Center for Infectious Disease Research and Policy
University of Minnesota

CIDRAP Leadership Forum
Infectious Disease BRIEFING

June 21st, 2017

HOT TOPICS

1. Avian Influenza
2. MERS-CoV
3. Zika

UPDATES

4. Yellow fever
5. Polio
6. Ebola
7. Tickborne diseases
   - Powassan virus, meat allergy, Lyme disease, climate change
8. Antimicrobial resistance
9. *Legionella* cases
10. Current administration appointments
11. Other

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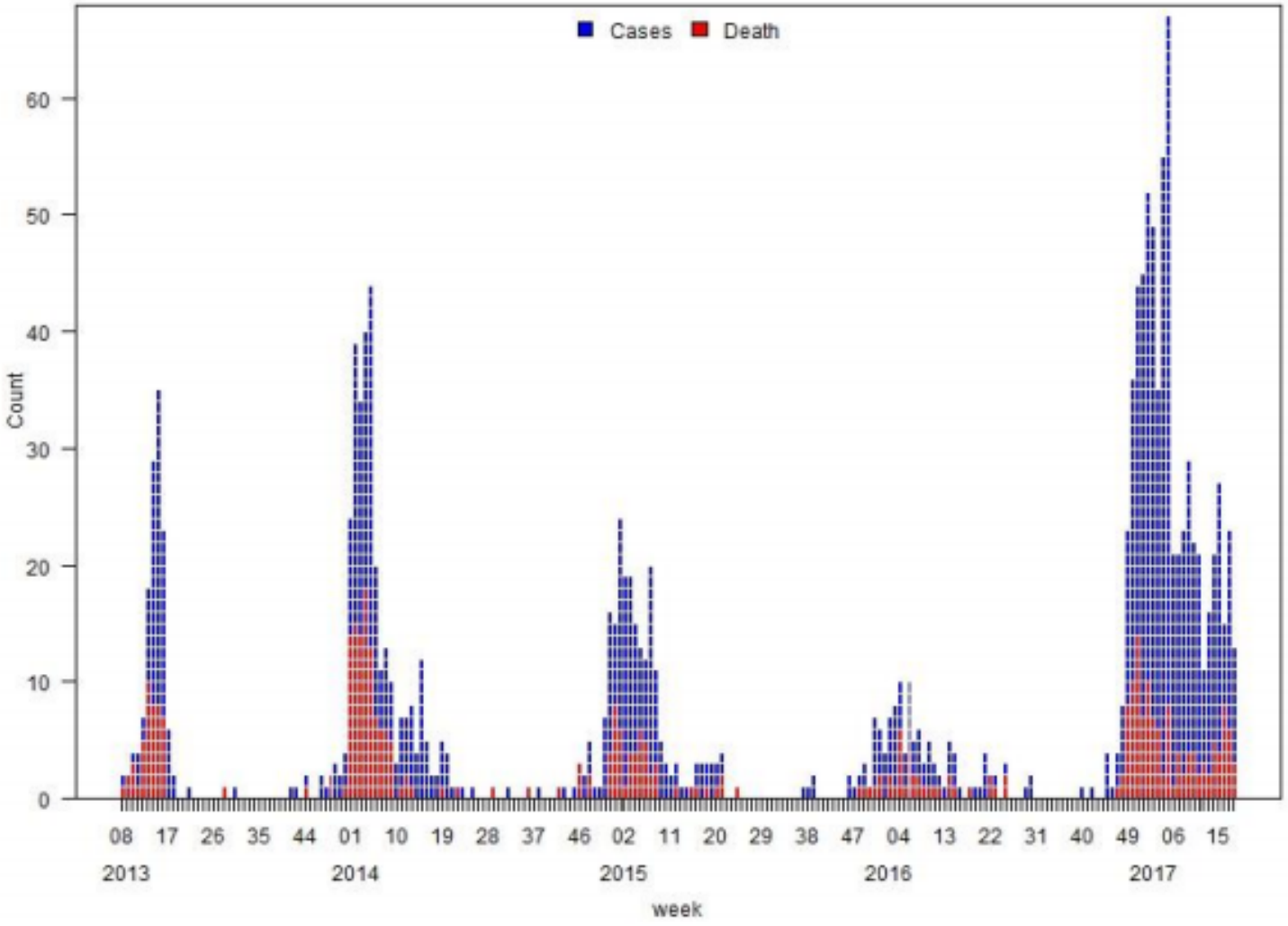
World Health Organization

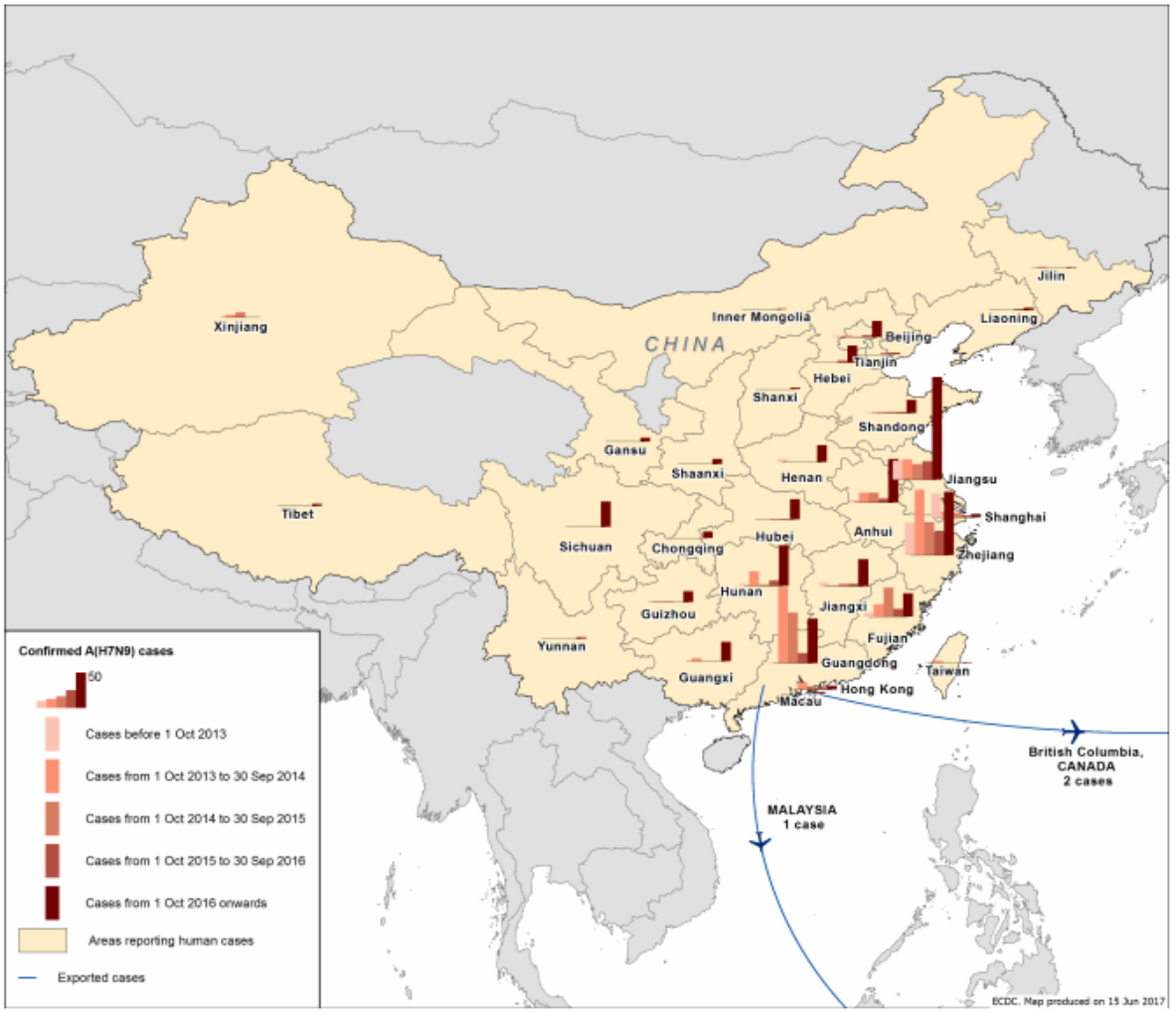
Figure 2: Epidemiological curve of avian influenza A(H7N9) cases in humans by week of onset, 2013-2017



European Centre for Disease Prevention and Control

Distribution of confirmed cases of A(H7N9) by five seasons, February 2013 to 15 June 2017

ECDC



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Increase reported in H7N9 avian flu cases in China

Filed Under: H7N9 Avian Influenza

Stephanie Soucheray | News Reporter | CIDRAP News | Jun 09, 2017

mswine / Flickr cc

In its weekly report, Hong Kong's Centre for Health Protection (CHP) today confirmed 12 H7N9 avian flu cases reported from China's mainland from Jun 2 through Jun 8. The previous 2 weeks saw 8 and 9 cases reported, respectively, so the update reflects a small uptick.

Nine of the 12 cases had known exposure to poultry, and one patient was listed as a 4-year-old. That case is notable because H7N9 infections in children are uncommon. Eight men and four women contracted the virus, and their ages range from 4 to 68 years. The patients reported symptom onset from May 20 to Jun 3.

Three of the cases are from Beijing, and officials said they were likely imported from other provinces. A new case from Shaanxi province was likely imported from Inner Mongolia province, the second case such case in Shaanxi in the last 2 weeks.

There were two cases each reported in Anhui, Chongqing and Henan, and one each from Jiangsu and Shandong.

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China reports more high-path H7N9 outbreaks in poultry

Filed Under: Avian Influenza (Bird Flu)

Lisa Schnirring | News Editor | CIDRAP News | Jun 14, 2017

In the latest avian flu developments, China reports more highly pathogenic H7N9 outbreaks in three provinces, and South Korea continues to battle a flare-up of H5N8 activity, according to the latest notifications from the World Organization for Animal Health (OIE).

H7N9 outbreaks continue in China

Chinese health officials detailed four outbreaks in two OIE reports. Two occurred in different locations in Inner Mongolia province in the north, one at a large layer farm that began on May 21, killing 35,526 of 406,756 susceptible poultry. The remaining birds were culled to curb the spread of the virus.

The other outbreak began Jun 5 at a poultry farm in Inner Mongolia's Jiuyuan district, which led to the loss of 55,023 birds, including 2,056 that died from the disease.

REUTERS

HEALTH NEWS | Fri Jun 16, 2017 | 6:39am EDT

China to vaccinate poultry against H7N9 bird flu next month

By **Dominique Patton** | BEIJING

China has decided to vaccinate poultry from next month against the H7N9 bird flu virus, after it claimed hundreds of lives last winter and caused major damage to the industry.

The vaccination program will kick off in Guangdong and Guangxi in southern China in early July, said a notice from the agriculture ministry posted on the official WeChat account of the Chinese Veterinary Medical Association this week.

It targets all species including broiler chickens, ducks, geese and egg-laying hens.

Farms in other provinces will be allowed to opt for vaccination if approved by local veterinary authorities, it added, and emergency vaccination may be used to tackle outbreaks.

"In the near-term, it's a good thing, it's definitely a control measure," said Li Jinghui, managing director, China Poultry Association.

H7N9 first emerged in China in 2013 but human cases spiked up last winter, claiming at least 268 lives since October, and mostly during the first few months of this year.

While the virus initially had little impact on birds, the high number of human cases led authorities to shut down live poultry markets around the country, hitting demand for eggs and the native yellow-feather chickens, commonly sold in such marketplaces.

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Analysis of H7N9 in China finds age, geographic shifts

Filed Under: H7N9 Avian Influenza; Avian Influenza (Bird Flu)
Lisa Schnirring | News Editor | CIDRAP News | Jun 05, 2017

A detailed epidemiologic analysis of illnesses in China's fifth and biggest wave of H7N9 avian influenza activity, still under way, found a few shifts in the epidemiologic pattern, with middle-age adults more likely to be infected and the reach of the disease extending from urban to more rural areas.

estivillml / iStock

So far, reassuringly, the disease in humans doesn't seem more severe than the earlier four waves. A research team based in China published its findings in the Jun 2 early online edition of *The Lancet Infectious Diseases*.

More middle-aged, rural adults affected

The group's review includes 1,220 lab-confirmed cases reported since February 2013 when the first H7N9 infections were detected in humans. For the fifth wave, they include 447 cases reported in mainland China as of Feb 23. Since then, the country has reported many more cases, with a number of northern provinces affected, some of which have reported their first human illnesses.

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Flu Scan for Jun 15, 2017

Study identifies H7N9 mutations that could ease spread among humans

Researchers looking for mutations that might make H7N9 avian influenza more easily transmissible among people identified three amino acid changes that would make the virus more likely to bind to human airway receptors. A team of researchers from the United States, including those from The Scripps Research Institute, and the Netherlands reported its findings today in *PLoS Pathogens*.

The scientists focused on mutations that could occur in the H7 hemagglutinin (HA) protein, which allows the virus to latch onto host cells. They didn't test the mutations in H7N9 viruses, because of gain-of-function rules and concerns. Rather, they used molecular modeling and knowledge of the HA structure to flag mutations that have the capacity to make the virus more specific to human, rather than avian, airway receptors. Then they produced an HA with different combinations of the mutations in an experimental cell line (not H7N9) and tested how strongly they bound to human and avian receptors.

The team found that mutations in three amino acids bound more strongly to human receptors, signaling a specificity switch from bird to human types. In another experiment, they found that the H7 mutants also attached to cells from human tracheal tissue.

The researchers concluded that understanding the mutations that might allow the virus to spread more easily in humans is a useful tool for surveillance in poultry and humans, as their identification may serve as an early warning.

Jun 15 *PLoS Pathog* study

New Scientist

20 June 2017

A bird flu pandemic looms but the US is holding back the fight

By Debora MacKenzie

BIRD flu is back. The H7N9 virus has had its deadliest year since it emerged in 2013. Since October, 714 people in China have become seriously ill, almost as many as in the previous four years combined.

More than a third of those people have died. The virus is thought to be causing milder, undiagnosed disease in far more people, and each infection is a chance for it to evolve.

The idea that H7N9 could gain the ability to spread readily via humans keeps virologists up at night. But restrictions on research into potentially pandemic viruses, put in place after concerns about another bird flu, are making it harder to study today's threat. Isn't it time we conquered our fears of what might happen so we can avoid a real pandemic?

. So far H7N9 has spread only in poultry across part of China, and to people who have caught it directly from birds – except for a few recent cases of limited human-to-human spread within families.

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H5N8 strikes again in South Korea, Europe

Filed Under: Avian Influenza (Bird Flu)
Lisa Schnirring | News Editor | CIDRAP News | Jun 05, 2017

Though highly pathogenic H5N8 avian flu outbreaks in most parts of the world continue to decline overall, activity continues to smolder, with another outbreak reported in South Korean poultry and two European countries—Belgium and the United Kingdom—reporting new detections.

Orin Zebest / Flickr cc

Tracking bird shipments in Korea

South Korea's outbreak occurred in backyard birds on the island of Jeju in the south, Reuters reported today, citing the country's agriculture ministry. Over the winter South Korea's poultry sector was hit hard by H5N8 and H5N6 outbreaks, and the new event is the first since April.

According to agriculture ministry statements over the past few days translated and posted by Avian Flu Diary (AFD), an infectious disease news message board, the birds had been bought from a farm in Gunsan in North Jeolla province. A statement from Jun 3 also said birds in Busan, South Korea's second-largest city, tested positive for an H5 virus after a farmer received poultry from the Gunsan location.

REUTERS

HEALTH NEWS | Tue Jun 6, 2017 | 10:19pm EDT

South Korea to cull nearly 190,000 farm bids to contain bird flu

South Korea's agriculture ministry said on Wednesday it has ordered a cull of 186,100 farm birds to prevent the spread of bird flu after more cases of the highly pathogenic H5N8 bird flu were confirmed.

The order comes after the government raised the country's bird flu alert level to the highest level on Monday when the first bird flu case found since early April was confirmed as the H5N8 strain.

As of Wednesday, a total of five cases of highly pathogenic avian flu had been confirmed in the country's four regions, the agriculture ministry said in a statement.

The additional cull will take the total number of birds killed since the latest outbreak began in November last year to 38 million, said an agriculture ministry spokesman Lee Ju-myeung, equal to more than a fifth of Korea's total poultry population.

However, Lee said a further mass culling was unlikely as the new cases of bird flu had been found mostly on small farms.

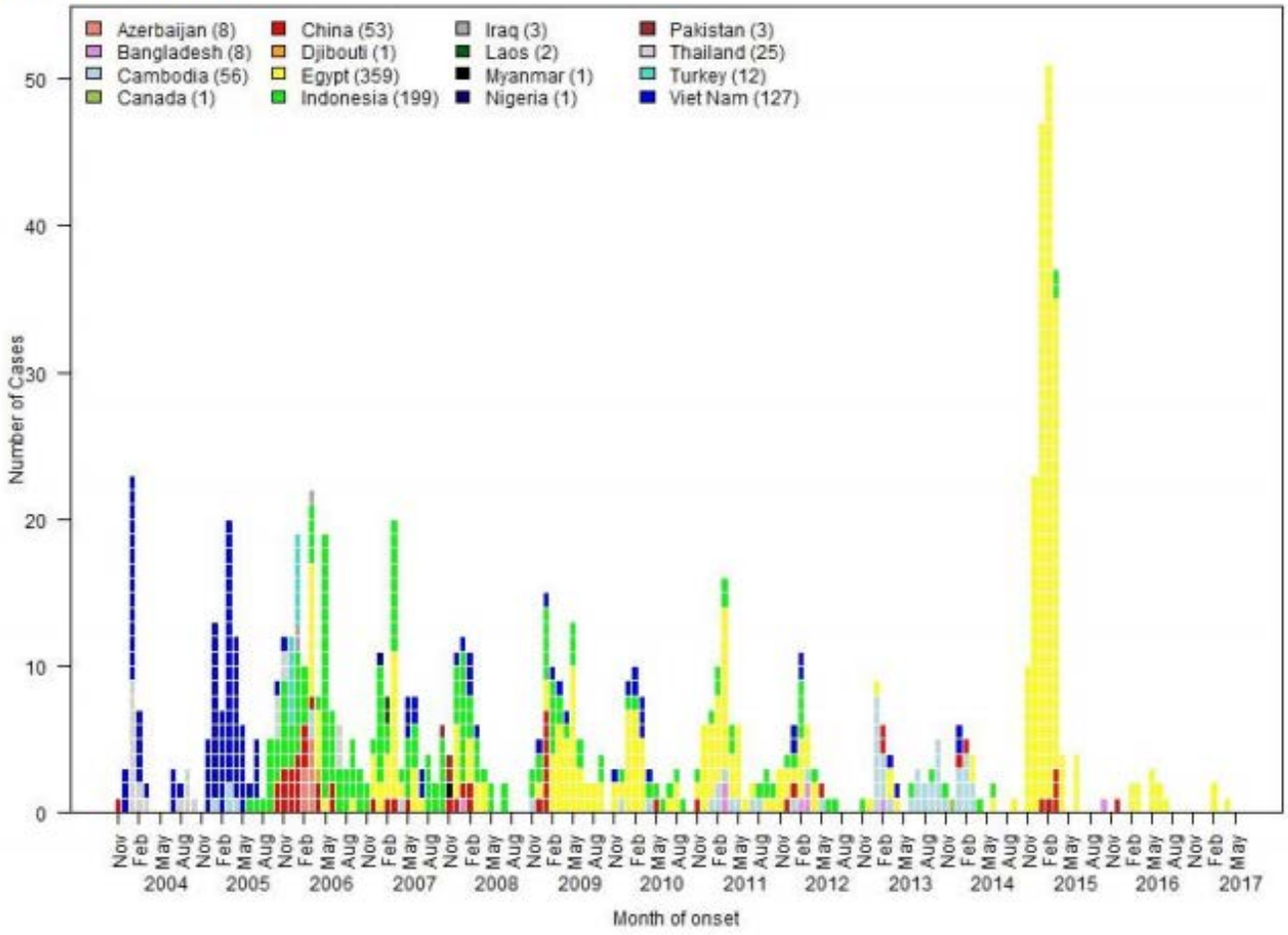
"The virus typically does not spread fast in summer, so it seems we can contain the spread of the virus at an early stage by disinfecting farms," he said.

The ministry has also ramped up preventive measures, including a temporary nationwide ban of poultry transportation, which took effective from 1500 GMT on Tuesday for 24 hours.

(Reporting By Jane Chung; Editing by Richard Pullin)

World Health Organization

Figure 1: Epidemiological curve of lab-confirmed avian influenza A(H5N1) cases in humans by month of onset, 2003-2017



ORIGINAL ARTICLE

Efficacy of Recombinant Influenza Vaccine in Adults 50 Years of Age or Older

Lisa M. Dunkle, M.D., Ruvim Izikson, M.D., M.P.H., Peter Patriarca, M.D., Karen L. Goldenthal, M.D., Derek Muse, M.D., Janice Callahan, Ph.D., and Manon M.J. Cox, Ph.D., for the PSC12 Study Team*

ABSTRACT

BACKGROUND

Improved influenza vaccines are needed to control seasonal epidemics. This trial compared the protective efficacy in older adults of a quadrivalent, recombinant influenza vaccine (RIV4) with a standard-dose, egg-grown, quadrivalent, inactivated influenza vaccine (IIV4) during the A/H3N2-predominant 2014–2015 influenza season, when antigenic mismatch between circulating and vaccine influenza strains resulted in the reduced effectiveness of many licensed vaccines.

METHODS

We conducted a randomized, double-blind, multicenter trial of RIV4 (45 μg of recombinant hemagglutinin [HA] per strain, 180 μg of protein per dose) versus standard-dose IIV4 (15 μg of HA per strain, 60 μg of protein per dose) to compare the relative vaccine efficacy against reverse-transcriptase polymerase-chain-reaction (RT-PCR)–confirmed, protocol-defined, influenza-like illness caused by any influenza strain starting 14 days or more after vaccination in adults who were 50 years of age or older. The diagnosis of influenza infection was confirmed by means of RT-PCR assay and culture of nasopharyngeal swabs obtained from participants with symptoms of an influenza-like illness. The primary end point was RT-PCR–confirmed, protocol defined, influenza-like illness between 14 days or more after vaccination and the end of the influenza season.

RESULTS

A total of 9003 participants were enrolled and underwent randomization; 8855 (98.4%) received a trial vaccine and underwent an efficacy follow-up (the modified intention-to-treat population), and 8604 (95.6%) completed the per-protocol follow-up (the modified per-protocol population). Among RIV4 recipients, the RT-PCR–confirmed influenza attack rate was 2.2% (96 cases among 4303 participants) in the modified per-protocol population and 2.2% (96 cases among 4427 participants) in the modified intention-to-treat population. Among IIV4 recipients, the attack rate was 3.2% (138 cases among 4301 participants) in the modified per-protocol population and 3.1% (138 cases among 4428 participants) in the modified intention-to-treat population. A total of 181 cases of influenza A/H3N2, 47 cases of influenza B, and 6 cases of nonsubtypeable influenza A were detected. The probability of influenza-like illness was 30% lower with RIV4 than with IIV4 (95% confidence interval, 10 to 47; P=0.006) and satisfied prespecified criteria for the primary noninferiority analysis and an exploratory superiority analysis of RIV4 over IIV4. The safety profiles of the vaccines were similar.

CONCLUSIONS

RIV4 provided better protection than standard-dose IIV4 against confirmed influenza-like illness among older adults. (Funded by Protein Sciences; ClinicalTrials.gov number, NCT02285998.)

From Protein Sciences, Meriden, CT (L.M.D., R.I., M.M.J.C.); Biologics Consulting, Rockville, MD (P.P.); independent consultant, San Antonio, TX (K.L.G.); Jean Brown Research, Salt Lake City (D.M.); and Callahan Associates, San Diego, CA (J.C.). Address reprint requests to Dr. Dunkle at Protein Sciences, 1000 Research Pkwy., Meriden, CT 06450, or at ldunkle@proteinsciences.com.

*A complete list of the members of the PSC12 Study Team is provided in the Supplementary Appendix, available at NEJM.org.

N Engl J Med 2017;376:2427-36.
DOI: 10.1056/NEJMoa1608862

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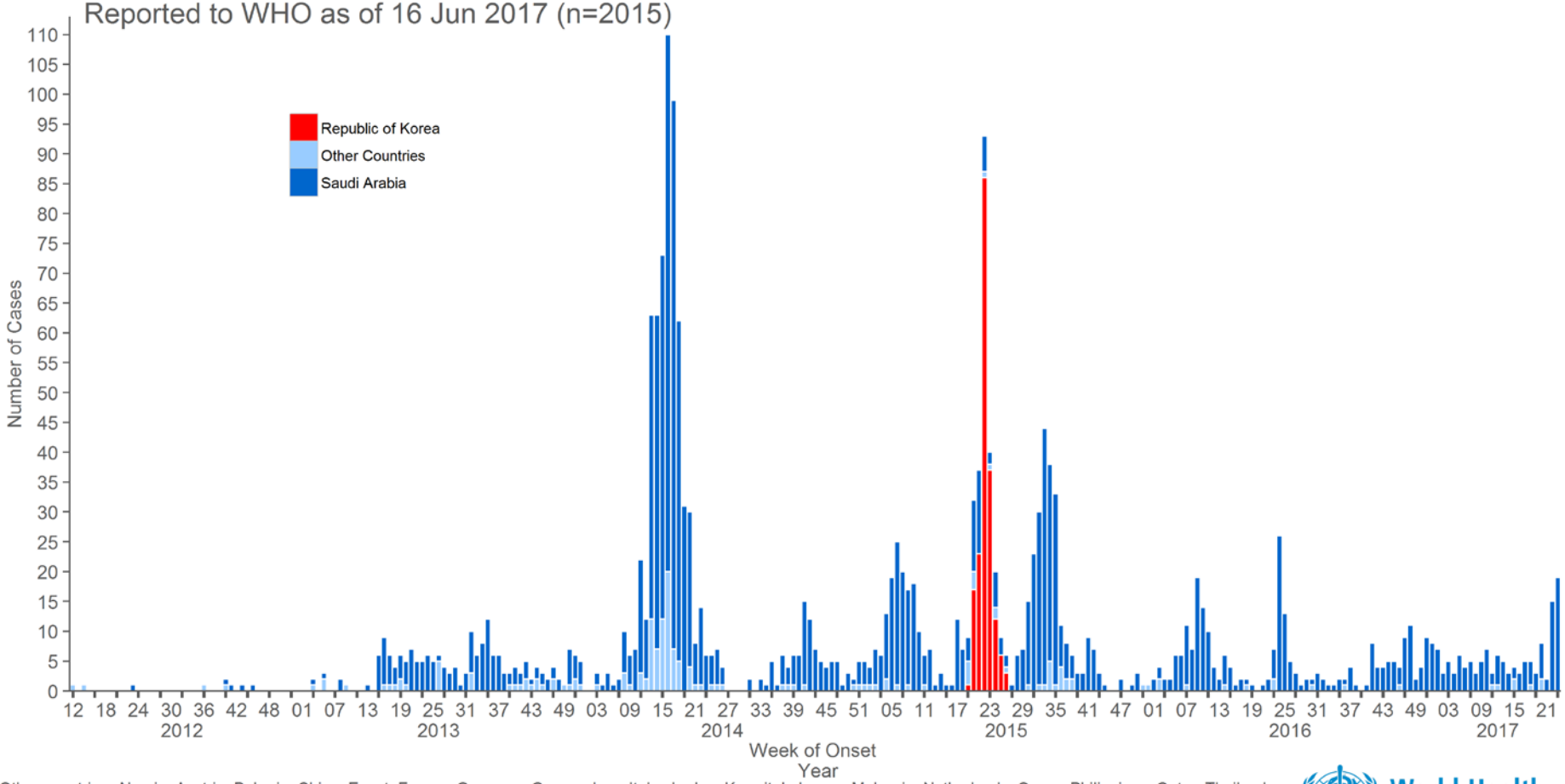
World Health Organization

Confirmed global cases of MERS-CoV

Reported to WHO as of 16 Jun 2017 (n=2015)



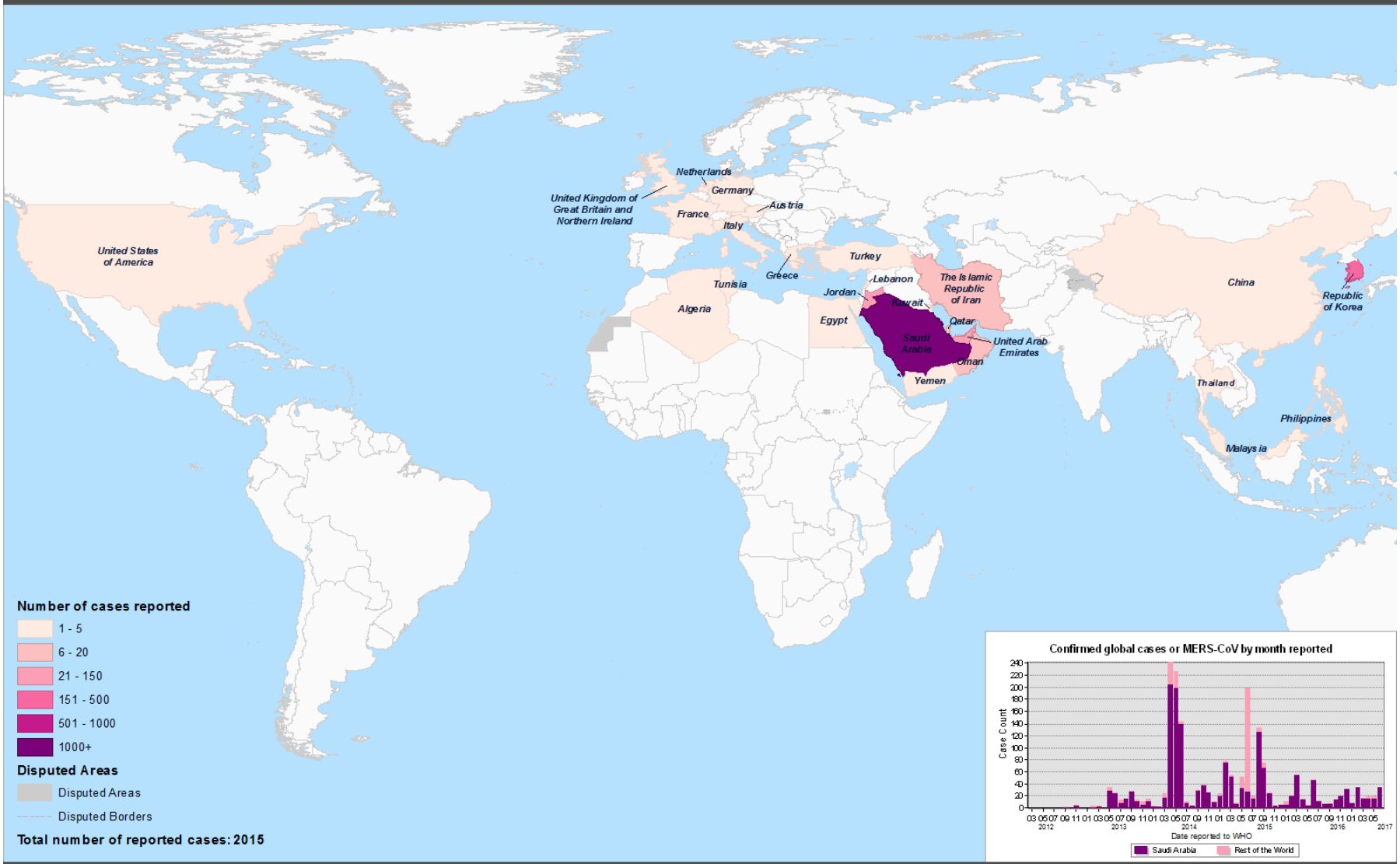
Other countries: Algeria, Austria, Bahrain, China, Egypt, France, Germany, Greece, Iran, Italy, Jordan, Kuwait, Lebanon, Malaysia, Netherlands, Oman, Philippines, Qatar, Thailand, Tunisia, Turkey, United Arab Emirates, United Kingdom, United States of America, Yemen

Please note that the underlying data is subject to change as the investigations around cases are ongoing. Onset date estimated if not available.

World Health Organization

World Health Organization

CONFIRMED GLOBAL CASES OF MERS-COV 2012 - 2017



Map Scale (A3): 1:1,109,175,783
1 cm = 11,092 km
Coordinate System: GCS WGS 1984
Datum: WGS 1984
Units: Degree

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: World Health Organization

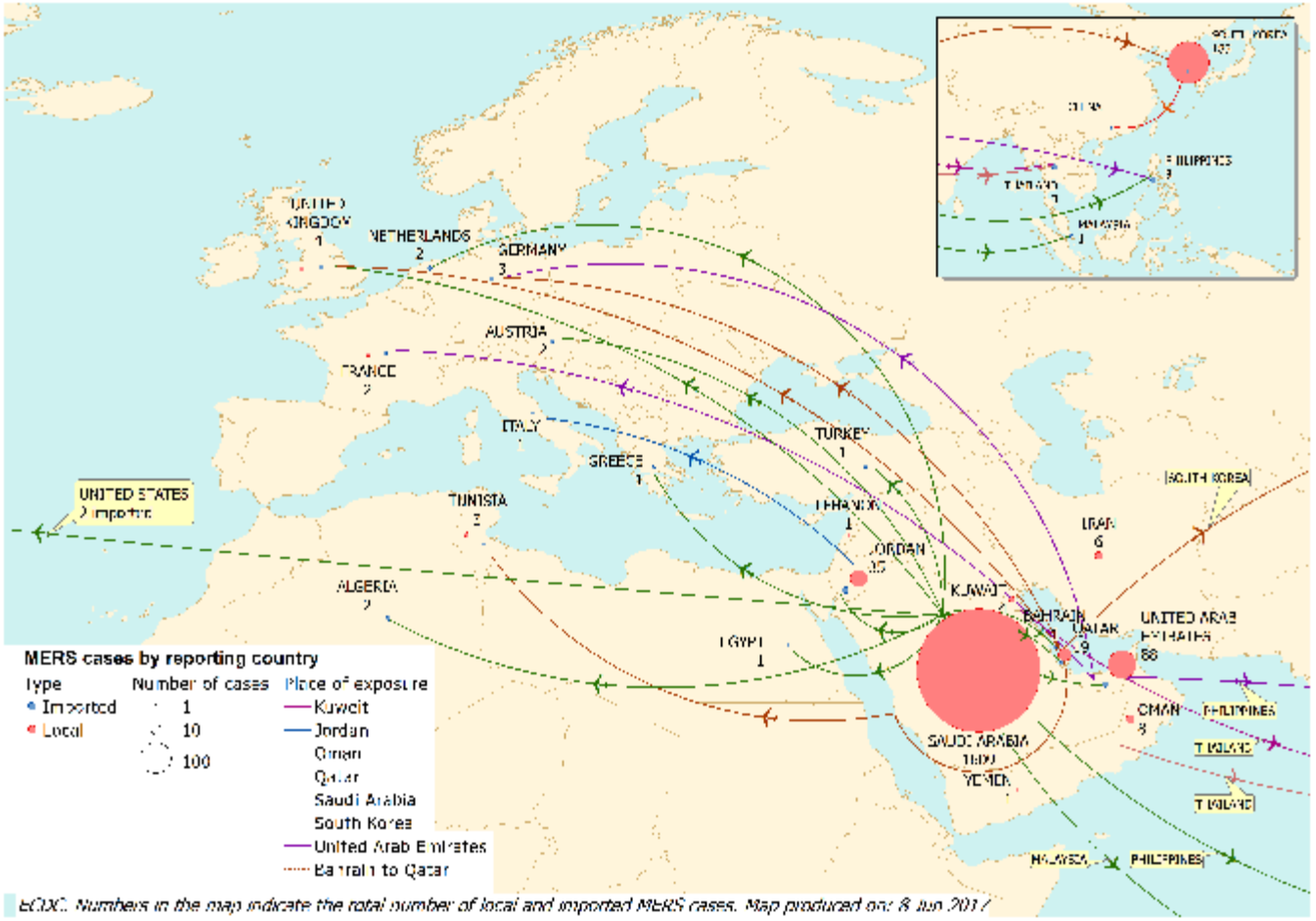
Map date: 16/06/2017

World Health Organization

European Centre for Disease Prevention and Control

Distribution of confirmed cases of MERS-CoV by reporting country and place of probable infection, March 2012 - 8 June 2017

ECDC



ECDC. Numbers in the map indicate the total number of local and imported MERS cases. Map produced on: 8 Jun 2017

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Saudi Arabia reports 14 MERS cases, 12 in Riyadh

Filed Under: MERS-CoV

Stephanie Soucheray | News Reporter | CIDRAP News | Jun 05, 2017

The Saudi Arabia Ministry of Health (MOH) reported 14 new cases of MERS-CoV infection in recent days, at least 10 of which are tied to an unnamed hospital or hospitals in Riyadh.

FS-Stock

At least 2 Riyadh cases fatal

On Jun 2 the MOH said three expatriate healthcare workers in Riyadh had acquired MERS-CoV (Middle East respiratory syndrome coronavirus). All patients were women who were asymptomatic and are currently in stable condition.

On Jun 3, three more cases in Riyadh were reported, including two fatalities. A 65-year-old expatriate man who acquired the virus as a patient in the hospital died, as did a 24-year-old expatriate man who had primary contact with camels. It's not known at this time if the patient exposed to camels was hospitalized at the time of his death.

Another patient, a 46-year-old Saudi, is listed in critical condition. The source of his infection is still under investigation.

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Saudi Arabia probing several hospital MERS clusters in Riyadh

Filed Under: MERS-CoV

Lisa Schnirring | News Editor | CIDRAP News | Jun 08, 2017

Saudi Arabia is battling several small unrelated clusters of hospital-related MERS-CoV infections in the capital city of Riyadh, an official with the World Health Organization (WHO) confirmed today, as the country's health ministry reported five new cases in the city.

sudok1 / iStock

Maria Van Kerkhove, PhD, an epidemiologist who is the WHO's technical lead for MERS-CoV (Middle East respiratory syndrome coronavirus), the cases are from different Riyadh hospitals. She added that Saudi Arabia's Ministry of Health (MOH) is conducting extensive contact tracing, which includes testing high-risk contacts, even if they don't have symptoms.

Riyadh 1 of 3 cities experiencing clusters

In the month of June, the Saudi MOH has reported 25 MERS cases in Riyadh, 21 with clear links to healthcare settings. The group includes healthcare workers and patients, most of whom have asymptomatic infections. Sources of the clusters are still under investigation. Reports this month also include a case involving primary exposure and another with camel exposure.

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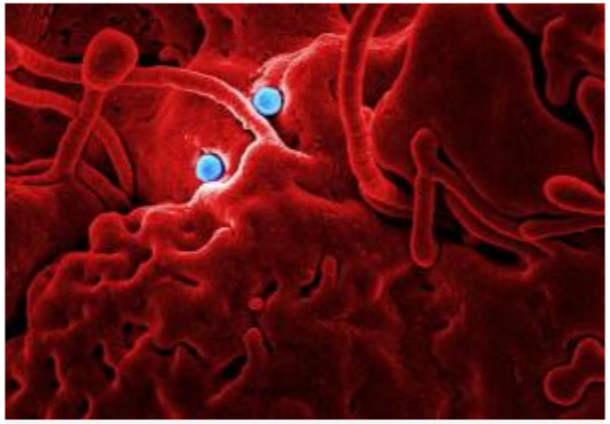
Saudi Arabia reports 7 new hospital MERS cases

Filed Under: MERS-CoV

Stephanie Soucheray | News Reporter | CIDRAP News | Jun 12, 2017

Over the weekend and today, the Saudi Arabian Ministry of Health (MOH) reported seven new cases of MERS-CoV. All the cases are connected to the current hospital outbreaks in Riyadh.



NIAID, with Colorado State University

In related news, a new study found that bats harbor thousands of coronaviruses.

Latest Saudi cases

On Jun 10 the MOH said a patient died from MERS-CoV (Middle East respiratory syndrome coronavirus). The 32-year-old Saudi man acquired the virus while he was in the hospital as a patient.

Yesterday five healthcare workers from Riyadh were diagnosed as having MERS-CoV. The three women and two men are all expatriate healthcare workers who contracted the disease on the job. Their ages range from 35 to 57, and all are in stable condition. Only two of the five employees had symptoms.

And today the MOH confirmed that another female expatriate healthcare worker was diagnosed in Riyadh. The woman, 45, was not symptomatic and is currently in stable condition.

University of Minnesota

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WHO details Saudi MERS clusters as outbreak grows

Filed Under: MERS-CoV

Stephanie Soucheray | News Reporter | CIDRAP News | Jun 13, 2017

The World Health Organization (WHO) today provided new details on three MERS-CoV clusters in Saudi Arabia involving 32 out of the 35 cases reported between Jun 1 and Jun 10. The clusters are in three different hospitals in Riyadh.

VILevi / iStock

In related news, the Saudi Arabia Ministry of Health (MOH) reported two new healthcare-related MERS-CoV (Middle East respiratory syndrome coronavirus) cases in Riyadh, evidence that the outbreak is not over.

One cluster involves 23 cases

There are 23 cases associated with cluster 1, the WHO said in an update. The index case was a 47-year-old man who was diagnosed as having MERS-CoV on Jun 1. So far, 14 asymptomatic healt care worker contacts, 1 household contact, and 7 other patients in the hospital have also been diagnosed.

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News Scan for Jun 14, 2017

Saudi officials confirm 3 more MERS cases in Riyadh

Today the Saudi Arabian Ministry of Health (MOH) announced three new MERS-CoV cases in Riyadh.

Yesterday, the World Health Organization (WHO) said there were three separate hospital-based outbreaks of MERS-CoV (Middle East respiratory syndrome coronavirus) in that city. At least one of the new cases is tied to the hospital outbreaks, but none of the patients are healthcare workers.

A 70-year-old Saudi woman is in critical condition after presenting with symptoms of MERS-CoV infection. She acquired the virus as a patient in a hospital.

A 59-year-old male expatriate is also in critical condition. The source of his infection is under investigation, according to the MOH. Finally, a 40-year-old Saudi man is in stable condition after being diagnosed as having MERS. His infection is listed as "primary," meaning it's unlikely he contracted the virus from another person.

The new cases raise Saudi Arabia's total since 2012 to 1,636, including 673 deaths. Fifteen people are still being treated for the disease.

Jun 14 MOH update

Jun 13 CIDRAP News story "WHO details Saudi MERS clusters as outbreak grows"

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News Scan for Jun 16, 2017

Saudi Arabia confirms fatal MERS case in Riyadh

Today the Saudi Arabian Ministry of Health (MOH) reported a new case of MERS-CoV related to ongoing outbreaks in three Riyadh hospitals.

A 68-year-old male expatriate who had preexisting disease has died from MERS-CoV (Middle East respiratory syndrome coronavirus). He acquired the virus as a patient in a hospital.

With the new case reported today, 36 illnesses since Jun 1 have been linked to MERS clusters in three hospitals in Riyadh, the country's largest city. The case raises Saudi Arabia's overall MERS-CoV total since the first human cases were detected in 2012 to 1,643, including 674 deaths. Nineteen people are still being treated for their infections.

Jun 16 MOH report

nature

Bats are global reservoir for deadly coronaviruses

Finding could help researchers to better predict where these viruses are likely to make the jump from animals to people.

Amy Maxmen

12 June 2017

Bats are the major animal reservoir for coronaviruses worldwide, according to a survey of thousands of animals across Africa, Asia and the Americas. The animals had previously been linked to the coronaviruses that caused outbreaks of severe acute respiratory syndrome (SARS) and Middle East respiratory virus (MERS), but until now researchers were not sure whether that was a coincidence or a sign of a broader trend.

The findings suggest that researchers who study infectious diseases can improve their predictions of where coronaviruses are likely to leap from animals to people by looking at the geographical distribution of different bat species and the behaviour of the viruses that they carry.

“It’s time to stop being reactive,” says Simon Anthony, a virologist at Columbia University in New York City and lead author of the study published today in *Virus Evolution*[1]. “The point is to take a different approach and be more proactive by understanding the diversity of viruses out there before they actually emerge.” The research was funded by the US Agency for International Development through a programme that aims to preempt pandemics of viruses that pass from animals to humans.

LETTER

doi:10.1038/nature22975

Host and viral traits predict zoonotic spillover from mammals

Kevin J. Olival[1], Parviez R. Hosseini[1], Carlos Zambrana-Torrelio[1], Noam Ross[1], Tiffany L. Bogich[1] & Peter Daszak[1]

The majority of human emerging infectious diseases are zoonotic, with viruses that originate in wild mammals of particular concern (for example, HIV, Ebola and SARS)[1–3]. Understanding patterns of viral diversity in wildlife and determinants of successful cross-species transmission, or spillover, are therefore key goals for pandemic surveillance programs[4]. However, few analytical tools exist to identify which host species are likely to harbour the next human virus, or which viruses can cross species boundaries[5–7]. Here we conduct a comprehensive analysis of mammalian host–virus relationships and show that both the total number of viruses that infect a given species and the proportion likely to be zoonotic are predictable. After controlling for research effort, the proportion of zoonotic viruses per species is predicted by phylogenetic relatedness to humans, host taxonomy and human population within a species range—which may reflect human–wildlife contact. We demonstrate that bats harbour a significantly higher proportion of zoonotic viruses than all other mammalian orders. We also identify the taxa and geographic regions with the largest estimated number of 'missing viruses' and 'missing zoonoses' and therefore of highest value for future surveillance. We then show that phylogenetic host breadth and other viral traits are significant predictors of zoonotic potential, providing a novel framework to assess if a newly discovered mammalian virus could infect people.

Viral zoonoses are a serious threat to public health and global security, and have caused the majority of recent pandemics in people[4], yet our understanding of the factors driving viral diversity in mammals, viral host range, and cross-species transmission to humans remains poor. Recent studies have described broad patterns of pathogen host range[1,3] and various host or microbial factors that facilitate cross-species transmission[5,7,8], or have focused on factors promoting pathogen and parasite sharing within specific mammalian taxonomic groups including primates[9–11], bats[12–14], and rodents[12,15]—but to date there has been no comprehensive, species-level analysis of viral sharing between humans and all mammals. Here we create, and then analyse, a database of 2,805 mammal–virus associations, including 754 mammal species (14% of global mammal diversity) from 15 orders and 586 unique viral species (every recognized virus found in mammals[16]) from 28 viral families (Methods). We use these data to test hypotheses on the determinants of viral richness and viral sharing with humans. We fit three inter-related models to elucidate specific components of the process of zoonotic spillover (Extended Data Fig. 1). First, we identify factors that influence total viral richness (that is, the number of unique viral species found in a given host, including those which may have the potential to infect humans). Second, we identify and rank the ecological, phylogenetic and life-history traits that make some species more likely hosts of zoonoses than others. Third, recognizing that not all mammalian viruses will have the biological capacity to infect humans, we identify and rank viral traits that increase the likelihood of a virus being zoonotic.

In examining the raw data, we found that observed viral richness within mammals varies at a host order and viral family level, and is highest for Bunya-, Flavi- and Arenaviruses in rodents; Flavi-, Bunya- and Rhabdoviruses in bats; and Herpesviruses in non-human primates (Extended Data Fig. 2). Of 586 mammalian viruses in our dataset, 263 (44.9%) have been detected in humans, 75 of which are exclusively human and 188 (71.5% of human viruses) zoonotic—defined operationally here as viruses detected at least once in humans and at least once in another mammal species (Methods). The proportion of zoonotic viruses is higher for RNA (159 of 382, 41.6%) than DNA (29 of 205, 14.1%) viruses. The observed number of viruses per wild host species was comparable when averaged across orders, but bats, primates, and rodents had a higher proportion of observed zoonotic viruses compared to other groups of mammals (Fig. 1). Species in other orders (for example, Cingulata, Pilosa, Didelphimorphia, Eulipotyphla) also shared a majority of their observed viruses with humans, but data were limited in these less diverse and poorly studied orders. Several species of domesticated ungulates (orders Cetartiodactyla and Perissodactyla) are outliers for their number of observed viruses, but these species have a relatively low proportion of zoonotic viruses (Fig. 1; Supplementary Discussion).

Previous analyses show that zoonotic disease emergence events and human pathogen species richness are spatially correlated with mammal and bird diversity[2,17]. However, these studies weight all species equally. In reality, the risk of zoonotic viral transmission, or spillover, probably varies among host species owing to differences in underlying viral richness, opportunity for contact with humans, propensity to exhibit clinical signs that exacerbate viral shedding[18], other ecological, behavioural and life-history differences[5,12,15], and phylogenetic proximity to humans[10]. We hypothesize that the number of viruses a given mammal species shares with humans increases with phylogenetic proximity to humans and with opportunity for human contact. We used generalized additive models (GAMs) to identify and rank host-specific predictors (ecological, life history, taxonomic, and phylogenetic traits, and a control for research effort) of the number of total and zoonotic viruses in mammals (Methods; Supplementary Table 1).

The best-fit model for total viral richness per wild mammal species explained 49.2% of the total deviance, and included a per-species measure of disease-related research effort, phylogenetically corrected body mass, geographic range, mammal sympatry, and taxonomy (order) (Fig. 2a–e). Not surprisingly, research effort had the strongest effect on the total number of viruses per host, explaining 31.9% of the total deviance for this model (Extended Data Table 1). The remaining 17.3% can be explained by biological factors, a value greater than or comparable to studies examining much narrower groups of mammal hosts[10,12,15] (Supplementary Discussion). Mammal sympatry was the second most important predictor of total viral richness (Fig. 2d). Our model selection consistently identified mammal sympatry calculated at a $\geq 20\%$ area overlap over other thresholds explored (Methods), providing insight into the minimum geographic overlap needed to facilitate viral sharing between hosts. Host geographic range was also significantly associated with increasing total viral richness, although the strength of this effect was low (Fig. 2c). Several

[1]EcoHealth Alliance, 460 West 34th Street, New York, New York 10001, USA.

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University of Minnesota

CIDRAP Center for Infectious Disease Research and Policy

Zika-related travel restrictions lifted for Miami-Dade

Filed Under: Zika

Jim Wappes | Editorial Director | CIDRAP News | Jun 02, 2017

The US Centers for Disease Control and Prevention today lifted Zika-related travel restrictions for Miami-Dade County because of a lack of recent Zika cases.

Iliyan Gochev / Flickr cc

In related news, the mosquito that spreads Zika has been identified for the first time in Nevada.

No Miami cases for 45 days

"The Centers for Disease Control and Prevention (CDC) has updated guidance for people who travel to or live in Miami-Dade County to lift the Zika cautionary (yellow) area designation," the agency said in a news release today.

"There have been no new cases of local Zika virus transmission identified and no cases under investigation in Miami-Dade County for more than 45 days. Lifting the yellow area designation means that there are no longer any travel recommendations related to Zika virus for Miami-Dade County, Florida. "

Is Zika Still A Problem In Florida And The Caribbean?

June 12, 2017 · 5:00 AM ET

There's no doubt about it: Zika is on the retreat in the Americas.

In Brazil, cases are down by 95 percent from last year. Across the Caribbean, outbreaks have subsided. And in Florida, the virus seems to have gone into hiding. Health officials haven't investigated a new Zika case for more than 45 days in Miami-Dade County.

Last week, the Centers for Disease Control and Prevention lifted the last travel warning for southern Florida. The agency is no longer recommending that pregnant women avoid the region.

SHOTS - HEALTH NEWS

Miami's Zika Outbreak Began Months Before It Was First Detected

"That's really exciting news," says Dr. Christine Curry, an OB-GYN at the University of Miami and Jackson Memorial Hospital. "Everybody has sort of exhaled."

But the threat to pregnant women, whether residents or travelers, isn't over — not in the least — Curry says, neither in Florida nor abroad.

So what should pregnant women and their families, or women who are trying to get pregnant, do? Let's start with Florida. Then we'll swing back to the international question at the end.

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CIDRAP Center for Infectious Disease Research and Policy

CDC notes 5% rate of Zika birth defects in US territories

Filed Under: Zika

Stephanie Soucheray | News Reporter | CIDRAP News | Jun 08, 2017

Today the Centers for Disease Control and Prevention (CDC) released its first analysis of Zika-related birth defects in US territories, concluding that 5% of all pregnancies with a confirmed Zika diagnosis in the mother resulted in a birth defect.

molka / iStock

The study was published in *Morbidity and Mortality Weekly Report* (*MMWR*).

"These findings are consistent with an earlier report we produced on women in the 50 states who had Zika-affected pregnancies," said Anne Schuchat, MD, the acting director of the CDC, in a press briefing.

The study tracked the outcomes of 2,549 pregnant women in territories (including Puerto Rico, Micronesia, and America Samoa) who had lab-confirmed Zika infections in pregnancy from Jan 1, 2016, to Apr 25 of this year. About 5%, or 122, of the babies born to these women had Zika-associated birth defects, ranging from hearing loss to severe microcephaly, or abnormally small heads.

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News Scan for Jun 13, 2017

Congenital Zika infection linked to problems with swallowing

Nine Brazilian infants with congenital Zika infections developed moderate to severe dysphagia, or problems with swallowing, increasing the risk of aspirating liquids and choking, according to a report yesterday in *Emerging Infectious Disease*.

The infants, all of whom had microcephaly, showed delays in the oral phase, with eight out of nine exhibiting delayed initiation of the pharyngeal phase of swallowing and all showing general oral dysfunction.

Onset of dysphagia began by the age of 3 months, and all the infants had difficulty swallowing, characterized by premature spillage, and marked loss of voluntary activity during the oral phase of swallowing. The authors describe many potential neurologic routes for the dysphagia, including hypertonia, which caused abnormal posture with hyperextension of the neck in six of the nine infants. The children with hyperextensions also displayed more irritability, making swallowing and eating more difficult.

The authors say their study highlights the importance of looking for dysphagia in children who have congenital Zika syndrome.

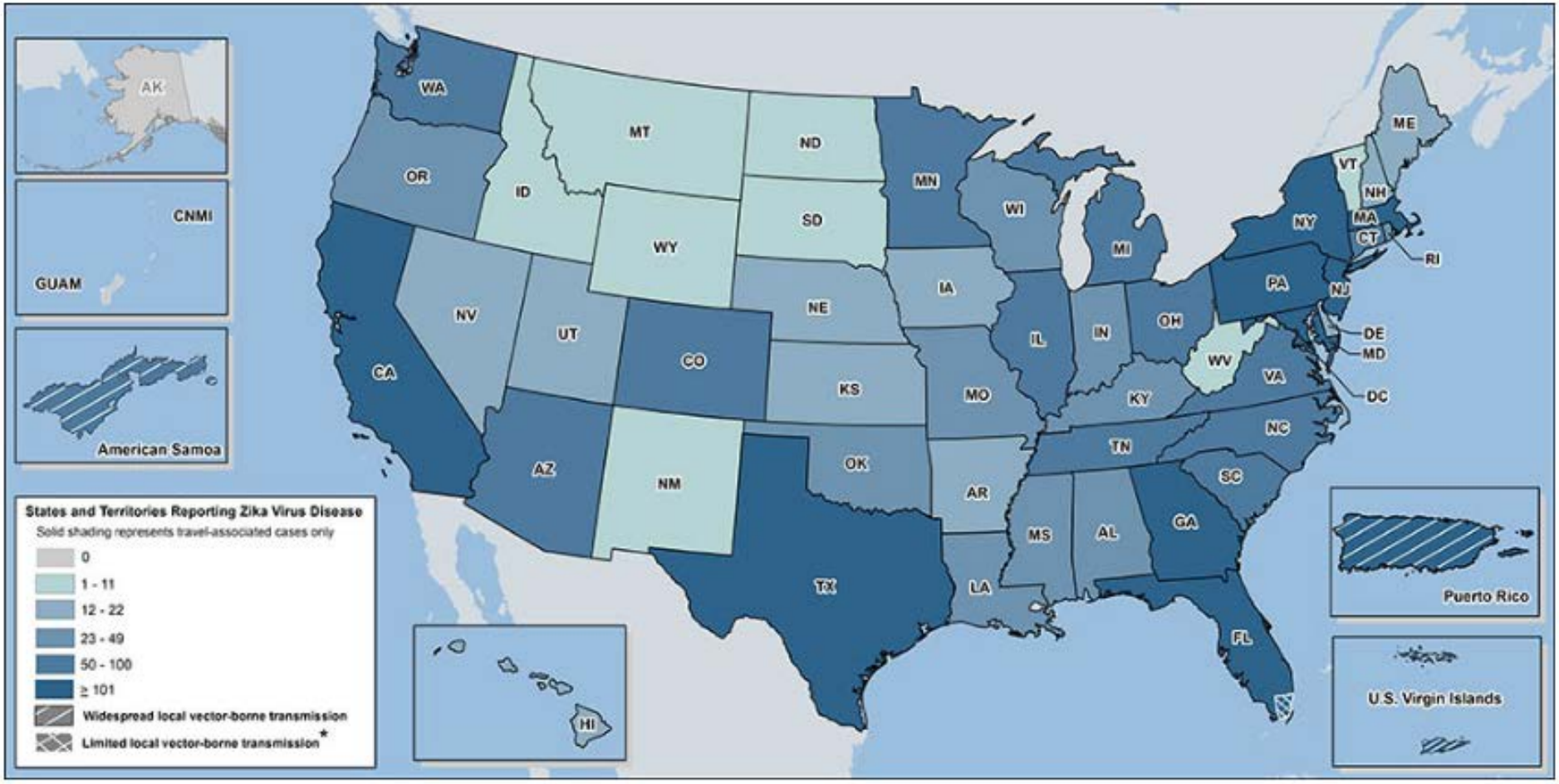
"The clinical follow-up of children with [congenital Zika] should be conducted by a comprehensive and multidisciplinary team of childhood specialists in neurology, gastroenterology, speech pathology, nutrition, and otorhinolaryngology, using clinical and instrumental swallowing assessments," the authors concluded.

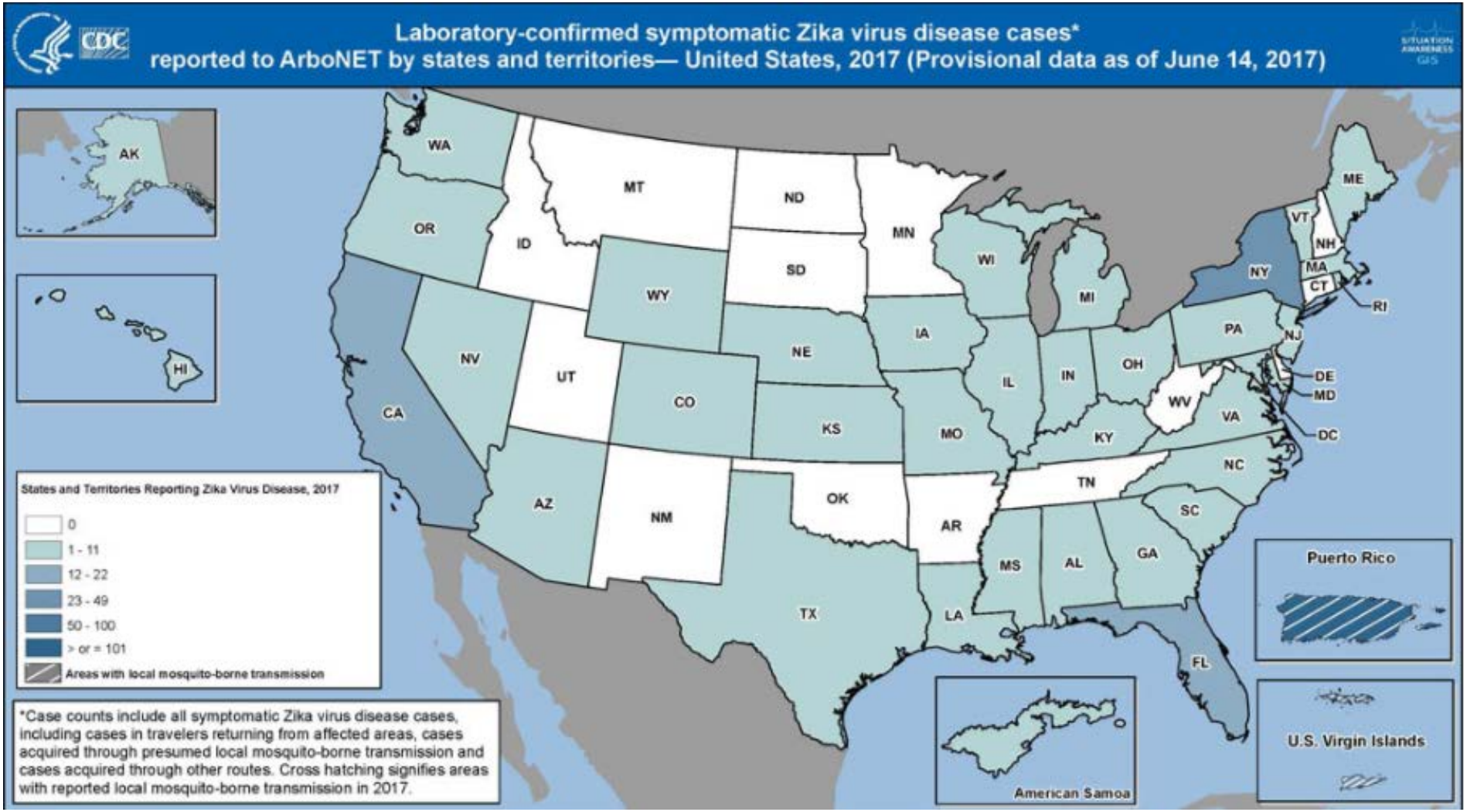
Jun 12 *Emerg Infect Dis* study

Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

Zika Cases Reported in the United States

Laboratory-confirmed Zika virus disease cases reported to ArboNET by state or territory (as of December 7, 2016)




Laboratory-confirmed symptomatic Zika virus disease cases*
reported to ArboNET by states and territories— United States, 2017 (Provisional data as of June 14, 2017)
AK
HI
WA
OR
CA
ID
NV
MT
WY
UT
AZ
CO
NM
ND
SD
NE
KS
OK
TX
MN
IA
MO
AR
LA
WI
IL
MS
MI
IN
KY
TN
AL
OH
WV
GA
FL
SC
NC
VA
PA
NY
ME
VT
NH
MA
CT
RI
NJ
DE
MD
DC
Puerto Rico
U.S. Virgin Islands
American Samoa
States and Territories Reporting Zika Virus Disease, 2017
0
1 - 11
12 - 22
23 - 49
50 - 100
> or = 101
Areas with local mosquito-borne transmission
*Case counts include all symptomatic Zika virus disease cases, including cases in travelers returning from affected areas, cases acquired through presumed local mosquito-borne transmission and cases acquired through other routes. Cross hatching signifies areas with reported local mosquito-borne transmission in 2017.

The Washington Post

More U.S. counties are finding Zika-carrying mosquitoes

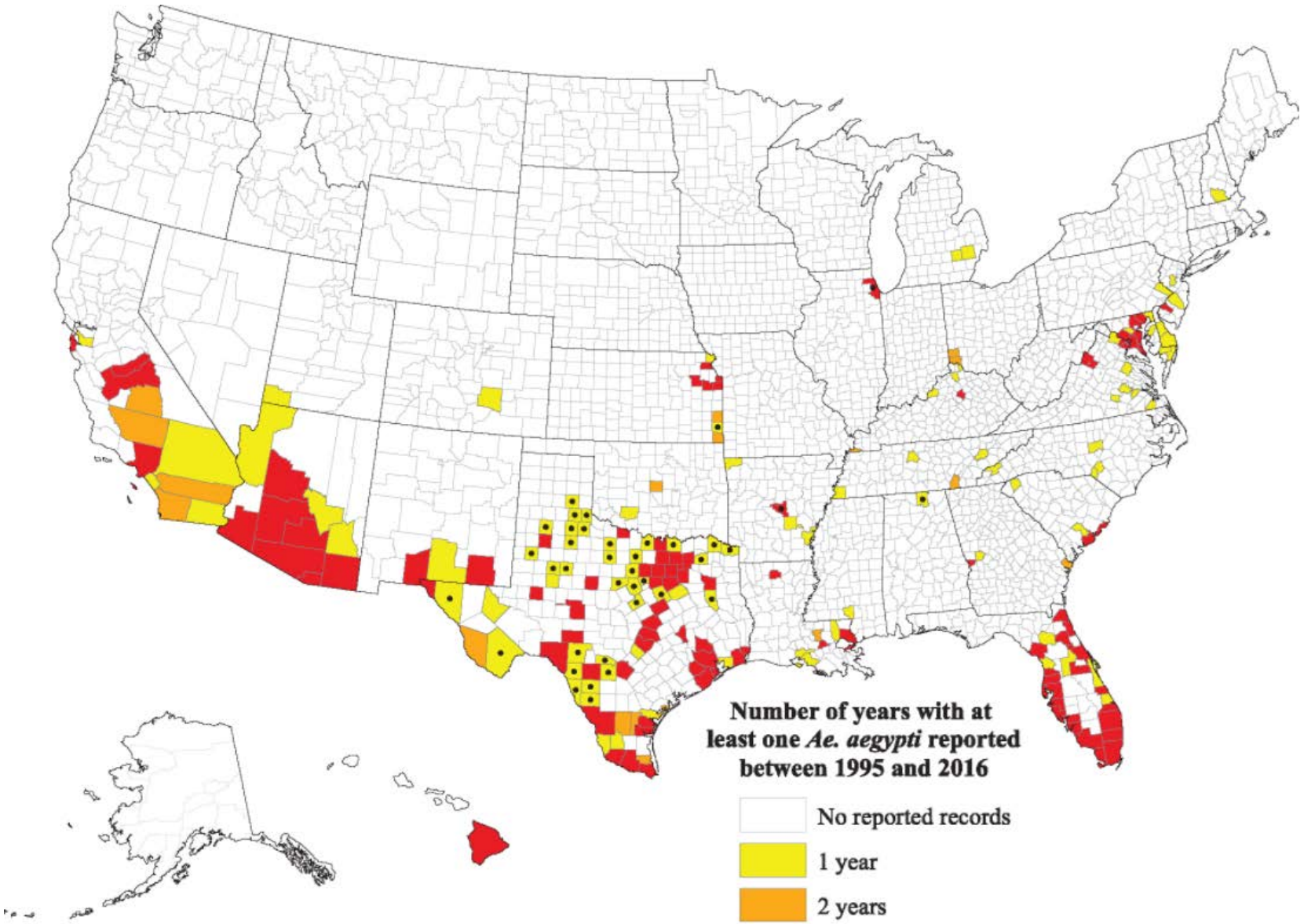
By Lena H. Sun June 20 at 3:27 PM

With the summer mosquito season in full swing in many states, a new report shows a significant increase in U.S. counties across the South that have reported mosquitoes capable of spreading Zika and related viruses.

Two types of mosquitoes are the primary transmitters of Zika, dengue, yellow fever and chikungunya viruses. Based on updated data collected through 2016, research from the Centers for Disease Control and Prevention found that 38 additional counties — primarily in Texas but as far north as Illinois — documented the presence of *Aedes aegypti* mosquitoes, Zika's main vector. That's an increase of 21 percent compared with an earlier 2016 survey.

Although Zika has faded from the headlines, researchers say the latest findings highlight the need for continued and improved mosquito surveillance. Accurate and up-to-date information on the insects' distribution has been difficult to obtain because of the patchwork system of vector control at local levels. In some places, one employee may be responsible for snow removal as well as mosquito control in what one expert described as “Chuck in a truck.”

JOURNAL OF MEDICAL ENTOMOLOGY



University of Minnesota

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News Scan for Jun 05, 2017

Aedes aegypti mosquitoes can transmit both Zika, chikungunya in 1 bite

A new study in *PLoS Neglected Tropical Diseases* shows that the *Aedes aegypti* mosquito can transmit both Zika and chikungunya virus in one bite, and co-infection with the viruses does not alter vector competence.

Dutch scientists infected the insects with both viruses to determine transmission rates using an experimental blood meal and found that 73% of the mosquitoes transmitted Zika, 21% spread chikungunya, and 12% transmitted both viruses in one bite. This is the first study to show that, just as in humans, the viruses can commonly co-infect mosquitoes.

"We show that ZIKV and CHIKV can simultaneously disseminate to the saliva of *Ae. aegypti* mosquitoes, indicating that co-infections do not strongly interfere with virus replication," the authors write.

In other Zika news, a vaccine presented at the American Society of Microbiology (ASM) Microbe 2017 meeting that wrapped up today showed 100% protection from the virus in mouse models. The vaccine is the first to be based on the NS1 protein, and the first to show single-dose protection against Zika.

Also at ASM, scientists described a new reliable clinical test that can diagnose Zika in semen samples. The test could be helpful for couples who are planning a pregnancy after a possible Zika exposure.

The test, called the Aptima assay, was found to have 100% sensitivity and specificity in 100 semen samples.

Jun 1 *PLoS Negl Trop Dis* study
Jun 4 ASM vaccine press release
Jun 4 ASM Zika test press release

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News Scan for Jun 07, 2017

Zika DNA vaccine protects reproductive tract in male mice

A new DNA-based Zika vaccine protected mice from Zika-related damage to the testes in a new clinical trial. Inovio Pharmaceuticals, the makers of the vaccine (GLS-5700), published the results of the trial today in *Nature Communications*.

In a press statement, Inovio said the results of the trial could mean that GLS-5700 could one day prevent sexual transmission of the mosquito-borne disease.

In the study, 10-week-old mice were challenged with high doses of Zika virus after receiving one dose of GLS-5700. Controls showed high levels of Zika RNA in sperm samples, but the vaccinated mice exhibited no signs of the Zika virus in their testes.

In other Zika news, whole-blood samples contain Zika virus antigens that can be useful in detecting the illness in people via flow cytometry, according to a study in the *Journal of Infectious Diseases* based on whole-blood samples taken from Zika patients during Singapore's 2015-2016 outbreak.

Although using polymerase chain reaction to detect Zika virus is common practice, the authors of the study note that people with mild illness might not get tested, and results could be skewed if the patient has waited too long.

"The use of whole blood staining for Zika antigen in blood monocytes is a cost-effective method with a short turnaround time that should be explored in the future as an alternative to aid in the diagnosis of active ZIKAV infection," the authors conclude.

Jun 7 *Nat Commun* study
Jun 7 Inovio press release
Jun 6 *J Infect Dis* study

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News Scan for May 16, 2017

Brazil's outbreak yellow fever virus has mutated significantly

The yellow fever virus that has caused a large outbreak in Brazil has undergone substantial mutations, but these changes should not affect vaccine effectiveness, Brazilian investigators said, according to a story today in Brazil's *O Globo* newspaper.

A Google-translated version of the report says that scientists from the nation's public health research center, Oswaldo Cruz Institute /Oswaldo Cruz Foundation (IOC/Fiocruz) have sequenced the complete genome of the yellow fever virus from two howler monkeys from Espirito Santo state. They describe eight mutations never before reported in this lineage.

Espirito Santo is one of six affected states.

"These changes are mainly grouped into functional non-structural domains of the virus, so it's very unlikely that they will affect the effectiveness of the vaccine," says Myrna Bonaldo, DSc, head of the IOC's Flavivirus Molecular Biology Laboratory and one of the coordinators of the study. Seven of the mutations are in the portion of the virus's genome linked to replication, and the other is in the assembly of the virus capsid, which stores genetic material. The vaccine targets the virus envelope, or outer coating.

The IOC/Fiocruz scientists don't know what affect these mutations have on virus transmission and infection. They plan to study that next, the story said.

May 16 *O Globo* report

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News Scan for May 25, 2017

Yellow fever now found in 7 Brazil states

The Pan American Health Organization (PAHO) said yesterday that seven Brazilian states now report suspected cases of yellow fever, but the virus is still not being transmitted by *Aedes aegypti* mosquitoes.

PAHO warned, however, that "confirmed epizootics in large cities, such as Vitoria in Espirito Santo and Salvador in Bahia, represent a high risk for a change in the transmission cycle."

So far Brazil has had 758 confirmed cases of yellow fever and 622 under investigation from December of 2016 to May 18. There have been 426 deaths.

The case-fatality rate remains at 34% for confirmed cases of yellow fever. Goias state reported its first case. Minas Gerais and Espirito Santo, which have had the most outbreak cases, have reported none in the past 2 weeks.

May 24 PAHO situation report

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News Scan for Jun 12, 2017

Two more Brazilian states report yellow fever

According from the latest update from the European Centre for Disease Prevention and Control (ECDC), two new states in Brazil, Mato Grosso and Distrito Federal, have reported their first cases of yellow fever in 2017.

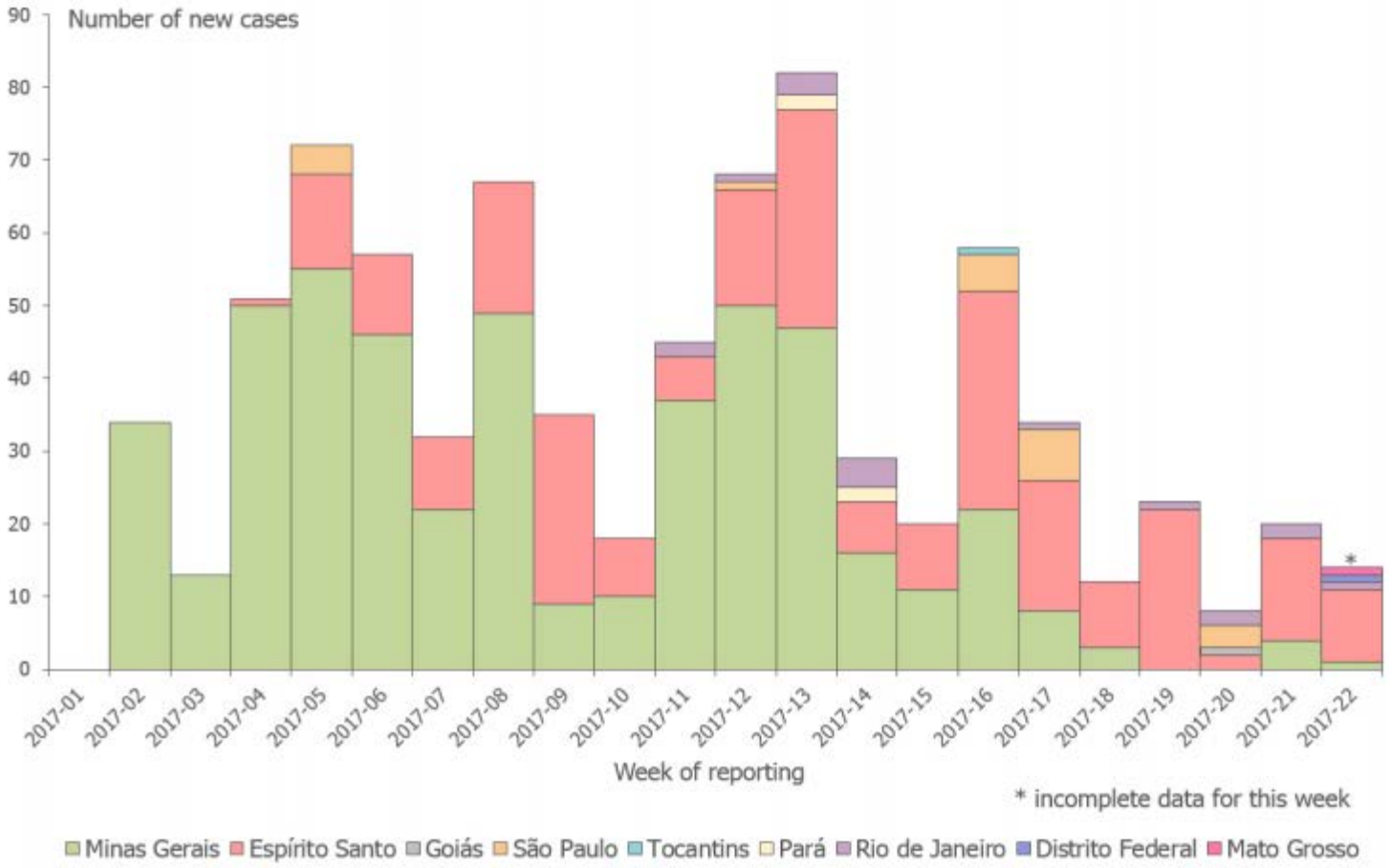
There are now nine states with confirmed yellow fever cases in Brazil. The latest outbreak began in January of this year in Minas Gerais and Espirito Santo. From Jan 6 to May 31, the ECDC said there have been 1,311 cases of yellow fever (519 suspected and 792 confirmed), including 311 deaths (37 suspected and 274 confirmed). The case-fatality rate is 34.6% among confirmed cases.

The ECDC said five other countries in South America have reported human cases of yellow fever this year: Peru (17), Colombia (6), Bolivia (1), Ecuador (1), and Suriname (1).

Jun 12 ECDC report

European Centre for Disease Prevention and Control

Distribution of confirmed human cases of yellow fever in Brazil by week of reporting from 6 January to 31 May 2017



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News Scan for Jun 08, 2017

WHO, GPEI confirm 3 cases of vaccine-derived polio in Syria

The World Health Organization (WHO) and the Global Polio Eradication Initiative (GPEI) confirmed today that there are at least three children with circulating vaccine-derived poliovirus type 2 in the Deir-Ez-Zor governorate of Syria. Two children have developed acute flaccid paralysis (AFP), and one child has tested positive for the virus but is currently healthy.

Genetic analysis of the viruses showed that they were related and circulating in that region of Syria for approximately 2 years.

The Deir-Ez-Zor governorate is a conflict zone in Syria, and several previous polio vaccination campaigns have been unsuccessful in the past. The current campaign began in March and April using the bivalent oral polio vaccine (OPV).

Despite limited coverage, the GPEI said that the detection of three cases of polio show that disease surveillance systems are functional in Syria.

In the middle of May, ProMED Mail, based on a report from an anonymous source, said health officials were investigating a cluster of 23 AFP cases in Syria in the same governorate. ProMED Mail is online reporting system of the International Society for Infectious Diseases.

Jun 8 GPEI statement

May 15 CIDRAP News scan "Investigators probe acute flaccid paralysis cluster in Syria"

University of Minnesota

CIDRAP Center for Infectious Disease Research and Policy

WHO reports 2 polio clusters in the DRC, new details in Syria

Filed Under: Polio

Lisa Schnirring | News Editor | CIDRAP News | Jun 13, 2017

The World Health Organization (WHO) today said two separate circulating vaccine-derived polio clusters have been detected in the Democratic Republic of Congo (DRC), as it also revealed new details about a similar outbreak in a conflict-ridden area of Syria.

Sanofi Pasteur / Flickr cc

Health officials there are following up on 3 confirmed cases and 58 cases of acute flaccid paralysis (AFP).

In other polio developments, global health leaders meeting in Atlanta yesterday doubled down on their commitment to eradicating the disease, with $1.2 billion more in funding pledges.

DRC clusters involve 2 types

The events in the DRC involve two separate circulating vaccine-derived poliovirus type 2 (cVDPV2) types, the WHO said in a statement. One type was isolated from two AFP case-patients from two districts in Haut-Lomami province in the south. Their paralysis onsets were Feb 20 and Mar 8. The other was isolated from three people in Maniema province in the country's east central region: two AFP cases with Apr 18 and May 8 paralysis onsets and a healthy community contact.

Risk of polio spread spikes in DRC after 2 outbreaks, WHO says

By Briana Duggan and Meera Senthilingam, CNN

Updated 9:26 AM ET, Thu June 15, 2017

Bill Gates pledges $450 million to fight polio 03:18

Story highlights

Four young children in two provinces have been identified with paralysis caused by polio infection

The World Health Organization is boosting monitoring, testing and immunization efforts

(CNN) — Two separate outbreaks of polio have been reported in remote parts of the Democratic Republic of Congo, a setback for large-scale efforts to eradicate the highly infectious and potentially fatal disease.

There is a high risk of the disease spreading across the country, though not beyond its borders, the World Health Organization (WHO) warned Tuesday in a statement.

Four cases have been reported in children between 17 and 36 months old in the provinces of Haut Lomami and Maniema, both in the center of the country.

All four children are paralyzed and are being monitored, the WHO said. Their families also are being monitored and getting tested regularly to see if they become infected.

"This is not unusual; it is usually the very young who are most at risk," said Oliver Rosenbauer, WHO Global Polio Eradication Initiative spokesman. "It further underscores the risk, how quickly polio can re-emerge in polio-free areas."

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News Scan for Jun 16, 2017

New polio case identified in Afghanistan

The Global Polio Eradication Initiative (GPEI) today reported one new case of wild poliovirus type 1 (WPV1) in Afghanistan. This is the fourth case of WPV1 found in Afghanistan this year.

The patient is from Nawzad district in Helmand province, and paralysis began on Apr 16. In addition, the virus was isolated from a healthy household contact of the patient.

Afghanistan is one of three countries, along with Pakistan and Nigeria, to still report circulating WPV1. There is low-level transmission in the common reservoir area of the Quetta-Kandahar corridor, between Pakistan and Afghanistan.

Pakistan has reported two WPV1 cases in 2017.
Jun 16 GPEI update

STAT

Polio outbreak expands in Syria, as health officials plan immunization campaign

By HELEN BRANSWELL @HelenBranswell / JUNE 20, 2017

The World Health Organization said Tuesday that an outbreak of vaccine-related polio cases in Syria has expanded, with 17 children so far paralyzed by the vaccine viruses.

Two weeks ago, there were only two cases.

Test results are pending for another 27 individuals, although some of them may turn out not to be polio cases.

One of the newly confirmed cases is in Raqqa, the self-proclaimed capital of the Islamic State — a factor that could add layers of complexity to an already difficult situation. The other 16 are in Mayadeen district in the Deir-Ez-Zor governorate of eastern Syria.

"The Raqqa case is further being investigated, including to more clearly assess whether there is local circulation in Raqqa as well, or [if this is] an isolated importation from Mayadeen," Michel Zaffran, director of polio for the WHO, said in an email. "We are also looking at the options for extending the response to Raqqa which … will be more complicated given the current situation."

Why is it taking so long to rid the world of polio?

By Susan Scutti, CNN

Updated 6:10 PM ET, Mon June 12, 2017

(CNN) — The estimated 22,000 attendees of the Rotary International Convention were quick to their feet Monday morning in Atlanta.

Inspiration for the many standing ovations came not only from the encouraging words of Atlanta Mayor Kasim Reed, professional wrestling star John Cena, Rotary President John Germ and famed Microsoft founder Bill Gates. It was also the sight of observers in wheelchairs lining the middle rows of the Georgia World Congress Center auditorium that moved the crowd to rise from their seats again and again.

The Rotarians, wearing glowing LED bracelets, came to Atlanta to commit once again to the elusive goal they first outlined in 1985: a world free of polio, the highly infectious disease that invades the nervous system and can cause total paralysis in a matter of hours. The disease can be prevented by a safe vaccine, which can protect a child for life when given multiple times.

The Washington Post

How war brought cholera and polio back to the Middle East

By Louisa Loveluck June 21 at 3:00 AM

BEIRUT — As war ravages public health systems in Yemen and Syria, doctors are treating epidemics and diseases they once thought were things of the past.

In Yemen, it is cholera, a bacterial disease spreading so fast, about 160,000 people have been fallen sick since April.

In Syria, it is polio, almost two decades after government efforts to eradicate the illness were hailed as a textbook example of a good practice.

"It's easy to think only of trauma cases when you think of war, but the damage it does to infrastructure has even more serious," said Natalie Roberts, the head of emergency operations for Doctors Without Borders France.

Yemen's health network has virtually collapsed during a two-year war that has left more than 10,000 people dead and displaced millions more. Around half of the country's medical facilities have been closed or destroyed, mostly by Saudi-led airstrikes, and despite aid agencies' best efforts, only 30 percent of required medical supplies are being imported into the country.

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News Scan for Jun 05, 2017

Two suspected Ebola cases confirmed in DRC

The Democratic Republic of the Congo (DRC) on Jun 2 said that two suspected Ebola cases had been confirmed via laboratory testing. According to the World Health Organization (WHO), these cases came from known transmission chains, and the date of the last confirmed case in the DRC remains May 11.

Since Apr 21, there have been 4 confirmed and 3 probable Ebola cases, of which 4 have died (case-fatality rate, 57%). The WHO said scientists are currently investigating unusually high mortality in swine populations from eight villages in northern DRC.

Contact follow-up and tracing were already under way for the two confirmed cases, and the WHO said that the outbreak is controlled.

The current outbreak is the DRC's eighth since Ebola virus was first detected in 1976.
Jun 2 WHO bulletin

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News Scan for Jun 15, 2017

DRC reports new suspected case of Ebola

The World Health Organization (WHO) African regional office released a new situation report on the current outbreak of Ebola in the Democratic Republic of the Congo (DRC), noting one additional suspected case of the viral disease since the last report on Jun 9.

In the last week, DRC health officials have investigated 33 suspected cases, with only 1 being a possible infection.

The last confirmed case was isolated on May 17. To date, there have been 5 confirmed, 3 probable, and 1 suspected case. Ninety percent of simulated modeling predictions show no more cases in the next 30 days, the WHO said.

In addition, the overall national risk of Ebola has been downgraded from "high" to "moderate." All cases have been located in the Likati Health Zone, a remote part of northern DRC.

Jun 12 WHO update

EBOLA VIRUS DISEASE
Democratic Republic of the Congo

External Situation Report 25

World Health Organization
REGIONAL OFFICE FOR Africa

Date of information: 19 June 2017

1. Situation update

WHO, UN Agencies, international organizations, non-governmental organizations (NGOs) and partners continue to support the Ministry of Health (MoH) in the Democratic Republic of the Congo to rapidly investigate and respond to the outbreak of Ebola virus disease (EVD) in Likati Health Zone, Bas Uele Province in the north-east of the country.

On 19 June 2017, no new confirmed, probable cases or suspected have been reported since the last situation update on 15 June. Seven alerts have been reported and investigated and none fulfilled the suspected case definition.

Cumulatively, since the start of the outbreak, there have been five confirmed and three probable cases. Additionally there have been 99 suspected cases reported that following laboratory analysis tested negative for EVD and therefore were deemed not to be cases. The last confirmed case was isolated on 17 May 2017 and tested negative for EVD by PCR for the second time on 21 May 2017. Of the confirmed and probable cases, four survived and four died, resulting in a case fatality rate of 50%. The confirmed and probable cases were reported from Nambwa (four confirmed and two probable), Ngayi (one probable) and Mabongo (one confirmed).

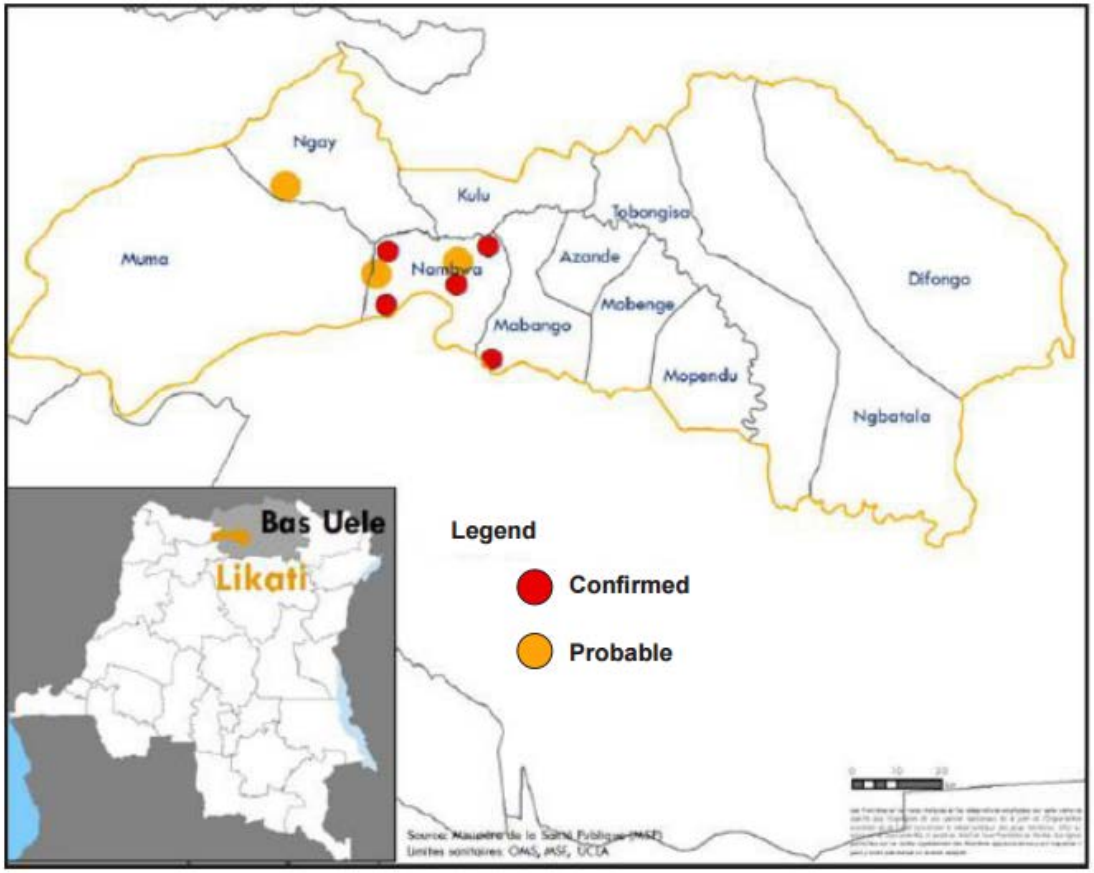
Data modelling suggests that the risk of further cases is currently low but not negligible, and decreases with each day without new confirmed/probable cases. As of the reporting date, 97% of simulated scenarios predict no further cases in the next 30 days.

All seven response committees are maintaining functionality at the national level, namely monitoring, case management, water sanitation and hygiene (WASH) and biosafety, laboratory and research, pyscho-social management, logistics, and communication. A response team will remain in the affected areas until the declaration of the end of the outbreak.

This EVD outbreak in the Democratic Republic of the Congo was notified to WHO by the MoH on 11 May 2017. The cluster of cases and deaths of previously unidentified illness had been reported since late April 2017. Likati Health Zone shares borders with two provinces in the Democratic Republic of the Congo and with the Central African Republic (Figure 1). The affected area is remote and hard to reach, with limited communication and transport infrastructure.

World Health Organization

Figure 1. Geographical distribution of confirmed and probable cases of Ebola virus disease in the Democratic Republic of the Congo as of 19 June 2017



As this is a rapidly changing situation, the reported number of cases and deaths, contacts being monitored and the laboratory results are subject to change due to enhanced surveillance, contact tracing activities, on-going laboratory investigations, reclassification, and case, contact and laboratory data consolidation.

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CIDRAP Center for Infectious Disease Research and Policy

DRC approves use of Ebola vaccine

Filed Under: Ebola; VHF

Stephanie Soucheray | News Reporter | CIDRAP News | May 30, 2017

EU-ECHO / Flickr cc

The Democratic Republic of the Congo (DRC) has approved the use of the experimental Ebola vaccine, rVSV-ZEBOV, while a new study on the vaccine showed overall good safety data, but with possible effects on joints.

The Merck vaccine has not yet been licensed, but clinical trials conducted in 2015 and 2016 showed it to be extremely effective in preventing Ebola virus disease.

According to the latest situation report, dated May 28, the World Health Organization (WHO) said the protocol for a ring vaccination, which was successfully used in Guinea in 2015, has been approved by the DRC's regulatory authorities.

"Planning and readiness should be completed urgently to be able to rapidly initiate ring vaccination should an EVD laboratory confirmed case be identified outside already defined chains of transmission. The vaccine would be offered to contacts and contacts of contacts of a confirmed EVD case, including health care workers and field laboratory workers," the WHO said.

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CIDRAP Center for Infectious Disease Research and Policy

News Scan for Jun 12, 2017

Ebola vaccine trial finds good antibody persistence for VSV-EBOV

In a new study on the Ebola vaccine that has already shown effectiveness in an earlier phase 3 trial during West Africa's outbreak, researchers found that antibodies persist at least for a year and that the vaccine was well tolerated. A team from NewLink Genetics and Merck—the two groups that have licensed the vaccine developed by the Public Health Agency of Canada—published their phase 1b findings Jun 9 in *The Lancet Infectious Diseases*.

The trial took place at eight US study sites starting at the end of 2014 and involved 512 healthy adults in two cohorts who received one of seven different VSV-EBOV doses; 418 received the vaccine and 94 got placebo. Early studies had hinted at a possible drop-off in protection, and in one earlier phase 1 study, some study participants reported arthralgia after receiving the vaccine.

According to the new findings that cover 360 days of data, the 2×10^7 plaque-forming-unit dose used in the outbreak clinical setting appeared to be well tolerated; most adverse events were mild-to-moderate, occurred soon after vaccination, were of short duration, and were more common at the higher vaccine doses. Nineteen (4.5%) reported temporary joint pain that didn't seem related to the dose, but did seem to be related to increased age. The group saw robust antibody responses that have been reported by other groups, and at all doses tested, neutralizing antibodies persisted for at least 1 year after immunization.

In a related commentary, two infectious disease experts from the University of New Mexico said the study's strength is that it shows good persistence of antibody responses after vaccination, which could increase vaccine usefulness for healthcare workers and people in endemic areas who are likely to be exposed to Ebola over long periods. The authors are Elizabeth Clarke, PhD, and Steven Bradfute, PhD, both with infectious diseases division of the university's Center for Global Health. They also said the study sheds more light on safety concerns, revealing that transient arthritis was observed at a much lower rate than in earlier Ebola vaccine studies.

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News Scan for Jun 08, 2017

Study: Healthcare workers ill-prepared for Ebola in Ghana

A new study published in the journal *BMC Public Health* said that of 101 healthcare workers (HCWs) questioned in Ghana, 91% said they were not adequately prepared to handle a suspected case of Ebola.

The study is published as the Democratic Republic of the Congo is responding to that country's eighth outbreak of the deadly hemorrhagic fever. To date, there have been no cases of Ebola reported in Ghana, but the country was at risk during the 2013-2015 outbreak in West Africa.

Researchers conducted face-to-face interviews with HCWs at two different health facilities in Ghana and based their preparedness questions on the WHO's Ebola Preparedness Checklist.

Ninety-two of the 101 HCWs questioned said they had not had training to handle Ebola cases. Only 26 (25.7%) said their places of employment were equipped to handle Ebola, and only 9 correctly identified which disinfectant to use while caring for a patient with suspected Ebola.

Jun 6 *BMC Pub Health* study

HOT TOPICS

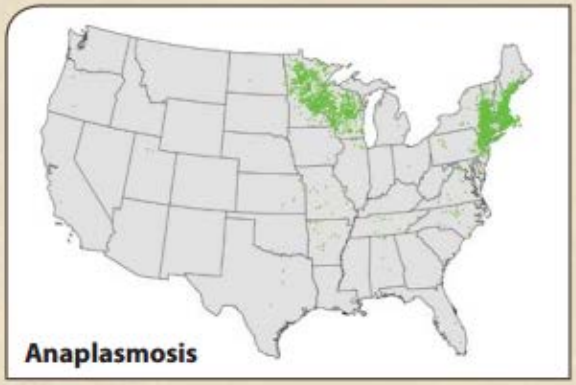
1. Avian Influenza
2. MERS-CoV
3. Zika

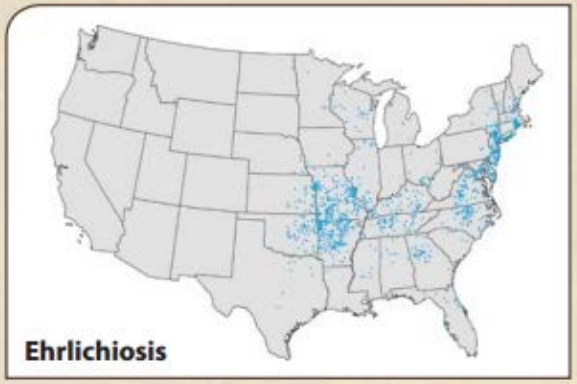
UPDATES

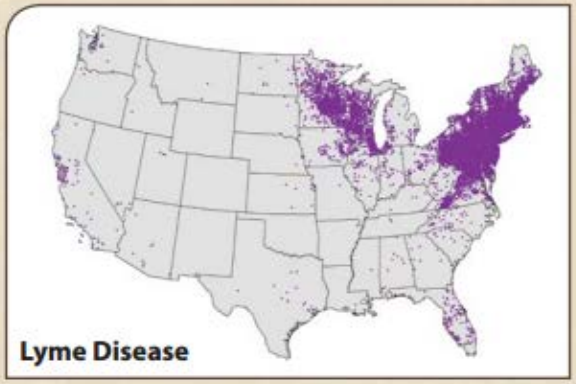
4. Yellow fever
5. Polio
6. Ebola
7. Tickborne diseases
   - Powassan virus, meat allergy, Lyme disease, climate change
8. Antimicrobial resistance
9. *Legionella* cases
10. Current administration appointments
11. Other

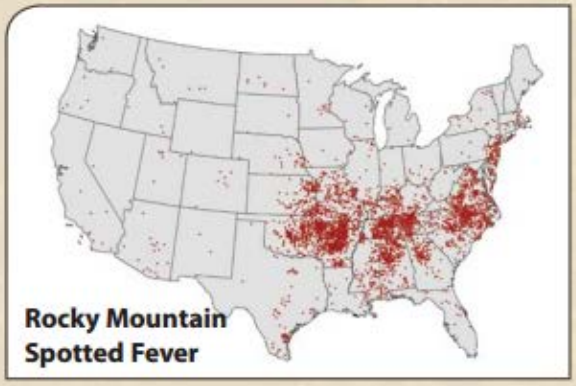
CDC

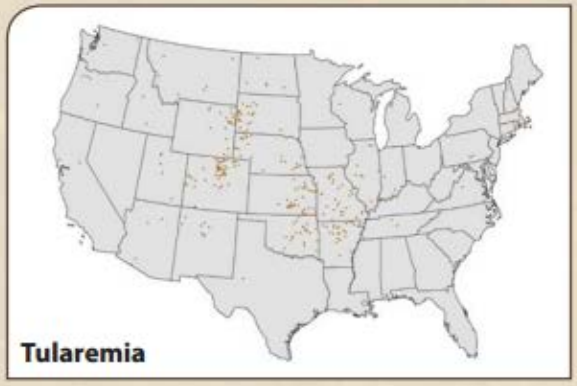
Selected Tickborne Diseases Reported to CDC, U.S., 2015



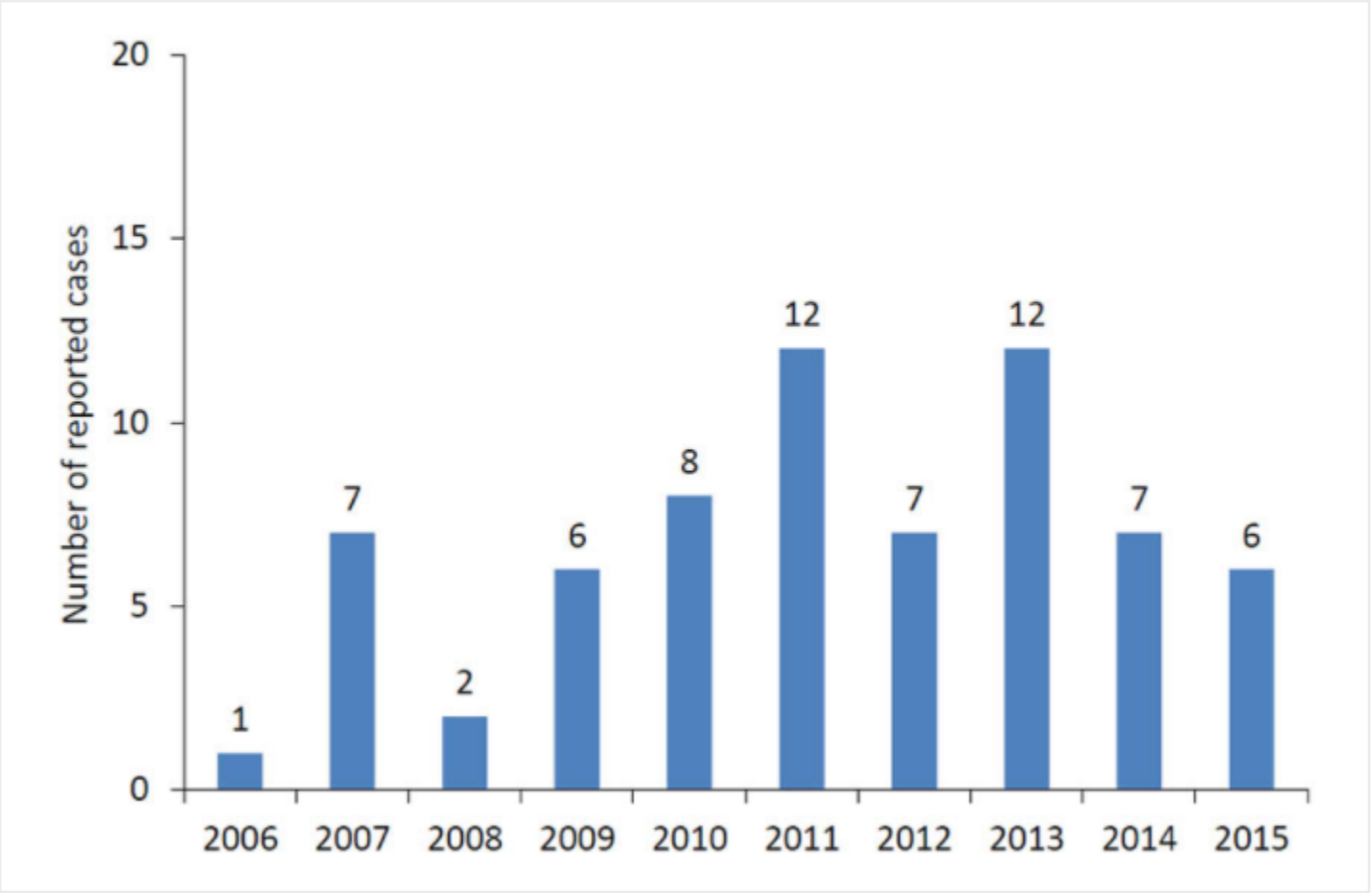








Powassan virus neuroinvasive disease cases reported by year, 2006–2015



Source: ArboNET Arboviral Diseases Branch, Centers for Disease Control and Prevention

CBS NEWS

By MARY BROPHY MARCUS / CBS NEWS / June 12, 2017, 2:26 PM

Man "lucky" to be alive after getting Powassan virus from tick bite

Tucker Lane of Barnstable, Massachusetts, has been around ticks his entire life, but a bite from one during the summer of 2014 almost killed him.

"Woke up sweating, cold, shaking felt like I was going to puke," Lane told CBS Boston.

A few days later he fell into a coma for a week.

It's not a common illness, but that doesn't mean people should dismiss it.

"It's out there at an extremely low level. So this is a rare disease, but there is some risk exposures," said Barnstable County Entomologist and Deer Tick Project Coordinator Larry Dapsis.

The deer tick is one of two types of ticks that can carry deadly Powassan virus. / CBS NEWS

Powassan virus has been detected in ticks along a 40 mile stretch of Massachusetts' Cape Cod peninsula, said Dapsis.

Eight cases of Powassan were reported in the entire state of Massachusetts from 2006 to 2015, according to the U.S. Centers for Disease Control and Prevention. State health officials say there have been 13 cases and three deaths since 2013, CBS Boston reports.

KARE 11 MINNEAPOLIS | ST. PAUL, MN
A TEGNA Company

Tick-borne Powassan virus might be spreading in MN

Ashley May, USA TODAY , KARE *12:34 AM. CDT May 04, 2017*

MINNEAPOLIS - Be watchful of ticks this year, as more are predicted to carry viruses.

Scientists have already said an unusually large abundance of acorns in the northeast two years ago fueled a population boom of white-footed mice last year. Dozens of ticks can attach to a single rodent, feed on its blood and acquire the bacteria that causes Lyme disease.

Now, many are concerned about Powassan virus (POW), associated with fever, vomiting, seizures and memory loss. About half of survivors have permanent neurological symptoms and 10% of all cases are fatal, according to the Centers for Disease Control and Prevention. Symptoms usually show up one week or a month after the tick bite. No vaccines or medications are available to treat or prevent the virus infection, the CDC reports.

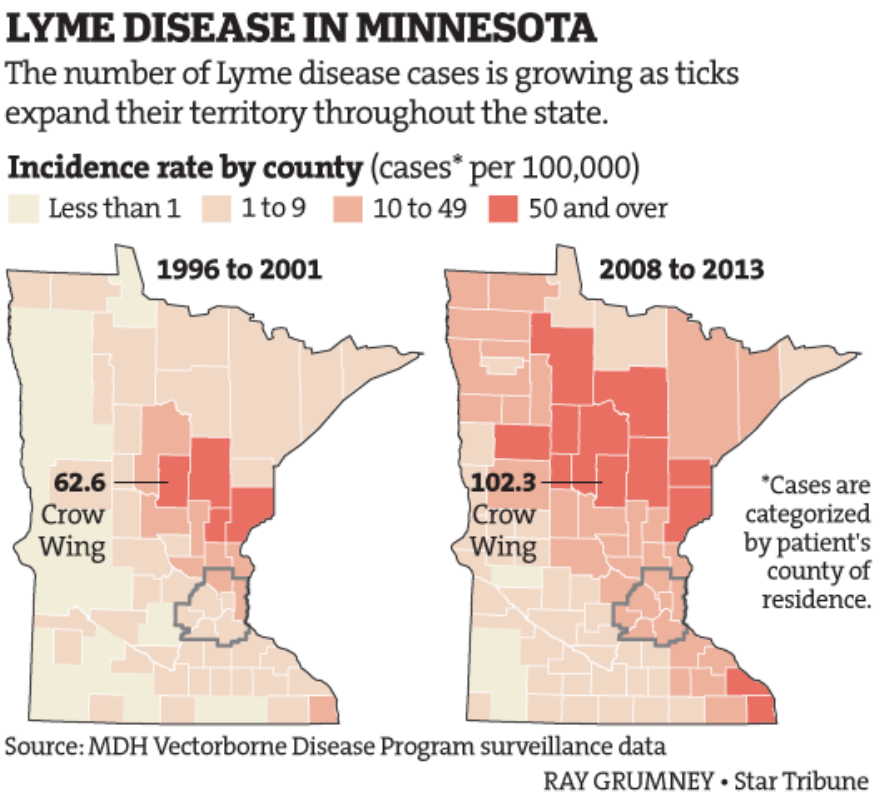
The virus is rare. Only 75 cases have been reported thus far -- 20 in Minnesota over the past decade.

StarTribune

Getting bit? Black flies and ticks on the attack after rains in Minnesota

And as ticks spread, so do cases of Lyme disease.

By Mary Lynn Smith Star Tribune | JUNE 2, 2017 — 10:13PM



In the Twin Cities, the Metropolitan Mosquito Control District is attempting to keep the mosquito and black fly populations at tolerable levels.

To keep biting gnats in check, the district adds a liquid bacterial product to kill the larvae in streams and rivers.

CBC news

Scientists study tick populations against backdrop of climate change

Researchers say there's no way to eliminate or diminish growth of tick population that spreads Lyme disease

By Sarah Betts, CBC News Posted: Jun 08, 2017 4:16 PM AT | Last Updated: Jun 08, 2017 4:16 PM AT

Scientists are using climate change models to predict how far ticks could spread as the world warms, and how this might impact a person's chances of contracting Lyme disease.

Scientists are looking at how the tick population, source of the bacteria that cause Lyme disease, might spread in relation to climate change. (CBC)

The research by biologists and climate scientists at St. Francis Xavier University was sparked by the seriousness of the disease, said Hugo Beltrami, a professor and Canada Research Chair in climate dynamics.

- **Tracking ticks: New study forecasts spread of Lyme disease in Eastern Canada**

"We wanted to see the potential expansion of the carrier tick given the new climate conditions," Beltrami told *Information Morning Saint John*.

Using climate change models is not necessarily a new practice in this kind of research, he said, but it is more important now than ever.

"There's been a model developed for some time that relates the number of ticks to the temperature and the heat, really," said Beltrami.

"And so what we wanted to do is examine that model of the tick population and the conditions for the tick population and tick expansion and reproduction with the scenarios of the intergovernmental planning for climate change."

The Washington Post

Why you need to know about mice, ticks, warm temperatures and Lyme disease

By Melissa Banigan June 18

"Everything is changing year after year," Haddad says. "Our rodenticide sales to distributors have increased about 15 percent over the past two years."

Siligato adds: "West Nile virus has killed many birds of prey along the East Coast, meaning there are more mice. To say it's just climate change isn't exactly accurate, but it's probably a part of the story."

The Cary Institute of Ecosystem Studies, a research and education organization in New York's Dutchess County, has predicted that there will be a rise in reported Lyme disease cases in 2017 along the Eastern Seaboard because there was a bumper crop of acorns in 2015. Acorns are a favorite food of the white-footed mouse, and the population of the species has been shown to increase two years after a surge of the nuts. More mice means more opportunities for tick nymphs to have their first blood meals.

University of Minnesota

CIDRAP Center for Infectious Disease Research and Policy

CDC: 'Chronic Lyme' treatments carry serious risk

Filed Under: Lyme disease; Anti-science; Tick-borne Disease; Antimicrobial Stewardship

Stephanie Soucheray | News Reporter | CIDRAP News | Jun 15, 2017

Jay Zynism / iStock

The Centers for Disease Control and Prevention (CDC) published five case studies today in *Morbidity and Mortality Weekly Report* (*MMWR*) of patients who experienced serious complications and bacterial infections after receiving treatments for "chronic Lyme" disease.

There is no medical definition of "chronic Lyme" and no treatment guidelines; instead, the term is used by patients and some providers to describe several symptoms, including fatigue and muscular pain, attributed to prior infection with Lyme disease. Many patients with a chronic Lyme diagnosis, however, test negative for *Borrelia burgdorferi*, the bacteria associated with the ticks that carry Lyme.

Some practitioners, including alternative medicine professionals who advertise themselves as being "Lyme literate" prescribe long-term courses of antibiotics and immunoglobulin therapy. But the CDC warns that treating an undiagnosed condition with an unregulated treatment plan can be dangerous for patients.

WIRED

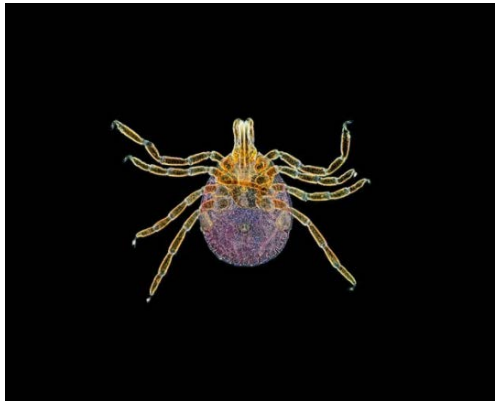
MEGAN MOLTENI SCIENCE 06.17.17 07:00 AM

OH, LOVELY: THE TICK THAT GIVES PEOPLE MEAT ALLERGIES IS SPREADING

FIRST COMES THE unscratchable itching, and the angry blossoming of hives. Then stomach cramping, and—for the unluckiest few—difficulty breathing, passing out, and even death. In the last decade and a half, thousands of previously protein-loving Americans have developed a dangerous allergy to meat. And they all have one thing in common: the lone star tick.

Red meat, you might be surprised to know, isn't totally sugar-free. It contains a few protein-linked saccharides, including one called galactose-*alpha*-1,3-galactose, or alpha-gal, for short. More and more people are learning this the hard way, when they suddenly develop a life-threatening allergy to that pesky sugar molecule after a tick bite.

Yep, one bite from the lone star tick—which gets its name from the Texas-shaped splash of white on its back—is enough to reprogram your immune system to forever reject even the smallest nibble of perfectly crisped bacon. For years, physicians and researchers only reported the allergy in places the lone star tick calls home, namely the southeastern United States. But recently it's started to spread. The newest hot spots? Duluth, Minnesota, Hanover, New Hampshire, and the eastern tip of Long Island, where at least 100 cases have been reported in the last year. Scientists



TwinCities.com
PIONEER PRESS

Southern tick — whose bite blamed for allergy to red meat — apparently moving north

By JOHN LUNDY | Forum News Service

PUBLISHED: May 29, 2017 at 10:26 pm | UPDATED: May 30, 2017 at 3:52 pm

DULUTH, Minn. — It was last June, and Suzanne Keithley-Myers was driving back to her family's Duluth Township home after mushroom hunting in the Aurora area. As she drove, she spotted a few ticks on her body, and she reacted as any Northlander would.

"Driving home, pulling ticks off, chucking them out the window," said Keithley-Myers, 40, earlier this month in the woodsy home she shares with her husband, Billy, their three school-age children and their two dogs.

The "bull's-eye" rashes that appeared a couple of days later surprised her, she said. A registered nurse in oncology with Essentia Health in Duluth, she knew such rashes can be an indicator for Lyme disease, which is caused by a tick bite. But it didn't make sense. A tick was supposed to be feeding for more than 24 hours before it could cause Lyme disease, Keithley-Myers thought. She knew the ticks she'd chucked out the window couldn't have been with her for more than a few hours.

Nonetheless, Keithley-Myers was given doxycycline, an antibiotic used to treat Lyme disease.

HOT TOPICS

1. Avian Influenza
2. MERS-CoV
3. Zika

UPDATES

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University of Minnesota

CIDRAP Center for Infectious Disease Research and Policy

WHO revises essential drug list to battle antibiotic resistance

Filed Under: Antimicrobial Stewardship

Lisa Schnirring | News Editor | CIDRAP News | Jun 06, 2017

Signaling a major change to its Essential Medicines List (EML), the World Health Organization (WHO) today grouped antibiotics into three categories—access, watch, and reserve—and included recommendations when each should be used to treat 21 common infections.

borgogniels / iStock

The WHO updates the EML list every other year, and many countries use the list to boost access to medicines and to guide decisions about what products they should make sure are available to their populations.

Changes target antibiotic resistance

In a statement today, the WHO said the changes mark the biggest revision of the antibiotics section in the EML's 40-year history and are geared toward ensuring that antibiotics are available when needed and that the right drugs are prescribed for the right infections. It added that the changes are designed to improve treatment outcomes, curb the development of drug-resistant bacteria, and preserve the effectiveness of "last resort" antibiotics.

University of Minnesota

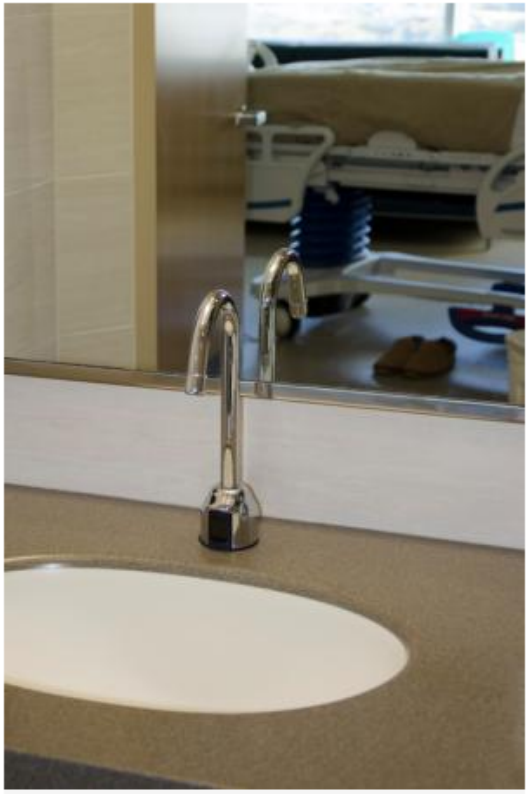
CIDRAP Center for Infectious Disease Research and Policy

ICU-room sink removal may cut bacterial colonization

Filed Under: Antimicrobial Stewardship; Healthcare-Associated Infections

Robert Roos | News Writer | CIDRAP News | Jun 12, 2017

Dutch investigators found that removing sinks from intensive care unit (ICU) rooms and using a "water-free" method of care reduced patient colonization with gram-negative bacilli (GNB), according to a Jun 10 report in *Antimicrobial Resistance and Infection Control*.



Boxie61 / iStock

The GNB category includes many types of medically significant bacteria, such as *Salmonella, Pseudomonas, Shigella, Yersinia,* and the Enterobacteriaceae family. Multidrug resistance in GNB is a growing problem in hospitals.

Sink removal, "water-free" care

While sinks are considered a best practice in ICU design, a number of studies have implicated their presence as a factor in hospital-associated infections, according to the authors. After an *Enterobacter* outbreak in their hospital ICU was linked to contaminated sinks in 2014, the researchers decided to test the effect of removing sinks from the unit.

The "quasi-experimental study" was designed to evaluate the effect of sink removal and "water-free"

UNIVERSITY OF MINNESOTA

CIDRAP Center for Infectious Disease Research and Policy

Tailored infection control shown to cut MRSA in veterans home

Filed Under: Antimicrobial Stewardship; MRSA

Natalie Vestin, MPH | News Reporter | CIDRAP | Jun 16, 2017

Pennsylvania DMVA / Flickr cc

An infection control program approved by and tailored to the needs of veterans residing in a community living center reduced the rate of methicillin-resistant *Staphylococcus aureus* (MRSA) infections 89% over 4 years, according to research presented at the 44th Annual Conference of the Association for Professionals in Infection Control (APIC).

As is the case with many congregate living facilities, the risk of MRSA environmental contamination and person-to-person transmission is high at the W.G. (Bill) Hefner VA Medical Center's Community Living Center (CLC) in Salisbury, N.C. MRSA prevalence at the CLC had reached a staggering 70% by 2012, prompting Veterans Health Administration (VHA) officials to consider an intervention that would have drastic results yet remain sympathetic to residents' autonomy.

University of Minnesota

CIDRAP Center for Infectious Disease Research and Policy

Review ties stewardship to sharp drop in resistant bacteria

Filed Under: Antimicrobial Stewardship; Clostridium difficile; MRSA

Chris Dall | News Reporter | CIDRAP News | Jun 19, 2017

iStock

Antibiotic stewardship programs have reduced the incidence of infections and colonization with multidrug-resistant (MDR) gram-negative bacteria in hospital patients by more than half, and cut methicillin-resistant *Staphylococcus aureus* (MRSA) and *Clostridium difficile* incidence by a third, according to a new review and meta-analysis in *The Lancet Infectious Diseases*.

The evidence also points to an increased effect when stewardship programs are combined with infection control measures, especially those targeting improved hand hygiene.

The review, by infectious disease expert David Baur, MD, and a team of researchers from Tubingen University Hospital in Germany, analyzed 32 studies, comprising more than 9 million patient-days, conducted from 1992 to 2014 in the United States, Europe, Asia, and Latin America. While previous reviews of stewardship programs at hospitals have focused on clinical outcomes, cost, incidence of antibiotic resistance, and *C difficile* infections, this appears to be the first to measure incidence of colonization or infections as a primary outcome.

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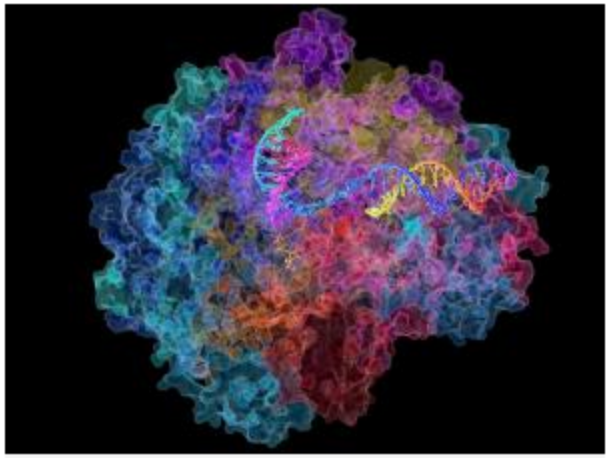
CIDRAP Center for Infectious Disease Research and Policy

New drug touted as potential big step in fighting resistant bacteria

Filed Under: Antimicrobial Stewardship

Robert Roos | News Writer | CIDRAP News | Jun 15, 2017

A new antibiotic compound that was found in soil bacteria promises to be effective against a wide range of drug-resistant bacteria and may be difficult for mutating bacteria to evade, according to a report published today in *Cell*.



NIH

RNA polymerase, the enzyme that the new drug inhibits.

The drug, pseudouridimycin (PUM), inhibits RNA polymerase (RNAP), the enzyme that enables bacteria to make RNA, the authors say. In doing so, the agent uses a different mechanism and binding site than those used by the existing drug rifampin, which is also an RNAP inhibitor. The rate of spontaneous bacterial resistance against PUM is 90% lower than the resistance rate against rifampin, according to the report.

The researchers predicted that PUM could have a "transformative" effect on treatment of bacterial infections, similar to that of certain analogous drugs (nucleoside analog inhibitors) on the treatment of HIV/AIDS and hepatitis C.

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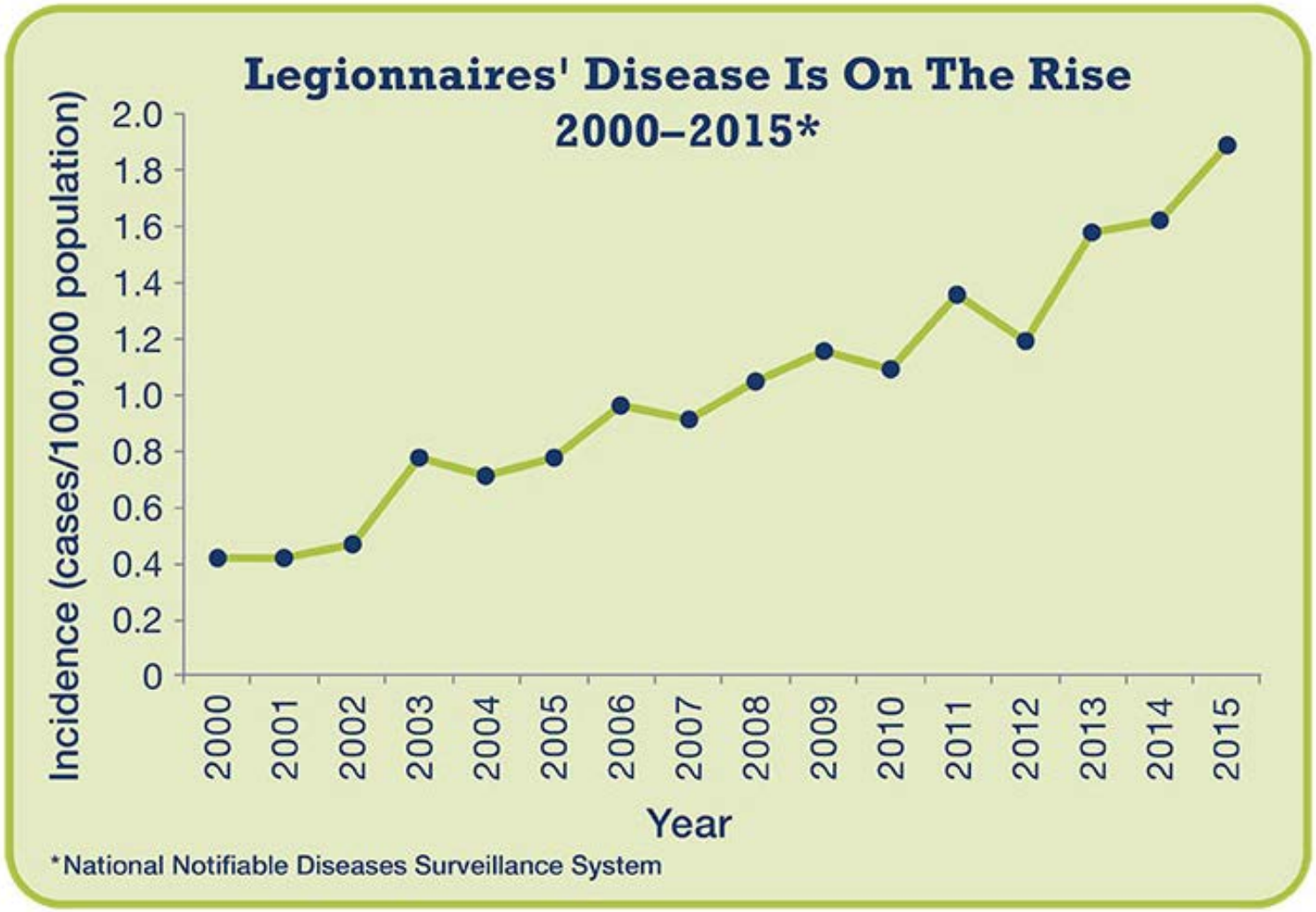
Legionnaires' Disease Is On The Rise
2000–2015*
Incidence (cases/100,000 population)
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
Year
*National Notifiable Diseases Surveillance System

University of Minnesota

CIDRAP Center for Infectious Disease Research and Policy

NYC officials probe Legionnaires' cluster in Lennox Hill

Filed Under: Legionella

Lisa Schnirring | News Editor | CIDRAP News | Jun 19, 2017

Health officials in New York City recently announced that they are investigating a cluster of Legionnaires' disease cases ln the Lennox Hill section of Manhattan.

Samuel Ioannidis / Flickr cc

Last year, the US Centers for Disease Control and Prevention (CDC) said that Legionnaires' cases have quadrupled since 2000, led by high-profile outbreaks in New York City, Illinois, and Michigan. Also, the CDC recently raised concerns about Legionnaires' cases in healthcare settings, especially long-term care facilities.

Seven illnesses, 1 fatal

In a Jun 16 statement, the New York City Department of Health and Mental Hygiene (DOHMH) said seven illnesses have been confirmed over the past 11 days. Four people are recovering in the hospital, two have been discharged, and one person in his or her 90s with underlying health conditions has died.

European Centre for Disease Prevention and Control

Epidemiological update: Legionella in Dubai

24 May 2017

Increase in travel-associated Legionnaires' disease among European travellers returning from Dubai since 1 October 2016.

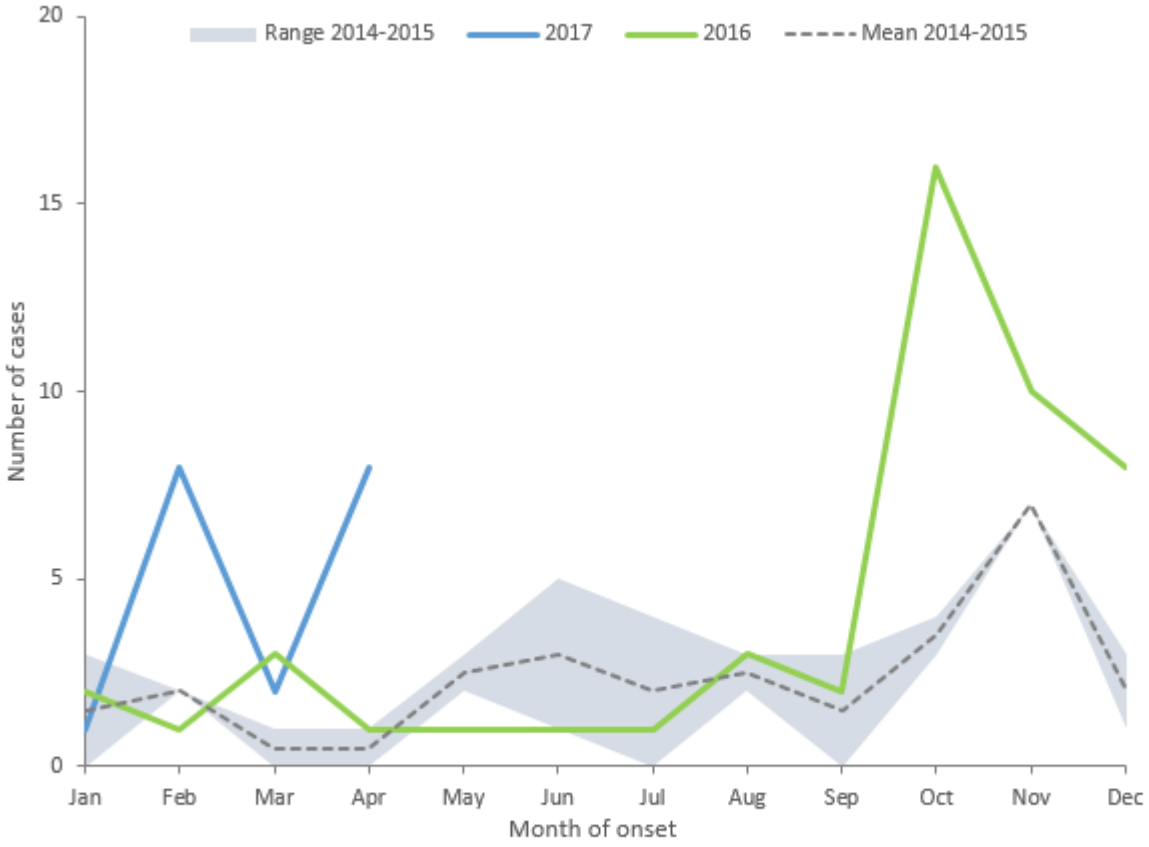

Figure 1. Distribution of TALD cases with a history of stay at commercial accommodations in Dubai (UAE) by month of onset until April 2017, EU/EFTA countries, 2014-2017, as reported by of 23 May 2017

University of Minnesota

CIDRAP Center for Infectious Disease Research and Policy

CDC: Most healthcare-acquired Legionnaires' cases could be prevented

Filed Under: Legionella; Pneumonia; Healthcare-Associated Infections

Stephanie Soucheray | News Reporter | CIDRAP News | Jun 06, 2017

A new *Vital Signs* report from the Centers for Disease Control and Prevention (CDC) said that Legionnaires' disease, a serious lung infection caused by *Legionella* bacteria, is widespread in long-term care facilities. And 75% of cases acquired in healthcare settings could be prevented with better water management.

Andrew Magill / Flickr cc

Healthcare cases more deadly

The report used data from Legionnaires' cases documented in 2015. In the general population, Legionnaire's disease kills 10% of those diagnosed; in the CDC's analysis, 25% of cases acquired in the hospital or long-term care facility were fatal.

"In healthcare facilities, people are more vulnerable and more likely to get sick if they are exposed to the pathogen," said Anne Schuchat, MD, acting director of the CDC, during a media telebriefing on the report. "Everything from shower heads, to decorative fountains, to respiratory equipment, could house *Legionella*."

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News Scan for Jun 08, 2017

Babies contract Legionnaires' disease after water birth

Arizona health officials and experts from the US Centers for Disease Control and Prevention (CDC) today described two Legionnaires' disease cases in newborns after water births.

Both occurred in Arizona during the first half of 2016, and both babies were born at home with different midwives assisting. The researchers described the cases in the latest edition of *Morbidity and Mortality Weekly Report* (*MMWR*). Details on the two cases come 2 day after CDC officials raised concerns about infections from *Legionella* bacteria in health settings.

One of the babies was delivered in a newly purchased disposable tub that had been filled right before birth with municipal tap water from a new hose. The next day the infant was hospitalized with respiratory distress and congenital heart disease. The other was delivered in a rented Jacuzzi that was filled with municipal tap water with a new hose about a week before birth. Three days after birth, the baby had a fever and was seen at the emergency department, where radiographs showed suspected pneumonia.

Lab tests in both instances were positive for *Legionella* infection, but the specimens were from different serotypes. Both babies were treated with a 10-day course of azithromycin and recovered from their infections.

Investigations afterward found gaps in infection prevention for water births, especially for the second case. The researchers noted that tap water is not sterile and that *Legionella* can grow and spread in human-made water systems, including in plumbing.

Jun 8 *MMWR* report

Jun 6 CIDRAP News story "CDC: Most healthcare-acquired Legionnaires' cases could be prevented"

UNIVERSITY OF MINNESOTA

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News Scan for Jun 14, 2017

Five charged with manslaughter in Flint water case

Michigan's attorney general charged five people, including the state's health and human services director, with manslaughter in the death of an 85-year-old man who died from Legionnaires' disease after drinking tainted water from Flint.

According to the Associated Press (AP), the charge is part of a wider criminal investigation of how Flint's water system became contaminated in 2014.

"The health crisis in Flint has created a trust crisis for Michigan government, exposing a serious lack of confidence in leaders who accept responsibility and solve problems," said state Attorney General Bill Schuette, in the AP story.

Michigan's chief medical officer was charged with—in addition to manslaughter—obstruction of justice and lying to investigators.

Flint water was found to have toxic levels of lead in 2014 and 2015, after city officials OK'd the use of Flint River water, but failed to treat it to reduce corrosion.

The AP said nearly 100 cases of Legionnaires' disease were reported in the Flint area, including 12 deaths, in 2014 and 2015. The serious lung infection is caused by inhaling contaminated water into the lungs.

Jun 14 AP story

Jun 14 State of Michigan announcement

HOT TOPICS

1. Avian Influenza
2. MERS-CoV
3. Zika

UPDATES

4. Yellow fever
5. Polio
6. Ebola
7. Tickborne diseases
   - Powassan virus, meat allergy, Lyme disease, climate change
8. Antimicrobial resistance
9. *Legionella* cases
10. Current administration appointments
11. Other

UNIVERSITY OF MINNESOTA

CIDRAP Center for Infectious Disease Research and Policy

White House budget proposal spells steep cuts for public health

Filed Under: Avian Influenza (Bird Flu); Antimicrobial Stewardship; H7N9 Avian Influenza; Public Health; Zika

Lisa Schnirring | News Editor | CIDRAP News | May 23, 2017

The Trump Administration today released full details of its proposed budget, which as expected includes steep cuts in public health programs and biomedical research and is being roundly criticized by many of the nation's health groups.

Frankieleon/Flickr cc

Members of both parties, however, have called President Trump's "Taxpayer First Budget" dead on arrival. The proposals are for fiscal year 2018, which begins on Oct 1. The full budget follows an initial blueprint that the Trump Administration released in March.

John Cornyn, R-Tex., said today in a CNN report, "Almost every president's budget proposal that I know of is basically dead on arrival." Also, Republican lawmakers are working on their own budget proposal, which is expected to be released in June.

The Washington Post

85 percent of the top science jobs in Trump's government don't even have a nominee

By Chris Mooney June 6

Presidents invariably encounter key moments where they need to rely on scientific expertise. George W. Bush faced an anthrax attack after 9/11 and Hurricane Katrina. Barack Obama faced the Gulf of Mexico oil spill and the Ebola outbreak. Now President Trump has made a momentous decision about climate change.

"When the crisis occurs, whether it's an oil well blowout or an emerging disease or a tunnel collapse at a nuclear facility, that's too late to get up to speed," said Rush Holt, the chief executive of the American Association for the Advancement of Science. "You want people who are up to speed before the crisis occurs."

Trump is facing science-focused problems and issues with a key limitation: lack of staffing. As of June 6, Trump had announced a nominee for just seven, or 15 percent, of 46 top science posts in the federal government that require Senate confirmation, according to a Post analysis.

This failure to fill top science jobs across the federal government has become even more pointed in light of his Paris choice. Recaps of Trump's decision-making process have highlighted many influences upon it, but none of them principally scientific in nature.

abc NEWS

Trump's empty administration: What's behind the high number of vacant government jobs

By JONATHAN KARL and JORDYN PHELPS · Jun 16, 2017, 11:30 AM ET

It's no secret that the Trump administration is way behind on filling key positions as hundreds of top jobs sit unfilled nearly 150 days into the president's term.

President Trump has complained that the process of confirming his nominees is "record-setting long" and recently took to Twitter to blame the Democrats for stalling the process.

But while the Senate has taken longer to confirm Trump's nominees than it took with nominees of the previous several presidents, the real culprit may be the president's chaotic and disorganized transition.

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News Scan for Jun 19, 2017

Trump's HIV/AIDs council loses 6 members

The Presidential Advisory Council on HIV/AIDS (PACHA) now has six vacancies after members resigned and one of them published an op-ed late last week in *Newsweek*, explaining their concerns that President Donald Trump "simply does not care" about HIV funding and research.

The letter was penned by Scott A. Schoettes, counsel and HIV project director at Lambda Legal. He and five others resigned from PACHA on Jun 13.

PACHA, which was founded in 1995, is responsible for making recommendations concerning HIV/AIDs to the president. While members met with presidential candidates Hilary Clinton and Bernie Sanders, they did not meet candidate Trump. Trump has also not yet appointed anyone to lead the White House Office of National AIDS Policy, which means there is no one regularly presenting information to the president on new or concerning HIV developments.

In the op-ed, Schoettes said Trump's efforts to diminish the Affordable Care Act are particularly damaging to people living with HIV/AIDs, and that his and his colleagues' expertise would be "more effective from the outside."

Jun 15 *Newsweek* op-ed

HOT TOPICS

1. Avian Influenza
2. MERS-CoV
3. Zika

UPDATES

4. Yellow fever
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HHS unveils updated pandemic flu plan

Filed Under: Pandemic Influenza

Lisa Schnirring | News Editor | CIDRAP News | Jun 16, 2017

The US Department of Health and Human Services (HHS) yesterday released a major update to its pandemic influenza plan, designed to guide preparedness activities over the next decade.

Alamosa County Public Health

The plan reflects lessons learned during the 2009 H1N1 pandemic, acknowledges preparedness gaps, and sets a broader vision that incorporates new technology and changes to healthcare delivery.

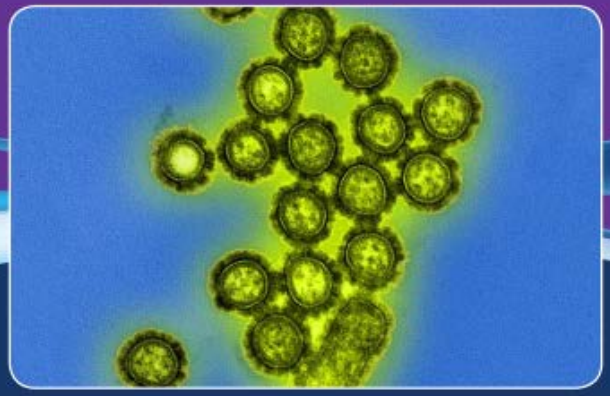
In 2005, HHS released its first pandemic influenza plan, which went through interim updates in 2006 and 2009.

The original plan was geared toward a more severe scenario and set a goal of delivering pandemic vaccine within 6 months of a pandemic declaration. The new document incorporates lessons learned from the 2009 H1N1 pandemic, which resulted in a less severe event. It also spells out the goal of having the first vaccine doses ready within 3 months of pandemic strain emergence, along with approved broad-spectrum antivirals.

HHS said though the plan mainly address pandemic influenza, officials recognize that planning for pandemic and seasonal influenza are interdependent given the constantly changing nature of flu viruses—for example, mismatches between circulating seasonal strains and vaccines create tough challenges for managing seasonal flu.

Pandemic Influenza Plan

2017 UPDATE



U.S. Department of Health and Human Services

REUTERS

HEALTH NEWS | Tue Jun 6, 2017 | 1:38pm EDT

New WHO chief vows to leave no one behind in healthcare

LONDON (Thomson Reuters Foundation) - The new head of the World Health Organization said it was unacceptable that 1 in 17 people still lack access to essential health services and said he aimed to change this under his leadership.

Tedros Adhanom Ghebreyesus said achieving universal health coverage would be a "top priority" during his five-year term as head of the Geneva-based U.N. agency.

"Globally an estimated 400 million, approximately 1 in 17 people, lack access to essential health services, that's unacceptable," Tedros, as he is known, said via video-link, joining a panel debate on Tuesday at Chatham House, a London-based think tank.

Universal health coverage is based on the principle that everyone should receive the health services they need without suffering financial hardship, according to the WHO.

Millions of people in developing countries are tipped into poverty each year because of having to pay healthcare bills.

France and Japan have mature universal health systems in place while others such as Ghana, Peru and Vietnam are in the early phases of setting them up, according to 2016 research by the Lancet medical journal.

REUTERS

WORLD NEWS | Thu Jun 8, 2017 | 7:36am EDT

Yemen cholera cases pass the 100,000 mark: WHO

By **Tom Miles** | GENEVA

The number of suspected cholera cases in war-torn Yemen has risen to more than 100,000 since an outbreak began on April 27, the World Health Organization said on Thursday.

The rapid spread of the disease through 19 of Yemen's 23 governorates highlighted a humanitarian catastrophe in Yemen after two years of civil war that has disabled most health care facilities, according to the U.N. humanitarian office.

"To date, 101,820 suspected cholera cases and 789 deaths have been reported in 19 governorates," WHO spokesman Tarik Jasarevic told Reuters.

The WHO has warned that the number of cases could hit 300,000, but the daily number of new ones declined slightly in the week to June 5 to 3,432, compared with 3,651 in the previous seven-day period.

"Yemen is in the grip of a severe cholera epidemic of an unprecedented scale," the U.N. humanitarian office said in a report published on Wednesday.

"Malnourished children and women, people living with other chronic health conditions and households that do not have enough to eat are now at greater risk of death as they face the 'triple threat' of conflict, famine and cholera," it said.

STAT

The 20 most Googled diseases

By KATE SHERIDAN @sheridan_kate / JUNE 6, 2017

To figure out if a headache or a stomach twinge is something insidious, millions of people head to a search engine first.

More than a third of all American adults have gone online to find a diagnosis, according to a 2013 Pew survey, and half of those people wound up discussing what they found with their health care provider.

Looking for a digital diagnosis can either increase or alleviate concerns about a possible illness, according to Microsoft researchers. And there's even a word that's cropped up — "cyberchondria" — to describe what happens when searching for medical information starts to become a condition unto itself.

So, what do the data say about our health anxieties — real or imagined?

Here are the top 20 conditions that people in the U.S. searched for on Google in early May, according to the company. Only English search results are included.

Google declined to rank the conditions, so we did it ourselves using Google Trends to compare the average search interest for each condition in that timeframe, indexed to "doctor."

1. Diabetes
2. Depression
3. Anxiety
4. Hemorrhoid
5. Yeast infection
6. Lupus
7. Shingles
8. Psoriasis
9. Schizophrenia
10. Lyme disease
11. HPV
12. Herpes
13. Pneumonia
14. Fibromyalgia
15. Scabies
16. Chlamydia
17. Endometriosis
18. Strep throat
19. Diverticulitis
20. Bronchitis

"A powerful book that looks at the threat of emerging diseases with clarity and realism, and offers us not just fear but plans." —**RICHARD PRESTON, author of *The Hot Zone* and *The Demon in the Freezer***

DEADLIEST ENEMY

Michael T. Osterholm, PhD, MPH
and Mark Olshaker

OUR WAR AGAINST KILLER GERMS

Questions, Comments and Discussion

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June 21st, 2017

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