019 https://www.ijcmph.com/index.php/ijcmph/issue/view/56 [Reviewed earlier]

#### **International Journal of Epidemiology**

Volume 48, Issue 5, October 2019 <a href="https://academic.oup.com/ije/issue/48/5">https://academic.oup.com/ije/issue/48/5</a> [Reviewed earlier]

#### **International Journal of Human Rights in Healthcare**

Volume 12 Issue 5 <a href="https://www.emerald.com/insight/publication/issn/2056-4902/vol/12/iss/5">https://www.emerald.com/insight/publication/issn/2056-4902/vol/12/iss/5</a> [Reviewed earlier]

#### **International Journal of Infectious Diseases**

December 2019 Volume 89, p1-196 <a href="https://www.ijidonline.com/issue/S1201-9712(19)X0018-1">https://www.ijidonline.com/issue/S1201-9712(19)X0018-1</a> [Reviewed earlier]

#### **JAMA**

December 24/31, 2019, Vol 322, No. 24, Pages 2361-2450 <a href="http://jama.jamanetwork.com/issue.aspx">http://jama.jamanetwork.com/issue.aspx</a>
[New issue; No digest content identified]

#### **JAMA Pediatrics**

December 2019, Vol 173, No. 12, Pages 1119-1216 <a href="http://archpedi.jamanetwork.com/issue.aspx">http://archpedi.jamanetwork.com/issue.aspx</a> [Reviewed earlier]

#### **JBI Database of Systematic Review and Implementation Reports**

December 2019 - Volume 17 - Issue 12 <a href="https://journals.lww.com/jbisrir/Pages/currenttoc.aspx">https://journals.lww.com/jbisrir/Pages/currenttoc.aspx</a> [Reviewed earlier]

#### **Journal of Adolescent Health**

December 2019 Volume 65, Issue 6, p709-824 <a href="https://www.jahonline.org/issue/S1054-139X(18)X0014-7">https://www.jahonline.org/issue/S1054-139X(18)X0014-7</a> [Reviewed earlier]

#### **Journal of Community Health**

Volume 44, Issue 6, December 2019 <a href="https://link.springer.com/journal/10900/44/6">https://link.springer.com/journal/10900/44/6</a> [Reviewed earlier]

#### **Journal of Development Economics**

Volume 142, January 2020
<a href="https://www.sciencedirect.com/journal/journal-of-development-economics/vol/142/suppl/C">https://www.sciencedirect.com/journal/journal-of-development-economics/vol/142/suppl/C</a>

\*\*Special Issue on papers from "10th AFD-World Bank Development Conference held at CERDI, Clermont-Ferrand, on June 30 - July 1, 2017"

Edited by Caglar Ozden, David McKenzie, Hillel Rapoport

[New issue; No digest content identified]

#### **Journal of Empirical Research on Human Research Ethics**

Volume 14 Issue 5, December 2019 <a href="http://journals.sagepub.com/toc/jre/current">http://journals.sagepub.com/toc/jre/current</a> **Special Issue: Empirical Studies in Empirical Ethics** [Reviewed earlier]

#### **Journal of Epidemiology & Community Health**

December 2019 - Volume 73 - 12 https://jech.bmj.com/content/73/12

#### [Reviewed earlier]

#### **Journal of Evidence-Based Medicine**

Volume 12, Issue 4 Pages: 233-336 November 2019 <a href="https://onlinelibrary.wiley.com/toc/17565391/current">https://onlinelibrary.wiley.com/toc/17565391/current</a>

[New issue; No digest content identified]

#### **Journal of Global Ethics**

Volume 15, Issue 3, 2019

http://www.tandfonline.com/toc/rjge20/current

Special Issue: Global Justice and Childhood

introduction

**Global justice and childhood: introduction** 

<u>Johannes Drerup</u> & <u>Gottfried Schweiger</u>

Pages: 193-201

Published online: 07 Nov 2019

**ABSTRACT** 

This brief introduction frames a guest-edited collection of eleven contributed articles in the Journal of Global Ethics focused on global justice and childhood. On a general level, there is widespread consensus that there is a strong need for improvement in the lives of children around the globe. What global justice demands in this regard, however, has never been fleshed out in detail and there is only a little philosophical literature on this topic. Against this background, five aspects of the question of global justice for children need to be addressed. First, one has to take into account the debate between cosmopolitanism and particularism, as well as the debate as to whether and to what extent individual, collective or institutional actors should be prioritized. Secondly, a theory of global justice for children must explain how the content of global justice for children is founded and justified, and what it comprises. Third, different principles can be used to assess global justice for children. Only two prominent alternatives are mentioned here: egalitarianism and sufficiency. Fourthly, the temporal dimension of global justice is of particular importance for children. Fifthly, an approach focusing on the examination of injustices is equally necessary.

#### Journal of Health Care for the Poor and Underserved (JHCPU)

Volume 30, Number 4, November 2019, Supplement <a href="https://muse.jhu.edu/issue/41320">https://muse.jhu.edu/issue/41320</a>

**Contents** 

<u>Framework for Ethical Community Engagement (ECE) with Underserved Populations in the Rural South: A Help for Bioethics and Healthcare Promotion</u>

Wylin D. Wilson, Faye Hall Jackson, Joan R. Harrell

pp. 91-104

DOI: 10.1353/hpu.2019.0120

<u>Issues in the Use of Human Tissues to Support Precision Medicine</u>

William E. Grizzle

pp. 66-78

DOI: 10.1353/hpu.2019.0117

#### **Journal of Immigrant and Minority Health**

Volume 21, Issue 6, December 2019 https://link.springer.com/journal/10903/21/6 [Reviewed earlier]

#### **Journal of Immigrant & Refugee Studies**

Volume 18, 2019\_ Issue 1 <a href="https://www.tandfonline.com/toc/wimm20/current">https://www.tandfonline.com/toc/wimm20/current</a> [Reviewed earlier]

#### **Journal of Infectious Diseases**

Volume 220, Issue 6, 15 September 2019 <a href="https://academic.oup.com/jid/issue/220/6">https://academic.oup.com/jid/issue/220/6</a> [Reviewed earlier]

#### **Journal of Medical Ethics**

December 2019 - Volume 45 - 12 <a href="http://jme.bmj.com/content/current">http://jme.bmj.com/content/current</a> [Reviewed earlier]

#### **Journal of Patient-Centered Research and Reviews**

Volume 6, Issue 4 (2019) https://digitalrepository.aurorahealthcare.org/jpcrr/ [Reviewed earlier]

#### **Journal of Pediatrics**

December 2019 Volume 215, p1-292 <a href="http://www.jpeds.com/current">http://www.jpeds.com/current</a> [Reviewed earlier]

#### **Journal of Pharmaceutical Policy and Practice**

https://joppp.biomedcentral.com/ [Accessed 21 Dec 2019] [No new digest content identified]

#### **Journal of Public Health Management & Practice**

November/December 2019 - Volume 25 - Issue 6 <a href="https://journals.lww.com/jphmp/pages/currenttoc.aspx">https://journals.lww.com/jphmp/pages/currenttoc.aspx</a>

#### [Reviewed earlier]

#### **Journal of Public Health Policy**

Volume 40, Issue 4, December 2019 https://link.springer.com/journal/41271/40/4 [Reviewed earlier]

#### Journal of Refugee & Global Health

Volume 2, Issue 2 (2019) https://ir.library.louisville.edu/rgh/ [Reviewed earlier]

#### Journal of the Royal Society - Interface

01 December 2019 Volume 16 Issue 161 <a href="https://royalsocietypublishing.org/toc/rsif/current">https://royalsocietypublishing.org/toc/rsif/current</a> [Reviewed earlier]

#### **Journal of Travel Medicine**

Volume 26, Issue 7, 2019 https://academic.oup.com/jtm/issue/26/7 [Reviewed earlier]

#### **Journal of Virology**

December 2019; Volume 93,Issue 24 <a href="http://jvi.asm.org/content/current">http://jvi.asm.org/content/current</a> [New issue; No digest content identified]

#### The Lancet

Dec 21, 2019 Volume 394 Number 10216 p2201-2284 https://www.thelancet.com/journals/lancet/issue/current Editorial

Health and medicine in 2019: what have we learned?
The Lancet

#### The Lancet Child & Adolescent Health

Dec 2019 Volume 3 Number 12 p835-928, e14-e16 <a href="https://www.thelancet.com/journals/lanchi/issue/current">https://www.thelancet.com/journals/lanchi/issue/current</a> [Reviewed earlier]

#### **Lancet Digital Health**

Dec 2019 Volume 1 Number 8 e375-e434 <a href="https://www.thelancet.com/journals/landig/issue/current">https://www.thelancet.com/journals/landig/issue/current</a> [Reviewed earlier]

### **Lancet Global Health**

Dec 2019 Volume 7 Number 12 e1584-e1735 <a href="http://www.thelancet.com/journals/langlo/issue/current">http://www.thelancet.com/journals/langlo/issue/current</a> [Reviewed earlier]

### **Lancet Infectious Diseases**

Dec 2019 Volume 19 Number 12 p1265-1380, e404-e451 <a href="http://www.thelancet.com/journals/laninf/issue/current">http://www.thelancet.com/journals/laninf/issue/current</a> [Reviewed earlier]

## **Lancet Respiratory Medicine**

Dec 2019 Volume 7 Number 12 p993-1084, e37-e40 <a href="http://www.thelancet.com/journals/lanres/issue/current">http://www.thelancet.com/journals/lanres/issue/current</a> [Reviewed earlier]

### **Maternal and Child Health Journal**

Volume 23, Issue 12, December 2019 https://link.springer.com/journal/10995/23/11 [Reviewed earlier]

## **Medical Decision Making (MDM)**

Volume 39 Issue 8, November 2019 <a href="http://mdm.sagepub.com/content/current">http://mdm.sagepub.com/content/current</a> [Reviewed earlier]

## **The Milbank Quarterly**

A Multidisciplinary Journal of Population Health and Health Policy Volume 97, Issue 4 Pages: 881-1242 December 2019 <a href="https://onlinelibrary.wiley.com/toc/14680009/current">https://onlinelibrary.wiley.com/toc/14680009/current</a> [Reviewed earlier]

### **Nature**

Volume 576 Issue 7787, 19 December 2019
<a href="http://www.nature.com/nature/current">http://www.nature.com/nature/current</a> issue.html

Editorial | 18 December 2019

The scientific events that shaped the decade

The 2010s have seen breakthroughs in frontiers from gene editing to gravitational waves. The coming one must focus on climate change.

Review Article | 18 December 2019

## Why and where an HIV cure is needed and how it might be achieved

Current barriers and limitations to HIV treatments are reviewed, and suggestions for future steps to achieve an effective curative intervention are discussed.

Thumbi Ndung'u, Joseph M. McCune & Steven G. Deeks

## **Nature Biotechnology**

Volume 37 Issue 12, December 2019 <a href="https://www.nature.com/nbt/volumes/37/issues/12">https://www.nature.com/nbt/volumes/37/issues/12</a> [Reviewed earlier]

### **Nature Genetics**

Volume 51 Issue 12, December 2019
<a href="https://www.nature.com/ng/volumes/51/issues/12">https://www.nature.com/ng/volumes/51/issues/12</a>

Mapping the regulatory wiring of the genome
[Reviewed earlier]

### **Nature Medicine**

Volume 25 Issue 12, December 2019 <a href="https://www.nature.com/nm/volumes/25/issues/12">https://www.nature.com/nm/volumes/25/issues/12</a> [Reviewed earlier]

### **Nature Reviews Genetics**

Volume 20 Issue 12, December 2019 https://www.nature.com/nrg/volumes/20/issues/12 [Reviewed earlier]

## **Nature Reviews Immunology**

Volume 19 Issue 12, December 2019 https://www.nature.com/nri/volumes/19/issues/12 [Reviewed earlier]

## **New England Journal of Medicine**

December 19, 2019 Vol. 381 No. 25 <a href="http://www.nejm.org/toc/nejm/medical-journal">http://www.nejm.org/toc/nejm/medical-journal</a> Original Articles

Final Analysis of a Trial of M72/AS01<sub>E</sub> Vaccine to Prevent Tuberculosis

Dereck R. Tait, M.B. et al

Results of an earlier analysis of a trial of the M72/AS01E candidate vaccine against Mycobacterium tuberculosis showed that in infected adults, the vaccine provided 54.0% protection against active pulmonary tuberculosis disease, without evident safety concerns. We now report the results of the 3-year final analysis of efficacy, safety, and immunogenicity...

...Among adults infected with M. tuberculosis, vaccination with M72/AS01E elicited an immune response and provided protection against progression to pulmonary tuberculosis disease for at least 3 years. (Funded by GlaxoSmithKline Biologicals and Aeras; ClinicalTrials.gov number, NCT01755598. opens in new tab.)

### **Pediatrics**

December 01, 2019; Volume 144, Issue 6 <a href="https://pediatrics.aappublications.org/content/144/6?current-issue=y">https://pediatrics.aappublications.org/content/144/6?current-issue=y</a> [Reviewed earlier]

### **Pharmaceutics**

Volume 11, Issue 12 (December 2019) <a href="https://www.mdpi.com/1999-4923/11/12">https://www.mdpi.com/1999-4923/11/12</a> [New issue, No digest content identified]

### **PharmacoEconomics**

Volume 37, Issue 12, December 2019 https://link.springer.com/journal/40273/37/12 [Reviewed earlier]

### **PLoS Genetics**

https://journals.plos.org/plosgenetics/ (Accessed 21 Dec 2019) [No new digest content identified]

### **PLoS Medicine**

http://www.plosmedicine.org/ (Accessed 21 Dec 2019) [No new digest content identified]

## **PLoS Neglected Tropical Diseases**

http://www.plosntds.org/
(Accessed 21 Dec 2019)
[No new digest content identified]

### **PLoS One**

http://www.plosone.org/

[Accessed 21 Dec 2019]

## Towards elimination of measles and rubella in Italy: Progress and challenges

In the WHO European Region, endemic transmission of measles and rubella had been interrupted by 37 and 42 of the 53 member states (MSs), respectively, by 2018. Sixteen MSs are still endemic for measles, 11 for rubella and nine for both diseases, the latter including Italy. Elimination is documented by each country's National Verification Committee (NVC) through an annual status update (ASU).

Giovanna Adamo, Valentina Baccolini, Azzurra Massimi, Domenico Barbato, Rosario Cocchiara, Carolina Di Paolo, Annamaria Mele, Sara Cianfanelli, Aurora Angelozzi, Fulvio Castellani, Carla Salerno, Claudia Isonne, Antonino Bella, Antonietta Filia, Martina del Manso, Melissa Baggieri, Loredana Nicoletti, Fabio Magurano, Stefania Iannazzo, Carolina Marzuillo, Paolo Villari Research Article | published 16 Dec 2019 PLOS ONE https://doi.org/10.1371/journal.pone.0226513

## **PLoS Pathogens**

http://journals.plos.org/plospathogens/ [Accessed 21 Dec 2019] [No new digest content identified]

## PNAS - Proceedings of the National Academy of Sciences of the United States of America

http://www.pnas.org/content/early/ [Accessed 21 Dec 2019] [No new digest content identified]

## **Prehospital & Disaster Medicine**

Volume 34 - Issue 6 - December 2019 <a href="https://www.cambridge.org/core/journals/prehospital-and-disaster-medicine/latest-issue">https://www.cambridge.org/core/journals/prehospital-and-disaster-medicine/latest-issue</a> [Reviewed earlier]

### **Preventive Medicine**

Volume 129 December 2019 <a href="https://www.sciencedirect.com/journal/preventive-medicine/vol/129/suppl/C">https://www.sciencedirect.com/journal/preventive-medicine/vol/129/suppl/C</a> [Reviewed earlier]

## **Proceedings of the Royal Society B**

04 December 2019 Volume 286Issue 1916 <a href="https://royalsocietypublishing.org/toc/rspb/current">https://royalsocietypublishing.org/toc/rspb/current</a> [Reviewed earlier]

### **Public Health**

Volume 177 Pages A1-A4, 1-144 (December 2019)

## https://www.sciencedirect.com/journal/public-health/vol/177/suppl/C [Reviewed earlier]

### **Public Health Ethics**

Volume 12, Issue 3, November 2019 http://phe.oxfordjournals.org/content/current [Reviewed earlier]

## **Public Health Reports**

Volume 134 Issue 6, November/December 2019 <a href="https://journals.sagepub.com/toc/phrg/134/6">https://journals.sagepub.com/toc/phrg/134/6</a> [Reviewed earlier]

## **Qualitative Health Research**

Volume 29 Issue 14, December 2019 <a href="http://qhr.sagepub.com/content/current">http://qhr.sagepub.com/content/current</a> [New issue; No digest content identified]

### **Research Ethics**

Volume 15 Issue 3-4, July-October 2019 <a href="http://journals.sagepub.com/toc/reab/current">http://journals.sagepub.com/toc/reab/current</a> [New issue; No digest content identified]

## **Reproductive Health**

http://www.reproductive-health-journal.com/content [Accessed 21 Dec 2019] [No new digest content identified]

# Revista Panamericana de Salud Pública/Pan American Journal of Public Health (RPSP/PAJPH)

https://www.paho.org/journal/en Latest articles 20 Dec 2019

Operational research in the context of advancing towards tuberculosis elimination in the Americas

Editorial | English |

### **Risk Analysis**

Volume 39, Issue 12 Pages: 2599-2790 December 2019 <a href="https://onlinelibrary.wiley.com/toc/15396924/current">https://onlinelibrary.wiley.com/toc/15396924/current</a> [Reviewed earlier]

## **Risk Management and Healthcare Policy**

https://www.dovepress.com/risk-management-and-healthcare-policy-archive56 [Accessed 21 Dec 2019]

[No new digest content identified]

### Science

20 December 2019 Vol 366, Issue 6472 http://www.sciencemag.org/current.dtl

Special Issue: 2019 Breakthrough of the Year

**Darkness made visible** 

By Daniel Clery

Science20 Dec 2019: 1434-1435 Full Access

An international team of astronomers has produced the first ever image of a black hole.

### **Runners-up**

By Elizabeth Pennisi, Elizabeth Culotta, Kai Kupferschmidt, Adrian Cho, Paul Voosen, Jennifer Couzin-Frankel

Science20 Dec 2019: 1436-1441 Full Access

Summary

The runners up for Science's 2019 Breakthrough of the Year include discoveries in different areas of evolution. The culturing and sequencing of an elusive microbe sheds light on the early evolution of life on Earth; the discovery that a fossilized jaw belongs to a group of ancient humans called Denisovans and the reconstruction of the face of a Denisovan girl from genetic data bring these mysterious people into focus; several studies documented the devastation and subsequent recovery of life around the planet following the asteroid impact that wiped out the big dinosaurs; and a close-up look at an object in the outer Solar System supports a new notion of planetary formation and evolution. Other advances named by Science are the attainment of a milestone in quantum computing called quantum supremacy, the approval of a drug that combats most cases of cystic fibrosis, research on gut microbes that has led to the development of supplements to treat severe childhood malnutrition, the testing of two drugs that dramatically increase Ebola patients' chances of survival, and the development of an artificial intelligence program that beat some of the world's best poker experts in games involving multiple players.

### **Breakdowns of the year**

By Erik Stokstad, Meredith Wadman, Elizabeth Pennisi, David Malakoff

Science20 Dec 2019: 1442-1443 Full Access

What went wrong in the world of science in 2019.

Policy Forum

### Biotechnologies nibbling at the legal "human"

By Bartha Maria Knoppers, Henry T. Greely Science20 Dec 2019: 1455-1457 Full Access

Recent advances in the biosciences invite reconsideration of fundamental legal concepts such as the definition of "human"

## Summary

The law has always viewed living human beings—and the tissues, organs, and other body parts derived from them—as special and different from the nonliving, nonhuman. But bioscientific advances are nibbling away at classical legal boundaries that form the bedrock of the normative structures on which societies are based. Recent developments such as in human genetics, neuroscience, and cell and tissue research pose qualitatively different challenges than what has come before, seeming to blur legal distinctions between human beings and other living organisms, between living human beings and dead ones, and between human tissues and cells and nonhuman ones. Although cognizant of the important bioethical and philosophical debates surrounding the issues raised, we focus on how legal systems may respond to these bioscience challenges to traditional binary, legal classifications. Determining whether some "thing" is now some "one" carries with it profound implications for the rights and obligations the law recognizes for "humans." Although it may be tempting to think that these new developments require us to reconsider the time-honored legal definitions of humans, living humans, or human tissue, we suggest that current legal dualisms can be applied in ways that provide adequate flexibility to allow weighing the many issues that surround developments in genetics, neurosciences, and cellular bioengineering and challenge how we legally define what is "human."

### **Science Translational Medicine**

18 December 2019 Vol 11, Issue 523 <a href="https://stm.sciencemag.org/">https://stm.sciencemag.org/</a>
<a href="Research Articles">Research Articles</a>

# <u>Biocompatible near-infrared quantum dots delivered to the skin by microneedle patches record vaccination</u>

By Kevin J. McHugh, Lihong Jing, Sean Y. Severt, Mache Cruz, Morteza Sarmadi, Hapuarachchige Surangi N. Jayawardena, Collin F. Perkinson, Fridrik Larusson, Sviatlana Rose, Stephanie Tomasic, Tyler Graf, Stephany Y. Tzeng, James L. Sugarman, Daniel Vlasic, Matthew Peters, Nels Peterson, Lowell Wood, Wen Tang, Jihyeon Yeom, Joe Collins, Philip A. Welkhoff, Ari Karchin, Megan Tse, Mingyuan Gao, Moungi G. Bawendi, Robert Langer, Ana Jaklenec Science Translational Medicine18 Dec 2019 Full Access

### On the record

Vaccines prevent disease and save lives; however, lack of standardized immunization recordkeeping makes it challenging to track vaccine coverage across the world. McHugh et al. developed dissolvable microneedles that deliver patterns of near-infrared light-emitting microparticles to the skin. Particle patterns are invisible to the eye but can be imaged using modified smartphones. By codelivering a vaccine, the pattern of particles in the skin could serve as an on-person vaccination record. Patterns were detected 9 months after intradermal delivery of microparticles in rats, and codelivery of inactivated poliovirus led to protective antibody production. Discrete microneedle-delivered microparticle patterns in porcine and pigmented human skin were identifiable using semiautomated machine learning. These results demonstrate proof of concept for intradermal on-person vaccination recordkeeping. *Abstract* 

Accurate medical recordkeeping is a major challenge in many low-resource settings where well-maintained centralized databases do not exist, contributing to 1.5 million vaccine-preventable deaths annually. Here, we present an approach to encode medical history on a patient using the spatial distribution of biocompatible, near-infrared quantum dots (NIR QDs) in the dermis.

QDs are invisible to the naked eye yet detectable when exposed to NIR light. QDs with a copper indium selenide core and aluminum-doped zinc sulfide shell were tuned to emit in the NIR spectrum by controlling stoichiometry and shelling time. The formulation showing the greatest resistance to photobleaching after simulated sunlight exposure (5-year equivalence) through pigmented human skin was encapsulated in microparticles for use in vivo. In parallel, microneedle geometry was optimized in silico and validated ex vivo using porcine and synthetic human skin. QD-containing microparticles were then embedded in dissolvable microneedles and administered to rats with or without a vaccine. Longitudinal in vivo imaging using a smartphone adapted to detect NIR light demonstrated that microneedle-delivered QD patterns remained bright and could be accurately identified using a machine learning algorithm 9 months after application. In addition, codelivery with inactivated poliovirus vaccine produced neutralizing antibody titers above the threshold considered protective. These findings suggest that intradermal QDs can be used to reliably encode information and can be delivered with a vaccine, which may be particularly valuable in the developing world and open up new avenues for decentralized data storage and biosensing.

## <u>DNA vaccination before conception protects Zika virus—exposed pregnant macaques against prolonged viremia and improves fetal outcomes</u>

By Koen K. A. Van Rompay, Rebekah I. Keesler, Amir Ardeshir, Jennifer Watanabe, Jodie Usachenko, Anil Singapuri, Christina Cruzen, Eliza Bliss-Moreau, Ashley M. Murphy, JoAnn L. Yee, Helen Webster, Maria Dennis, Tulika Singh, Holly Heimsath, Danilo Lemos, Jackson Stuart, Kaitlyn M. Morabito, Bryant M. Foreman, Katherine E. Burgomaster, Amy T. Noe, Kimberly A. Dowd, Erin Ball, Kevin Woolard, Pietro Presicce, Suhas G. Kallapur, Sallie R. Permar, Kathryn E. Foulds, Lark L. Coffey, Theodore C. Pierson, Barney S. Graham Science Translational Medicine 18 Dec 2019 Restricted Access

Curbing congenital Zika virus infection

The impact on a developing fetus is one of the most pressing concerns for developing vaccines or treatments for Zika virus. To assess fetal protection, Van Rompay et al. immunized nonhuman primates with a DNA vaccine before conception and then performed multiple Zika virus challenges in the first few months of pregnancy. Compared to unvaccinated controls, vaccinated animals had reduced viremia in terms of both magnitude and duration. Early fetal loss and fetal pathology was accordingly reduced. These results show that Zika virus vaccines given to women of childbearing age may help prevent damaging sequelae in offspring. Abstract

Zika virus (ZIKV) infection of pregnant women is associated with congenital Zika syndrome (CZS) and no vaccine is available, although several are being tested in clinical trials. We tested the efficacy of ZIKV DNA vaccine VRC5283 in a rhesus macaque model of congenital ZIKV infection. Most animal vaccine experiments have a set pathogen exposure several weeks or months after vaccination. In the real world, people encounter pathogens years or decades after vaccination, or may be repeatedly exposed if the virus is endemic. To more accurately mimic how this vaccine would be used, we immunized macaques before conception and then exposed them repeatedly to ZIKV during early and mid-gestation. In comparison to unimmunized animals, vaccinated animals had a significant reduction in peak magnitude and duration of maternal viremia, early fetal loss, fetal infection, and placental and fetal brain pathology. Vaccine-induced neutralizing antibody titers on the day of first ZIKV exposure were negatively associated with the magnitude of maternal viremia, and the absence of prolonged viremia was associated with better fetal outcomes. These data support further clinical development of ZIKV vaccine strategies to protect against negative fetal outcomes.

### **Social Science & Medicine**

Volume 242 December 2019

https://www.sciencedirect.com/journal/social-science-and-medicine/vol/242/suppl/C [Reviewed earlier]

## **Systematic Reviews**

https://systematicreviewsjournal.biomedcentral.com/articles [Accessed 21 Dec 2019] [No new digest content identified]

## **Travel Medicine and Infectious Diseases**

Volume 32 November–December 2019 <a href="https://www.sciencedirect.com/journal/travel-medicine-and-infectious-disease/vol/32/suppl/C">https://www.sciencedirect.com/journal/travel-medicine-and-infectious-disease/vol/32/suppl/C</a> [Reviewed earlier]

## **Tropical Medicine & International Health**

Volume 24, Issue 12 Pages: i-iv, 1341-1475 December 2019 <a href="https://onlinelibrary.wiley.com/toc/13653156/current">https://onlinelibrary.wiley.com/toc/13653156/current</a> [Reviewed earlier]

### Vaccine

Volume 38, Issue 1 Pages 1-100 (3 January 2020) https://www.sciencedirect.com/journal/vaccine/vol/38/issue/1 [Reviewed earlier]

### Vaccines — Open Access Journal

http://www.mdpi.com/journal/vaccines

(Accessed 21 Dec 2019)

Open Access Review

### Addressing Vaccine Hesitancy in China: A Scoping Review of Chinese Scholarship

by Ronghui Yang , Bart Penders and Klasien Horstman

Vaccines 2020, 8(1), 2; <a href="https://doi.org/10.3390/vaccines8010002">https://doi.org/10.3390/vaccines8010002</a> - 20 Dec 2019

\*\*Abstract\*\*

Despite the well-developed Chinese National Immunization Program, vaccine hesitancy in China is rising. As part of the response, Chinese scholars have studied determinants and proposed solutions to vaccination hesitancy. We performed a scoping review of Chinese literature (2007–2019), drawn from four Chinese databases. We mapped relevant information and presented a systemic account of the proposed determinants and responses to vaccine hesitancy in China. We identified 77 relevant studies that reveal four approaches to vaccine hesitancy. Most Chinese studies define vaccine hesitancy as a problem of vaccine safety and vaccine incident response and place accountability on the level of governance, such as regulation deficits and

inappropriate crisis management. A first minority of studies tied vaccination hesitancy to unprofessional medical conduct and called for additional resources and enhanced physician qualifications. A second minority of studies positioned vaccination hesitancy as a problem of parental belief and pointed to the role of media, proposing enhanced communication and education. Chinese literature ties vaccine hesitancy primarily to vaccine safety and medical conduct. Compared to international research, parental concerns are underrepresented. The Chinese context of vaccination scandals notably frames the discussion of vaccination hesitancy and potential solutions, which stresses the importance of considering vaccination hesitancy in specific social and political contexts.

### Value in Health

December 2019 Volume 22, Issue 12, p1345-1470 <a href="https://www.valueinhealthjournal.com/issue/S1098-3015(19)X0012-1">https://www.valueinhealthjournal.com/issue/S1098-3015(19)X0012-1</a> [Reviewed earlier]

### **Viruses**

Volume 11, Issue 11 (November 2019) <a href="https://www.mdpi.com/1999-4915/11/11">https://www.mdpi.com/1999-4915/11/11</a> [Reviewed earlier]

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# <u>From Google Scholar & other sources: Selected Journal Articles, Newsletters, Dissertations, Theses, Commentary</u>

No new digest content identified.

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## Media/Policy Watch

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

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

### The Atlantic

http://www.theatlantic.com/magazine/ Accessed 21 Dec 2019 [No new, unique, relevant content]

### **BBC**

http://www.bbc.co.uk/ Accessed 21 Dec 2019 20 Dec 2019

## African swine fever: Fears rise as virus spreads to Indonesia

Indonesia has become the latest Asian country to face an outbreak of African swine fever, a deadly pig virus devastating farmers across the region.

On Wednesday, the country's agriculture ministry said nearly 30,000 pigs have died from the disease in North Sumatra.

The virus is expected to wipe out more than half of China's pig herd this year.

Australia has grown increasingly concerned, stepping up biosecurity measures to keep swine fever out.

Although it's harmless to humans, the disease can kill pigs within a few days, and the fatality rate can be up to 100%, according to the World Organisation for Animal Health (OIE)....

The race for a vaccine

As long as animals were sick only in Africa and occasional outbreaks in Europe were successfully tackled by culling, there was little effort to develop a vaccine.

Since the outbreak has spread to Asia with millions of animals affected, scientists are racing to find one. But the virus is unusually complex...

### The Economist

http://www.economist.com/ Accessed 21 Dec 2019 [No new, unique, relevant content]

### **Financial Times**

http://www.ft.com/home/uk
[No new, unique, relevant content]

### **Forbes**

http://www.forbes.com/ Accessed 21 Dec 2019 [No new, unique, relevant content]

### **Foreign Affairs**

http://www.foreignaffairs.com/ Accessed 21 Dec 2019 [No new, unique, relevant content]

## **Foreign Policy**

http://foreignpolicy.com/ Accessed 21 Dec 2019 [No new, unique, relevant content]

### The Guardian

http://www.guardiannews.com/ Accessed 21 Dec 2019 [No new, unique, relevant content]

#### **New Yorker**

http://www.newyorker.com/ Accessed 21 Dec 2019 [No new, unique, relevant content]

### **New York Times**

http://www.nytimes.com/ Accessed 21 Dec 2019 Dec. 20

Africa

## Merck Says Ebola Vaccine to Be Available at Lowest Access Price for Poor Nations

Merck & Co said on Friday it expects to make licensed doses of its recently approved Ebola vaccine available in the third quarter of 2020 and price the single-dose injection at the lowest possible access price for poor and middle-income countries. By Reuters

Dec. 18 Asia Pacific

## **Gunmen in Pakistan Kill Two Police Escorting Polio Vaccinators**

Gunmen shot and killed two police officers escorting a polio vaccination team on Wednesday forcing a suspension of the immunization campaign in a district of northwest Pakistan, where the crippling disease is endemic.

By Reuters

Dec. 17 *Health* 

### Dr. John Robbins, Developer of a Meningitis Vaccine, Dies at 86

His method of boosting immune protection in babies helped save seven million lives. But he never profited from it.

By Donald G. McNeil Jr.

Dec. 16 New York

### Strict Vaccine Law Stumbles in N.J. Legislature

There were not enough votes in the State Senate to end religious exemptions to vaccine requirements for all students.

By Sharon Otterman and Tracey Tully

### **Washington Post**

https://www.washingtonpost.com/ Accessed 21 Dec 2019

# A major funder of the anti-vaccine movement has made millions selling natural health products

Neena Satija and Lena H. Sun · Dec 20, 2019

## John Robbins, pioneer of a meningitis vaccine, dies at 86

Emily Langer Dec 19, 2019

\* \* \* \*

## Think Tanks et al

## **Brookings**

http://www.brookings.edu/ Accessed 21 Dec 2019 [No new relevant content]

## **Center for Global Development**

http://www.cgdev.org/page/press-center Accessed 21 Dec 2019 [No new relevant content]

#### **CSIS**

https://www.csis.org/ Accessed 21 Dec 2019 Report

## **Ensuring Healthy Populations through a New Era of Global Immunization**

December 20, 2019 | By Nellie Bristol

### **Council on Foreign Relations**

http://www.cfr.org/ Accessed 21 Dec 2019 [No new relevant content]

## **Kaiser Family Foundation**

https://www.kff.org/search/?post\_type=pre\_ss-release

December 19, 2019 Issue Brief

## The Current Ebola Outbreak and the U.S. Role: An Explainer

An outbreak of Ebola is currently ongoing in the Democratic Republic of Congo (DRC), now the second largest Ebola epidemic ever recorded. This Issue Brief gives an overview of the current situation, explains the U.S. role in responding to the outbreak, and answers key questions about the broader global response.

**Vaccines and Global Health: The Week in Review** is a service of the Center for Vaccine Ethics and Policy (<u>CVEP</u>)/GE2P2 Global, which is solely responsible for its content, and is an open access publication, subject to the terms of the Creative Commons Attribution License (<u>http://creativecommons.org/licenses/by-nc/3.0/</u>). Copyright is retained by CVEP.

CVEP is a program of the <u>GE2P2 Global Foundation</u> – whose purpose and mission is to advance ethical and scientific rigor in research and evidence generation for governance, policy and practice in health, human rights action, humanitarian response, heritage stewardship, education and sustainable development. The Foundation serves governments, international agencies, INGOs, civil society organizations (CSOs), commercial entities, consortia and alliances. CVEP maintains an academic affiliation with the Division of Medical Ethics, NYU School of Medicine, and an operating affiliation with the Vaccine Education Center of Children's Hospital of Philadelphia [CHOP].

Support for this service is provided by the <u>Bill & Melinda Gates Foundation</u>; <u>PATH</u>, and industry resource members Janssen/J&J, Pfizer, Sanofi Pasteur U.S., Takeda, Moderna Therapeutics (list in formation).

Support is also provided by a growing list of individuals who use this membership service to support their roles in public health, clinical practice, government, NGOs and other international institutions, academia and research organizations, and industry.