



Infectious Disease Update for the HPH Sector – May 2019

Domestic Health Security

[More states confront environmental threats to public health](#) (CIDRAP) From California's wildfires to emerging measles outbreaks in New York and New Jersey, the United States saw economic damages exceeding \$91 billion for health security events in 2018.

[Measles case count in the U.S. tops 700 this year, as health officials urge vaccinations](#) (STAT) As of April 26, there have been 704 cases of measles reported to the CDC, from 22 states.

[Measles resurgence in the USA: how international travel compounds vaccine resistance](#) (Lancet Infectious Diseases) ... only 4 months into 2019 the number of cases reported is already the highest since measles was declared officially eliminated in the US in 2000. These high numbers show that the USA still remains at risk for large measles epidemics such as those recently seen in Europe. Two main factors are believed to contribute to the resurgence of measles cases in the USA: reintroduction of the virus at individual localities through travel from countries experiencing outbreaks⁴ and low vaccination rates fueled by non-medical exemptions (NMEs). The analysis we present confirms the hypothesis that these two factors are the most salient ones for the outbreaks of measles in the USA in 2019.

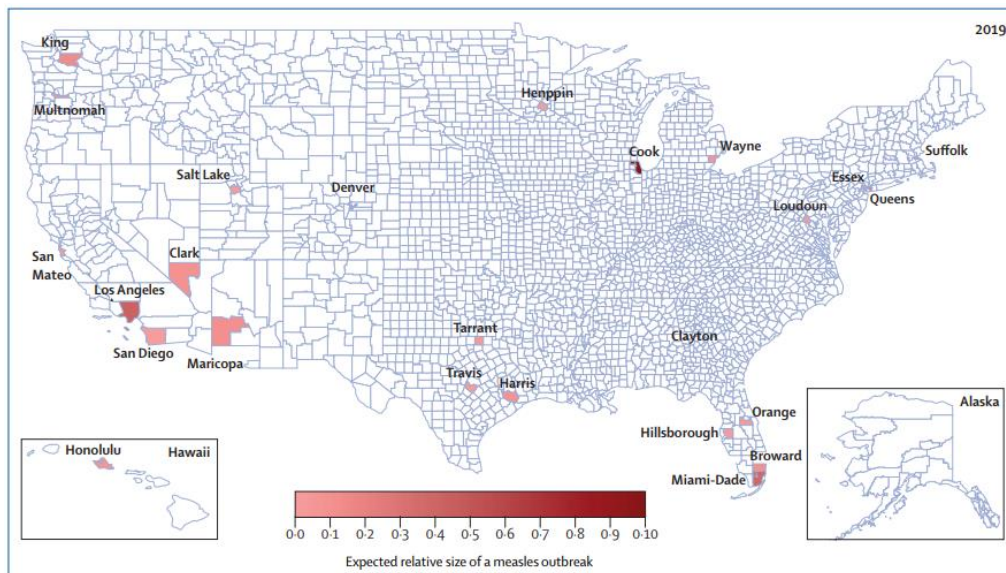


Figure: Top 25 US counties predicted to be at the highest risk of measles in 2019

Results from the analysis use air travel data from 2017, which was the most recently available for this analysis, and international measles outbreak data from 2019. Risk is measured by the expected relative size of a measles outbreak.



Global Health Security

[Stopping the Gaps in Epidemic Preparedness](#) (New England Journal of Medicine) Several life-threatening viruses have been identified for the first time in the 21st century, including the severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS) coronaviruses.

[Struggling with Scale: Ebola's Lessons for the Next Pandemic](#) (Center for Global Development)

The next global pandemic is a matter of when, not if. Preparing for this inevitability requires that policy-makers understand not just the science of limiting disease transmission or engineering a drug, but also the practical challenges of expanding a response strategy to a regional or global level. Achieving success at such scales is largely an issue of operational, strategic, and policy choices—areas of pandemic preparedness that remain underexplored.

Ebola – Democratic Republic of Congo

[‘On a knife edge’: Ebola outbreak threatens to escalate as violence rises](#) (STAT) The Ebola outbreak in the Democratic Republic of the Congo is threatening to spiral out of control, with ongoing violence aimed at the Ebola response workers undermining efforts to stop spread of the deadly virus.

See also: [Urgent steps are needed to prevent Ebola from spinning out of control in the DRC](#) (STAT)

[With rising cases and dwindling stockpiles, WHO suggests alternative Ebola vaccination strategies](#) (CIDRAP) Today SAGE, the World Health Organization's Strategic Advisory Group of Experts, released new guidelines to address several growing concerns about vaccination strategies currently being used in Democratic Republic of the Congo (DRC) Ebola outbreak.

[Pakistan had all but eliminated polio. Then things went badly wrong.](#) (Washington Post) Nobody saw it coming. The virus was so close to being wiped out. Millions of young children had been repeatedly inoculated, and in March older ones were added in a final nationwide vaccine push to ensure that Pakistan — one of only three countries where polio remains endemic — could be officially declared polio-free.

Clinical Practice

[Measles Outbreak Toolkit for Healthcare Providers](#) (CDC) A useful compilation of resources for providers, including guidance on how to best communicate the value of vaccination to hesitant parents.

[Hospitals look to computers to predict patient emergencies before they happen](#) (STAT) Hospital command centers have proliferated across the country in recent years, with medical centers from Oregon to Florida deploying them to tackle a range of data-monitoring tasks, such as



maximizing bed capacity, calibrating staffing levels, and detecting the onset of sepsis, a life-threatening response to infection that is a common killer in hospitals.

Science & Technology

[What the future may hold for the Strategic National Stockpile for Biodefense](#) (Bulletin of the Atomic Scientists) So what, exactly, is the Strategic National Stockpile for Biodefense? What are some of the possibilities for the stockpile's future, and how might they affect the way these supplies are delivered to the site of a biological attack and used in the future? And how could they deal with engineered or antibiotic-resistant variants of known biothreat agents?

[The Antibiotics Business is Broken – But There's a Fix](#) (Wired) The world is running out of useful antibiotics because the rise of antibiotic resistance in bacteria is undermining them, and big firms are disinclined to make more. In 2018 alone, three large legacy pharma firms closed their antibiotic research programs. So the collapse of even a small business that stepped up to make a new antibiotic is a blow.

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About the [Johns Hopkins Center for Health Security](#):

The Johns Hopkins Center for Health Security works to protect people from epidemics and disasters and build resilient communities through innovative scholarship, engagement, and research that strengthens the organizations, systems, policies, and programs essential to preventing and responding to public health crises. The Center is part of the Johns Hopkins Bloomberg School of Public Health and is located in Baltimore, MD.

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