



CIDRAP

Center for Infectious Disease Research and Policy
University of Minnesota

**CIDRAP Leadership Forum
September Intelligence Briefing**

June 8, 2016

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1. Vectorborne diseases

- Zika
- Yellow Fever, Chikungunya, Dengue
- Oropouche virus

2. Antibiotic resistance

3. Pandemic Preparedness

4. Influenza

- H7N9, other avian, seasonal, vaccine

5. Ebola + Lassa fever

6. WHO update

7. MERS-CoV

8. Other

- NSABB
- E coli outbreak (General Mills)

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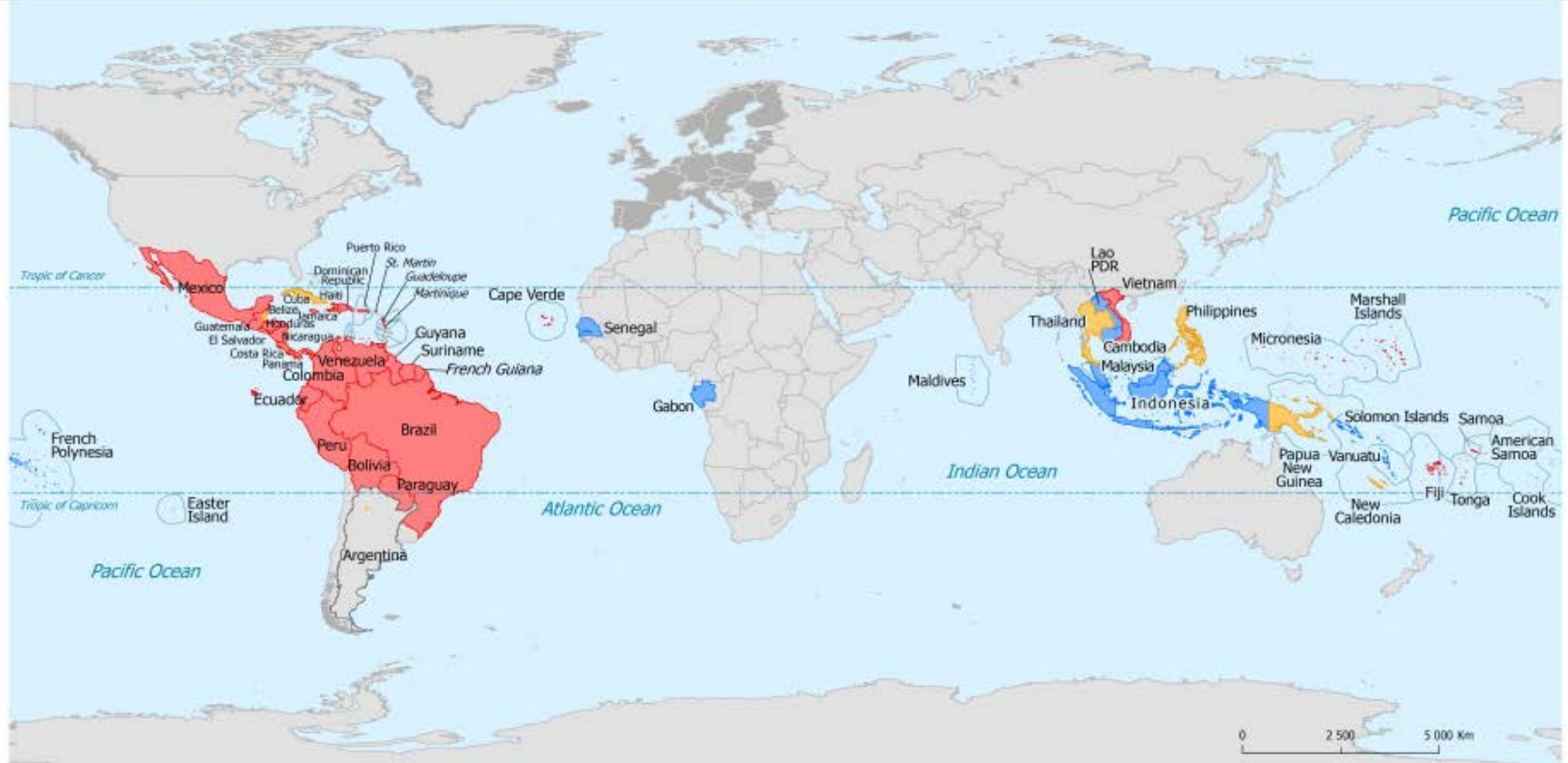
6. WHO update

7. MERS-CoV

8. Other

- NSABB
- E coli outbreak (General Mills)

Countries or territories with reported confirmed autochthonous cases of Zika virus infection in the past three months, as of 26 May 2016



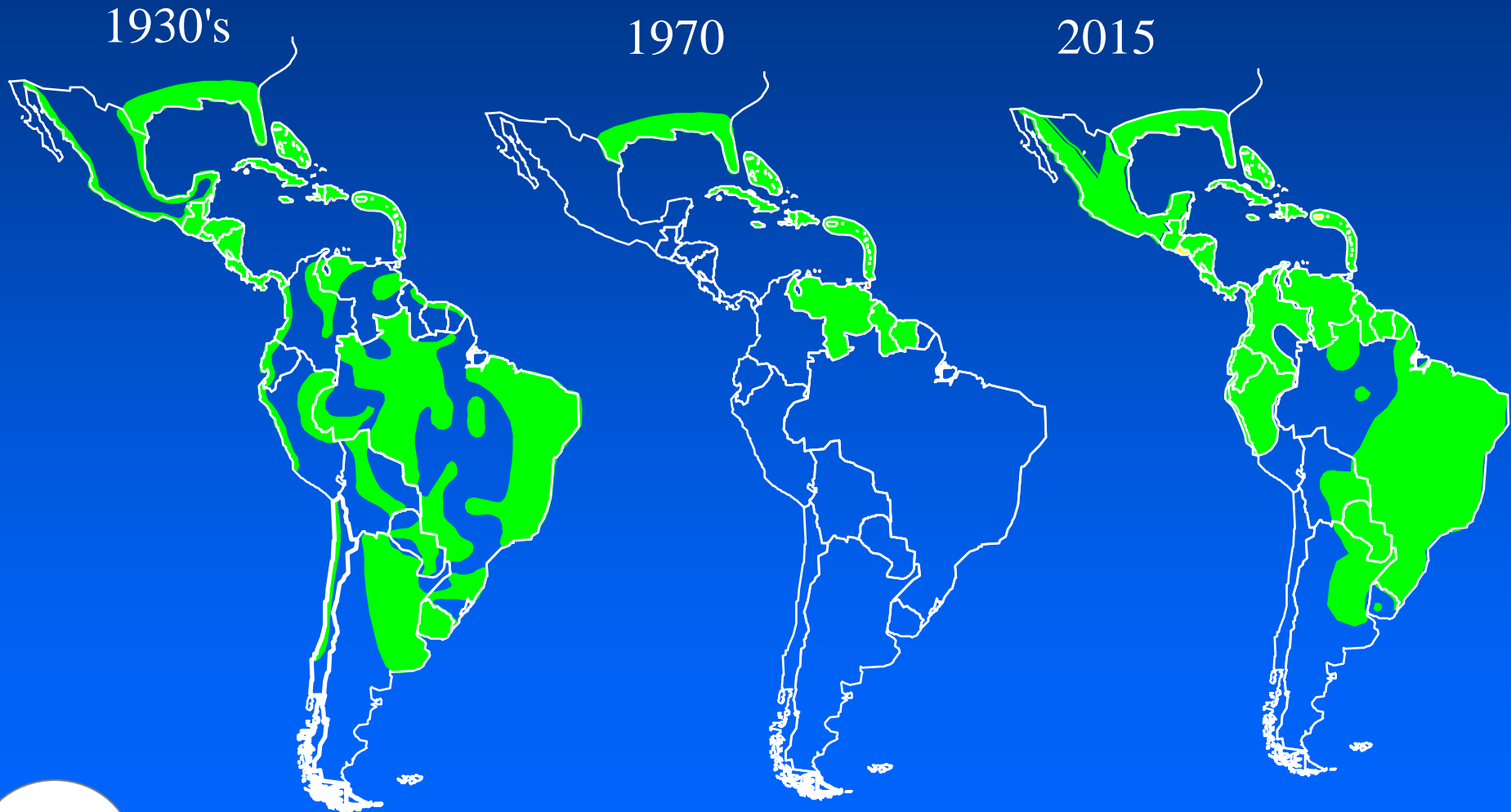
- Widespread transmission in the past three months
- Sporadic transmission in the past three months
- Past transmission (2007 – three months ago)

- EU/EEA Member States, including outermost regions
- Other countries and territories
- Maritime Exclusive Economic Zones for non-visible areas

Aedes aegypti

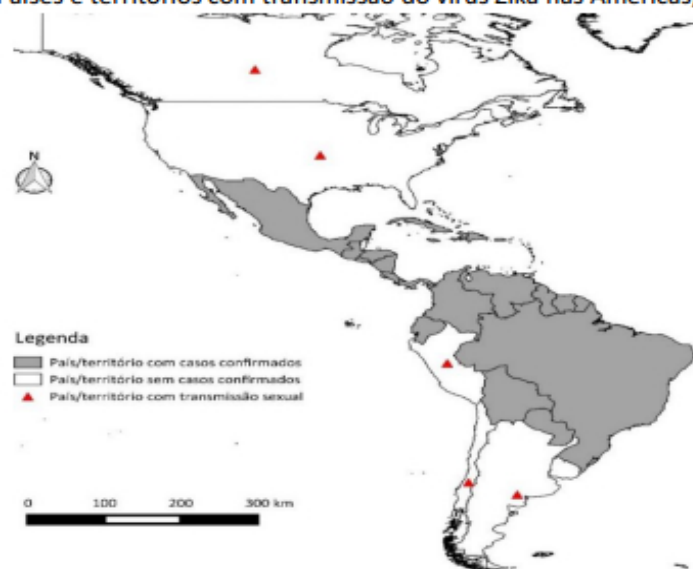


Aedes aegypti Distribution in the Americas



Adapted from Gubler, 1998

Figura 2 - Países e territórios com transmissão do vírus Zika nas Américas, 2015-2016.



Fonte: Organização Pan-Americana da Saúde/Organização Mundial da Saúde. Dados atualizados em 02/06/2016.
http://www.paho.org/hq/index.php?option=com_content&view=article&id=11585&Itemid=41688&lang=en
http://apps.who.int/iris/bitstream/10665/207281/1/zikasitrep_26May2016_eng.pdf?ua=1

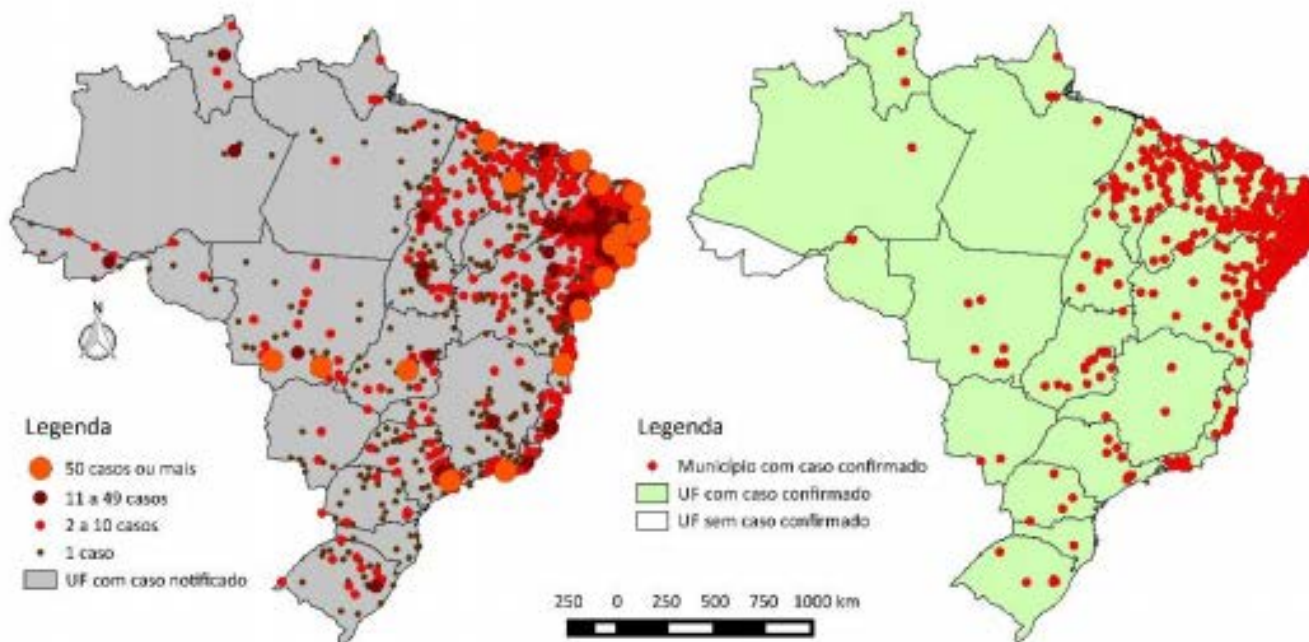
Países com transmissão vetorial autóctone:

- | | | |
|-----------------|------------------------------|--------------------------------------|
| 1. Argentina | 14. Equador | 27. Panamá |
| 2. Aruba | 15. Granada | 28. Paraguai |
| 3. Barbados | 16. Guadalupe | 29. Peru |
| 4. Belize | 17. Guatemala | 30. Porto Rico |
| 5. Bolívia | 18. Guiana | 31. República Dominicana |
| 6. Bonaire | 19. Guiana Francesa | 32. Saint Barthélemy |
| 7. Brasil | 20. Haiti | 33. Saint Lucia |
| 8. Colômbia | 21. Honduras | 34. Saint Martin |
| 9. Costa Rica | 22. Ilhas Virgens Americanas | 35. Saint Maarten |
| 10. Cuba | 23. Jamaica | 36. Saint Vincent and the Grenadines |
| 11. Curaçao | 24. Martinica | 37. Suriname |
| 12. Dominica | 25. México | 38. Trinidad e Tobago |
| 13. El Salvador | 26. Nicarágua | 39. Venezuela |

Figura 1 – Distribuição espacial com casos notificados e confirmados de microcefalia e/ou alteração do SNC, Brasil, até a SE 22/2016.

CASOS NOTIFICADOS (n = 1.453 municípios)

CASOS CONFIRMADOS (n = 556 municípios)



Fonte: Secretarias de Saúde dos Estados e Distrito Federal (dados atualizados até 04/06/2016).

HEALTH

Colombia Confirms More Birth Defects Linked to Zika

By EZRA KAPLAN and DONALD G. McNEIL Jr. APRIL 26, 2016

BOGOTÁ, Colombia — Colombian health officials said on Tuesday that they had confirmed two more cases of babies born with brain damage to mothers who had Zika during [pregnancy](#), but said overall cases of the mosquito-borne virus were decreasing in the country.

“We are absolutely certain that Zika is on the decrease in Colombia,” said Fernando Ruiz, Colombia’s vice minister of Health, during a briefing here.

At the briefing, officials said they had now confirmed a total of four cases of [microcephaly](#), a condition in which babies are born with unusually small heads and damaged brains, and that they expect to see many more over the next three months as women who contracted Zika during an outbreak this year begin to give birth. They said they were studying 22 more newborns with microcephaly to determine if Zika was the cause. They also announced a total of 304 cases of Guillain-Barré syndrome — a condition that can cause [paralysis](#), usually temporary — that are suspected to have been caused by Zika.





Peru finds local Zika cases; report supports complication links

Filed Under: [Dengue](#); [Zika](#)

[Lisa Schnirring](#) | News Editor | [CIDRAP News](#) | May 03, 2016

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Among key developments in the Zika virus outbreak, Peru's health ministry yesterday reported its first local cases, and a new analysis today from a Brazilian research team revealed a strong temporal correlation between the outbreak and later spikes in Guillain-Barre syndrome (GBS) and suspected microcephaly.

In other developments today, two top health officials briefed the media on outbreak and vaccine developments at the Pan American Health Organization's (PAHO's) Washington, DC, headquarters, where a conference on Zika risk communication is under way.






About ESTIMATED range of *Aedes aegypti* and *Aedes albopictus* in the United States, 2016 Maps




 *Aedes aegypti*




 *Aedes albopictus*

Travel Volume to the United States from Countries and U.S. Territories with Local Zika Virus Transmission

MAY 31, 2016 · RESEARCH ARTICLE

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Bradley Nelson Stephanie Morrison Heather Joseph Abbey Wojno R. Ryan Lash Yoni Haber
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■ ABSTRACT

Introduction: Air, land, and sea transportation can facilitate rapid spread of infectious diseases. In May 2015 the Pan American Health Organization (PAHO) issued an alert regarding the first confirmed Zika virus infection in Brazil. As of March 8, 2016, the U.S. Centers for Disease Control and Prevention (CDC) had issued travel notices for 33 countries and 3 U.S. territories with local Zika virus transmission.

Methods: Using data from five separate datasets from 2014 and 2015, we estimated the annual number of passenger journeys by air and land border crossings to the United States from the 33 countries and 3 U.S. territories listed in the CDC's Zika travel notices as of March 8, 2016. We also estimated the annual number of passenger journeys originating in and returning to the United States (primarily on cruises) with visits to seaports in areas with local Zika virus transmission. Because of the adverse pregnancy and birth outcomes that have been associated with Zika virus disease, the number of passenger journeys completed by women of childbearing age and pregnant women was also estimated.



New estimate puts Zika microcephaly risk at 1% to 13%

Filed Under: [Zika](#)

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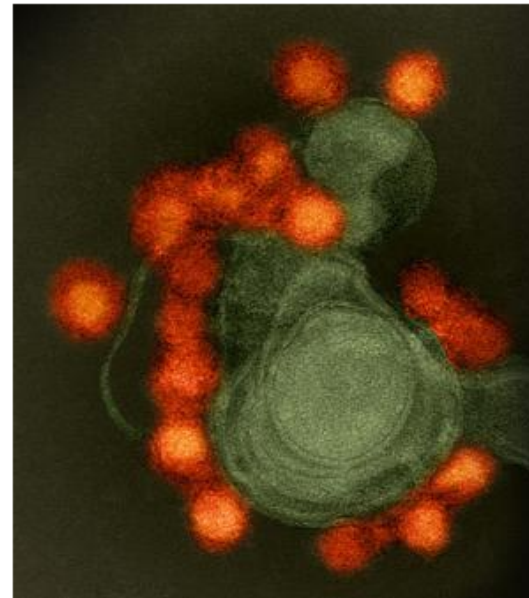
In an effort to hone in on a more precise risk of microcephaly in pregnant women infected with Zika virus, researchers from the US Centers for Disease Control and Prevention (CDC) yesterday estimated it at 1% to 13% in those sickened during their first trimester.

Meanwhile, the World Health Organization (WHO) said in its weekly Zika situation report that no new countries have reported local Zika spread since its last update, adding that one more country—Spain—has reported a microcephaly case related to the virus. Spain had reported the case on May 6, and today's WHO report said the source of the infection was likely travel to Colombia.

Overall, the WHO said it sees no decline in the outbreak, though drop-offs have been reported in some countries or parts of countries.

Risk estimate based on Brazil data

Earlier estimates of the microcephaly risk have varied widely, from 1% based on information from French



NIAID

Electron microscope image of Zika virus isolated from a microcephaly case.



WHO: Array of Zika birth defects equals new syndrome

Filed Under: [Zika](#)

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Because of mounting reports that maternal Zika virus infections are linked to a wider range of birth defects than previously thought, the World Health Organization (WHO) today announced that the collective effects represent a new congenital syndrome, with efforts under way to define it.

Health officials have been warning that babies born with Zika virus complications might face a host of still-unknown complications, and steps unveiled today signify the first major effort to define them. A team from several WHO departments laid out the case for the new syndrome and described the process for defining it in an editorial in the *Bulletin of the World Health Organization*.

In another scientific development related to the outbreak, South Korean researchers described the first detection of live virus in a patient's semen. Meanwhile, tracking systems revealed more Zika infections in Puerto Rico and in US travelers, including additional cases in pregnant women.



Agencia Brasilia / Flickr cc



More eye problems found in babies with Zika-linked microcephaly

Filed Under: [Zika](#)

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The type of eye problems in babies born with Zika-related microcephaly is more extensive than originally thought, according to findings from three Brazilian babies who were born at the end of 2015.

In other Zika developments, *Consumer Reports* recently put insect repellents to the test, noting the ones that performed well against *Aedes* mosquitoes, which can transmit the virus, and warning that some plant-based products performed poorly, especially against that species.



PAHO

Eye problems and microcephaly

The three babies—all boys—were born to mothers who had suspected Zika infections in their first pregnancy trimesters. Researchers from Brazil and Stanford University published their findings from the infants' eye exams today in an early online edition of *Ophthalmology*.

An earlier report on 27 Brazilian babies born with Zika-related birth defects detailed a constellation of eye problems, which is reflected in current guidelines for clinical work-up and management of affected infants.

CDC updates Zika guidance to include urine testing

Filed Under: [Zika](#)

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Based on preliminary findings that Zika virus is found at higher levels and for a longer time in urine than in blood, the US Centers for Disease Control and Prevention (CDC) today updated its testing guidance to include urine testing, offering clinicians a longer period for testing during the acute illness phase.

The CDC published its interim guidance for Zika testing in urine in an early online edition of *Morbidity and Mortality Weekly Report (MMWR)*, alongside a study that compared test results of urine, blood, and saliva specimens, finding that urine might be the preferred specimen for testing.

Zika reverse-transcriptase polymerase chain reaction (RT-PCR) tests should still be performed on blood samples collected less than 7 days after illness onset, the CDC said.

Guidance details

Based on new data, the CDC recommends that RT-PCR tests be performed on urine collected within 14 days of illness onset in patients with suspected infections. It added that urine testing should be



ElMiguelacho / iStock

Interim Guidance for Interpretation of Zika Virus Antibody Test Results

Ingrid B. Rabe, MBChB¹; J. Erin Staples, MD, PhD¹; Julie Villanueva, PhD¹; Kimberly B. Hummel, PhD¹; Jeffrey A. Johnson, PhD¹; Laura Rose, MTS¹; Susan Hills, MBBS¹; Annemarie Wasley, ScD¹; Marc Fischer, MD¹; Ann M. Powers, PhD¹

Zika virus is a single-stranded RNA virus in the genus *Flavivirus* and is closely related to dengue, West Nile, Japanese encephalitis, and yellow fever viruses (1,2). Among flaviviruses, Zika and dengue virus share similar symptoms of infection, transmission cycles, and geographic distribution. Diagnostic testing for Zika virus infection can be accomplished using both molecular and serologic methods. For persons with suspected Zika virus disease, a positive real-time reverse transcription–polymerase chain reaction (rRT-PCR) result confirms Zika virus infection, but a negative rRT-PCR result does not exclude infection (3–7). In these cases, immunoglobulin (Ig) M and neutralizing antibody testing can identify additional recent Zika virus infections (6,7). However, Zika virus antibody test results can be difficult to interpret because of cross-reactivity with other flaviviruses, which can preclude identification of the specific infecting virus, especially when the person previously was infected with or vaccinated against a related flavivirus (8). This is important because the results of Zika and dengue virus testing will guide clinical management. Pregnant women with laboratory evidence of Zika virus infection should be evaluated and managed for possible adverse pregnancy outcomes and be reported to the U.S. Zika Pregnancy Registry or the Puerto Rico Zika Active Pregnancy Surveillance System for clinical follow-up (9,10). All patients with clinically suspected dengue should have proper management to reduce the risk for hemorrhage and shock (11). If serologic testing indicates recent flavivirus infection that could be caused by either Zika or dengue virus, patients should be clinically managed for both infections because they might have been infected with either virus.

Zika Virus Infection and Immune Response

Most Zika virus infections are asymptomatic (12). Viremia is expected to occur from several days before illness onset until a week after illness onset (6,13,14). Zika virus–specific

IgM antibodies develop during the first week of illness (5,6). Data on duration of IgM antibody persistence following Zika virus infection are limited. However, IgM antibodies against West Nile virus, a closely related flavivirus, have been detected in asymptomatic, infected blood donors for at least 3 months after their viremic donation, and almost half of tested patients with West Nile virus neuroinvasive disease had detectable serum IgM antibodies >1 year after illness onset (15,16). Neutralizing antibodies to Zika virus develop shortly after IgM antibodies and consist primarily of IgG antibodies. Neutralizing antibodies are expected to persist for many years after flavivirus infections and are believed to confer prolonged, possibly lifelong, immunity (17–19). In persons previously infected with a flavivirus or vaccinated against yellow fever, Japanese encephalitis, or tick-borne encephalitis, subsequent exposure to a related flavivirus can result in a rapid and brisk rise in neutralizing antibodies against multiple flaviviruses (20). In addition, the neutralizing antibody titer against a flavivirus to which the person previously was exposed might be higher than the titer against the virus with which they were most recently infected (20). For example, a person who was previously infected with dengue virus or who received yellow fever vaccine might respond with high levels of neutralizing antibodies against those viruses when later infected with Zika or West Nile viruses. When performing serologic testing, the presence of these neutralizing antibodies against multiple flaviviruses can preclude conclusive determination of which flavivirus was responsible for the recent infection.

Zika Virus Antibody Testing

An enzyme-linked immunosorbent assay (ELISA) can be used to detect anti-Zika virus IgM antibodies in serum or cerebrospinal fluid; however, the Zika virus IgM ELISA can provide false-positive results because of cross-reacting IgM antibodies against related flaviviruses or nonspecific reactivity. The plaque





WHO gives Zika advice to Olympics-bound travelers

Filed Under: [Zika](#)

Lisa Schnirring | News Editor | CIDRAP News | May 12, 2016

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With the Olympic and Paralympic games in Rio de Janeiro just months away, the World Health Organization (WHO) and the Pan American Health Organization (PAHO) today released a set of steps that athletes and visitors can take to protect themselves from Zika virus.

In other developments, Chinese researchers reported additional findings from infected fetal mice and the WHO and US Centers for Disease Control and Prevention (CDC) provided big-picture views with weekly updates.

Olympics advice

In the Olympics advice, WHO and PAHO still urge pregnant women to avoid areas of active Zika transmission, which include the host city of Rio de Janeiro. Though the games will take place during Brazil's winter season when the mosquitoes that carry Zika and other viruses are less active, the agencies recommend that visitors follow WHO and home-country travel advice and consult a health worker before departing.



photojournalis / iStock

W.H.O. Dismisses Call to Move Olympics Over Zika Virus in Brazil

THE ASSOCIATED PRESS MAY 28, 2016

BERLIN — The [World Health Organization](#) said Saturday that there was no public health justification for postponing or [canceling the Summer Olympics](#) in Rio de Janeiro because of the [Zika outbreak in Brazil](#).

On Friday, 150 health experts issued an open letter to the health agency calling for the Olympic Games to be delayed or moved in the name of public health. The letter cited recent scientific evidence that the Zika virus causes severe birth defects, most notably babies born with abnormally small heads. In adults, it can cause neurological problems, including a rare syndrome that can be fatal or result in temporary paralysis.

The experts also noted that despite increased efforts to wipe out the mosquitoes that spread Zika, the number of infections in Rio de Janeiro had gone up rather than down.

The experts came from more than two dozen countries in fields like public health, bioethics and pediatrics, and included a former White House science adviser, Dr. Philip Rubin.

The W.H.O., however, said in its statement that “based on current assessment, canceling or changing the location of the [2016 Olympics](#) will not significantly alter the international spread of Zika virus.”

WHO public health advice regarding the Olympics and Zika virus

News release

28 MAY 2016 | GENEVA - Based on current assessment, cancelling or changing the location of the 2016 Olympics will not significantly alter the international spread of Zika virus. Brazil is 1 of almost 60 countries and territories which to date report continuing transmission of Zika by mosquitoes. People continue to travel between these countries and territories for a variety of reasons. The best way to reduce risk of disease is to follow public health travel advice.

WHO advises pregnant women not to travel to areas with ongoing Zika virus transmission. This includes Rio de Janeiro. Pregnant women's sex partners returning from areas with circulating virus should be counselled to practise safer sex or abstain throughout the pregnancy.

Anyone considering travel to the Olympics should:

- Follow the travel advice provided by their countries' health authorities, and consult a health worker before travelling.
- Whenever possible, during the day, protect themselves from mosquito bites by using insect repellents and by wearing clothing – preferably light-coloured – that covers as much of the body as possible.
- Practise safer sex (for example, use condoms correctly and consistently) or abstain from sex during their stay and for at least 4 weeks after their return, particularly if they have had or are experiencing symptoms of Zika virus.
- Choose air-conditioned accommodation (where windows and doors are usually kept closed to prevent the cool air from escaping, and mosquitoes cannot enter the rooms).
- Avoid visiting areas in cities and towns with no piped water or poor sanitation (ideal breeding grounds of mosquitoes), where the risk of being bitten by mosquitoes is higher.



WHO committee to weigh Olympic Zika threat

Filed Under: [Zika](#)

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The head of the World Health Organization (WHO) has asked its Zika virus emergency committee to weigh whether the Summer Olympics in Rio de Janeiro should be held according to schedule, based on continued concerns about the threat of the virus to athletes and visitors.

In scientific developments, researchers found more evidence of Zika virus's ability to infect neural progenitor cells, where it has the capacity to evade detection and replicate for weeks, while another team found early clues about how the body defends itself against the virus.

Another look at Olympics risks

Though the WHO on May 28 issued a statement rejecting a call to move or postpone the Olympics, Director-General Margaret Chan, MD, MPH, signaled in a Jun 1 letter to Sen Jeanne Shaheen, D-N.H., that she would have the Zika emergency committee examine the issue, the Associated Press (AP) reported on Jun 4.



Mark_JH / Flickr cc

News Scan for Jun 07, 2016

WHO Zika emergency committee to meet June 14

The World Health Organization (WHO) said today that its Zika emergency committee will meet for the third time on Jun 14, according to a notice e-mailed to journalists. It said experts will review the implementation and impact of the recommendations it made as part of their declaration of a Public Health Emergency of International Concern (PHEIC).

Representatives from affected countries will address the group, and experts will present the latest information on the disease and its complications, with an eye toward weighing whether the situation still warrants a PHEIC and if any changes to the recommendations are needed.

The 12-member group will meet by teleconference, and the WHO said results will be shared with the media shortly afterward.

According to earlier reports, one of the topics the emergency committee will consider is the upcoming Summer Olympic Games in Rio de Janeiro, Brazil. The WHO has rejected calls to recommend postponing or moving the games, but a recent letter from US Sen Jeanne Shaheen, D-N.H., to WHO Director-General Margaret Chan, MD, MPH, prompted a reply from Chan that the emergency committee would look at the issue.

Today's media note didn't mention the Olympics, but WHO spokesman Christian Lindmeier said at a news briefing that the committee would look at evidence regarding the Olympics and review related travel guidance, Reuters reported today.



Zika data point to sexual transmission in women

Filed Under: [Zika](#)

Lisa Schnirring | News Editor | CIDRAP News | May 27, 2016



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Women in the sexually active age-group are overwhelmingly more likely than men to be infected with Zika virus, with sexual transmission the most likely cause, according to a new report based on data from the city of Rio de Janeiro from Brazilian researchers.



In other developments, scientists from Emory University today revealed that Zika can infect two types of placental cells, which might explain how the virus passes from mothers to their babies.

Threat to pregnant women

The team set out to see if there were any age-related patterns for Zika infections and of sexual transmission in disease incidence using data from the city's health secretariat. In comparison, they also looked at dengue levels by age for the same Zika-active period in 2016, and for 2013 before Zika virus was thought to have reached Rio. They published their findings yesterday in *bioRxiv*.



Reporting change, rising cases vault US Zika pregnancy cases to 279

Filed Under: [Zika](#)

Lisa Schnirring | News Editor | CIDRAP News | May 20, 2016



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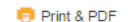
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In announcing a change today to the way it reports the number of pregnant women with Zika virus, namely, folding in those with lab-confirmed asymptomatic infections, the US Centers for Disease Control and Prevention (CDC) said it is currently monitoring 279 cases.

The number is up sharply from 112 reported the week before, when only women with Zika symptoms or pregnancy complications were included in the totals. Today's new total is current as of May 12 and includes 122 women in Puerto Rico and other US territories experiencing local Zika transmission and 157 from US states who were infected outside of the mainland.




EmiliaU/ iStock

Zika found in wild mosquitoes; US reviews Wolbachia use

Filed Under: [Zika](#)


Lisa Schnirring | News Editor | CIDRAP News | May 24, 2016

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In Zika-related mosquito developments, Brazilian researchers announced yesterday the first virus detection in wild-caught *Aedes aegypti* mosquitoes, and regulatory officials in the United States are reviewing a company's application to market *Wolbachia* bacteria as a pesticide.

Meanwhile, the Pan American Health Organization (PAHO) posted a new document offering guidance from experts on ethical issues surrounding the outbreak, and health officials in Colombia and Costa Rica reported on microcephaly cases.

Infected urban mosquitoes

In a statement in Portuguese on its Web site, the Fiocruz Institute said over the past 10 months researchers have been collecting mosquitoes in locations where Zika infections have been identified in Rio de Janeiro state.



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House approves \$622 million Zika funding package

Filed Under: [Zika](#)

Lisa Schnirring | News Editor | CIDRAP News | May 19, 2016

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The US House of Representatives yesterday approved a \$622.1 million Zika funding bill designed to support key outbreak activities through September, much less than the \$1.9 billion emergency measure President Obama asked Congress for in February.

In other developments, new efforts are under way in the Americas to teach people about Zika virus and how to help curb transmission, including one featuring Cartoon Network superheroes that targets kids.

House funding taps Ebola money

The House bill passed by a vote of 241 to 184, coming 1 day after the Senate approved a compromise bill of \$1.1 billion intended to fund Zika response efforts until September 2017. President Obama has signaled that he would veto the House's version of the bill, because it doesn't include enough support and diverts money away from important Ebola response efforts.

In a statement after the vote yesterday, House Speaker Rep. Paul Ryan, R-Wisc., said the House's funding plan helps protect the American people in the most direct way possible and provides money for critical priorities such as mosquito control and vaccine development. He added that combined with the Obama Administration's earlier funding shift—most of it from existing Ebola money—the total funding with the House bill would total \$1.2 billion.



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Local health departments brace for funding loss amid Zika standoff

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COMMENTS 206



Getty Images

By Sarah Ferris - 05/29/16 04:51 PM EDT

Health departments in all 50 states are scrambling to make up for the combined \$45 million they will lose this summer if Congress fails to address a massive federal funding shortfall fighting the Zika virus.

With Congress locked in a billion-dollar stalemate over Zika funding, the Centers for Disease Control and Prevention (CDC) will be forced to eliminate emergency public health funding from as many as 62 health districts starting in July.

The cuts would affect the nation's largest cities and counties – Washington, D.C., Chicago, Los Angeles County and New York City – as well as already cash-strapped rural districts.

HEALTH

The world is alarmed by the Zika outbreak. No one is paying to deal with it

By HELEN BRANSWELL [@HelenBranswell](#)

JUNE 7, 2016

Health officials trying to raise money to respond to the [Zika](#) outbreak say that their appeals are largely falling flat — and that the effort is shaping up as one of the most challenging hat-passing exercises they have ever seen.

Congress, which has been in a protracted partisan fight over Zika funding, seems certain to give the Obama administration [far less than it requested](#). The World Health Organization has received a [measly 13 percent](#) of the nearly \$18 million it requested from donors.

And other United Nations agencies — seeking money to help with mosquito control or promote access to condoms in affected countries — aren't seeing fat checks ripping out of checkbooks.



Race to fast-track Zika trials as 12 groups seek vaccine

LONDON | BY BEN HIRSCHLER

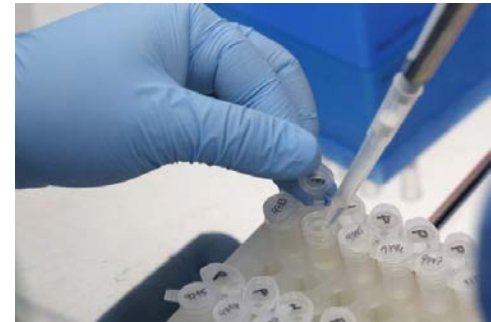
At least 12 groups are now working to develop a Zika vaccine and health authorities said on Monday they were working to ensure development proceeded as rapidly as possible.

The World Health Organization said it was important to establish speedy regulatory pathways, although all the vaccines remained in early-stage development and licensed products would take "a few years" to reach the market.

With no approved Zika vaccines or medicines and none even undergoing clinical studies, scientists and drugmakers are on the starting-block in fighting the mosquito-borne disease suspected of causing a spike in birth defects in Brazil.

However, Zika is similar to dengue, yellow fever and West Nile virus, for which vaccines exist or are being developed, and the hope is to try similar approaches against the latest hazard.

The London-based European Medicines Agency (EMA) said it had established an expert task force on Zika to advise companies working on vaccines and medicines, mirroring similar action during Ebola and pandemic flu outbreak in 2009.





Companies announce new Zika vaccine initiatives

Filed Under: [Zika](#)

Jim Wappes | Editorial Director | CIDRAP News | Feb 02, 2016

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Two vaccine makers, Sanofi Pasteur and NewLink Genetics, today announced efforts to develop vaccines against Zika virus infection that will springboard off existing technologies.

In related news, Honduras yesterday declared a national emergency over an expanding Zika virus infection outbreak, while Thailand confirmed its first locally acquired case.

Building on flavivirus vaccine experience

Sanofi Pasteur, the vaccines division of Sanofi, based in Lyon, France, already has licensed vaccines for dengue, yellow fever, and Japanese encephalitis, which, like Zika virus (ZIKV) infection, are mosquito-borne diseases caused by flaviviruses, the company said in a news release.

Sanofi officials emphasized the company's dengue vaccine, which was approved for use in Mexico and Brazil in December. "Sanofi Pasteur's expertise and established R&D and industrial infrastructure for the newly licensed vaccine for dengue, Dengvaxia, can be rapidly leveraged to help understand the spread of ZIKV and potentially speed identification of a vaccine candidate for further clinical development," the company said in the release.



zilli / iStock



Zika



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[Zika virus \(CDC landing page\)](#)

[Latest Zika situation reports \(WHO\)](#)

[Zika virus infections and complications called Public Health Emergency of International Concern \(WHO, Feb 1, 2016\)](#)

[Zika virus disease, frequently asked questions about Zika virus \(WHO Emergencies Preparedness, Response\)](#)

[Zika virus infection \(PAHO/WHO landing page\)](#)



Maps

[2016 Zika outbreak timeline map \(HealthMap\)](#)

[Pacific Disaster Center maps \(updated periodically\)](#)

[Maps predict possible Zika hot spots \(USA Today, Apr 28, 2016\)](#)

[Mapping global environmental suitability for Zika virus \(eLife study, Apr 19, 2016\)](#)

[Pregnant? The CDC says these are the Zika-affected areas to avoid \(STAT map, Feb 2, 2016\)](#)

[Here are all the known cases of Zika virus in the world \(Popular Science map, Feb 4, 2016\)](#)

1. Vectorborne diseases

- Zika
- Yellow Fever, Chikungunya, Dengue
- Oropouche virus

2. Antibiotic resistance

3. Pandemic Preparedness

4. Influenza

- H7N9, other avian, seasonal, vaccine

5. Ebola + Lassa fever

6. WHO update

7. MERS-CoV

8. Other

- NSABB
- E coli outbreak (General Mills)



News Scan for Feb 12, 2016

Yellow fever outbreak in Angola triggers vaccination campaign

A yellow fever outbreak in Angola that began in early December with a few cases in one province has now spread to five more provinces, totaling 164 suspected cases and 37 deaths as of Feb 8, the World Health Organization (WHO) said today in a statement.

The outbreak began in the northwestern province of Luanda, where 138 cases have been reported. Other affected provinces are Cabinda, Cuanza Sul, Huambo, Huila, and Uige.

The WHO said Luanda has a high density of *Aedes aegypti* mosquitoes, the main yellow fever vector, posing a high risk of spread to other areas, especially given the high proportion of susceptible people. The only vaccinated people are those with international vaccination cards and children who have been immunized since 2008. The WHO said an immunization campaign was launched on Feb 2, targeting about 1.5 million people in the worst-affected part of Luanda.

The WHO said Angola has activated a task force to respond to the outbreak, that it has deployed three experts to help, and that suspected cases are being tested to rule out other illnesses and cross-reactions with yellow fever.

Elsewhere in Africa, yellow fever has been circulating in Mali and Ghana since the last half of 2015.

Feb 12 WHO statement



News Scan for Apr 06, 2016

WHO details imported yellow fever cases in China and Kenya

In developments reflecting the continuing global impact of Angola's yellow fever outbreak, the WHO today reported eight more imported cases in China and the first two imported cases in Kenya.

At the end of March China reported its first imported case from Angola, and today's WHO report notes eight more from three provinces: Fujian, Jiangsu, and Sichuan. Ages range from 36 to 53, and five of the patients are men. Of five people with known immunization status, none had been vaccinated against yellow fever before traveling to Angola. One was vaccinated while in Angola but was probably infected before developing protection, the agency said.

In a separate report, the WHO said Kenya notified it of two imported cases between Mar 15 and Mar 18. Both involve men in their 30s who had been working in Luanda, Angola. Both traveled back to Kenya while they were sick, and neither had been vaccinated against yellow fever before arriving in Angola.

One of the patients died from multi-organ failure, and the other has recovered and has been discharged from the hospital, the WHO said.

[Apr 6 WHO report on yellow fever in China](#)

[Apr 6 WHO report on yellow fever in Kenya](#)



Yellow fever expands in Angola; vaccination set for DRC, Uganda

Filed Under: [Yellow Fever](#)

Lisa Schnirring | News Editor | [CIDRAP News](#) | May 13, 2016



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Angola's yellow fever outbreak remains highly concerning, with the disease still maintaining a foothold in hard-hit, highly populated Luanda district, despite the fact that more than 7 million people have now been vaccinated, the World Health Organization (WHO) said yesterday in its weekly update on the situation.

Local yellow fever transmission is under way in six of Angola's other highly populated provinces, with the mosquito-borne disease spreading to new provinces and districts, according to the WHO. Weak surveillance systems are struggling with identifying newly affected areas, especially in remote locations such as Cabinda province.

A related outbreak in urban areas of neighboring Democratic Republic of Congo (DRC) underscores the threat of international spread, especially to Namibia and Zambia where borders are porous and populations aren't usually vaccinated against yellow fever, the WHO said.

New developments since last week's report include confirmed cases and local spread in Angola's Namibe province, which borders Namibia. At the end of April, Namibia reported a suspected yellow fever case imported from Angola, but the patient tested negative for the disease on May 6. Namibia has requested 450,000 doses of yellow fever vaccine to use for travelers and refugees.



Albert Gonzalez Farran, UNAMID / Flickr cc



News Scan for May 17, 2016

WHO convenes emergency committee to address yellow fever

The WHO announced today that it is convening an emergency committee under the International Health Regulations (IHR) on May 19 to address the global threat of Africa's yellow fever outbreak. In an e-mail to journalists, it said the experts will meet by teleconference, adding that it will brief the media afterward on the outcome of the meeting.

One of the topics emergency committees discuss as part of the IHR is whether the developments warrant a public health emergency of international concern (PHEIC). The emergency committee meetings also help draw international attention to emerging global health threats and allow experts to make temporary recommendations.

Angola's large outbreak has triggered an additional outbreak in the Democratic Republic of Congo, and health officials are very concerned that the disease could spread to other vulnerable African nations. The outbreak in Angola has been linked to several exported cases, including to China. Also, Uganda is experiencing an outbreak not linked to the event in Angola.

May 13 CIDRAP News story "[Yellow fever expands in Angola; vaccination set for DRC, Uganda](#)"



WHO says yellow fever 'serious concern' but not emergency

Filed Under: **Yellow Fever**

Lisa Schnirring | News Editor | CIDRAP News | May 19, 2016



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Urban yellow fever outbreaks in Angola and the Democratic Republic of Congo (DRC) are a serious public health concern and warrant intensive response steps, but they don't constitute a public health emergency of international concern, a committee convened by the World Health Organization (WHO) said today.

The focus of yellow fever activity in Africa has shifted from West Africa, where targeted health initiatives and routine vaccination have dramatically dropped illness numbers, to central and East Africa. Explosive spread of the disease in Angola's highly populated Luanda district spilled over to DRC, where imported cases and a some local spread pose a similar threat to Kinshasa, another large urban area that is ripe for explosive spread.

Vaccine shortage

At a media telebriefing today at the conclusion of the emergency meeting, Bruce Aylward, MD, MPH, the WHO's executive director for outbreaks and health emergencies, said the outbreaks put a strain on the global yellow fever vaccine stockpile, which was another reason the WHO convened the group.



dk_photos / iStock



News Scan for May 24, 2016

Mass yellow fever vaccination campaign launches in Uganda

Authorities in Uganda launched a large yellow fever vaccination campaign in several districts last weekend, the World Health Organization's (WHO's) African region said yesterday.

Immunization teams targeted almost 700,000 people in Masaka, Rukungiri, and Kalangala districts, with efforts in the first two beginning May 21 and those in Kalangala ramping up now, according to a news release. All people aged 6 months and older were targeted to prevent spread of the mosquito-borne disease in the country, with a goal of reaching 90% of the population in the three districts.

The first case of yellow fever was reported Apr 8 in Masaka. Since then the district has recorded 39 suspected and 1 confirmed case, with 7 suspected and 1 confirmed case in both Rukungiri and Kalangala, the country's director-general of health services, Jane Ruth Aceng, MBChB, MPH, said. The WHO said last week that Uganda's cases are not tied to a large yellow fever outbreak in Angola.

The vaccine affords lifelong immunity to the disease.

May 23 WHO Africa news release

May 20 CIDRAP News scan on yellow fever in Africa



News Scan for May 27, 2016

Yellow fever transmission continues in Angola, with high risk of spread

Cases continue to rise in yellow fever outbreaks affecting Angola, Democratic Republic of Congo (DRC), and Uganda, compelling the World Health Organization (WHO) to say yesterday there is high risk of the disease's spread to other provinces and neighboring countries.

Of the 2,536 cases reported in Angola, 747 have been laboratory-confirmed, and 301 people have died, the WHO said. Fifteen of the country's 18 provinces have confirmed cases, and suspected cases have been reported in all provinces.

Angola's Luanda Norte province recently confirmed its first five illnesses since the outbreak began in December 2015. The five cases occurred across Coango and Chitato districts, where the WHO says there is high risk of transmission between Angola and DRC due to diamond mining transit.

Though vaccination campaigns have covered more than 7 million people in Luanda, Huambo, and Benguela provinces, the virus continues to circulate in these regions, the WHO said. Vaccination campaigns began last week for people living in the provinces of Cuanza Sul, Huila, and Uige.

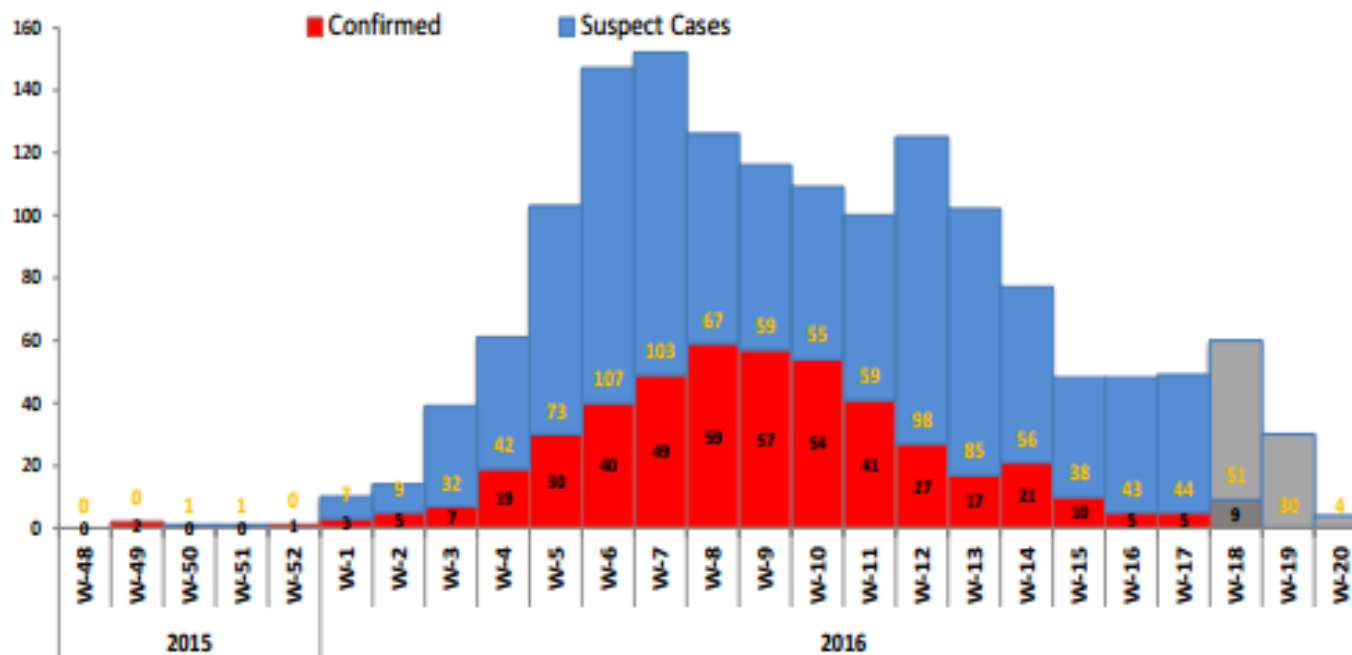
DRC has reported 48 confirmed yellow fever cases, 41 of which were imported from Angola. Three probable cases in DRC are under investigation, the WHO said.



SUMMARY

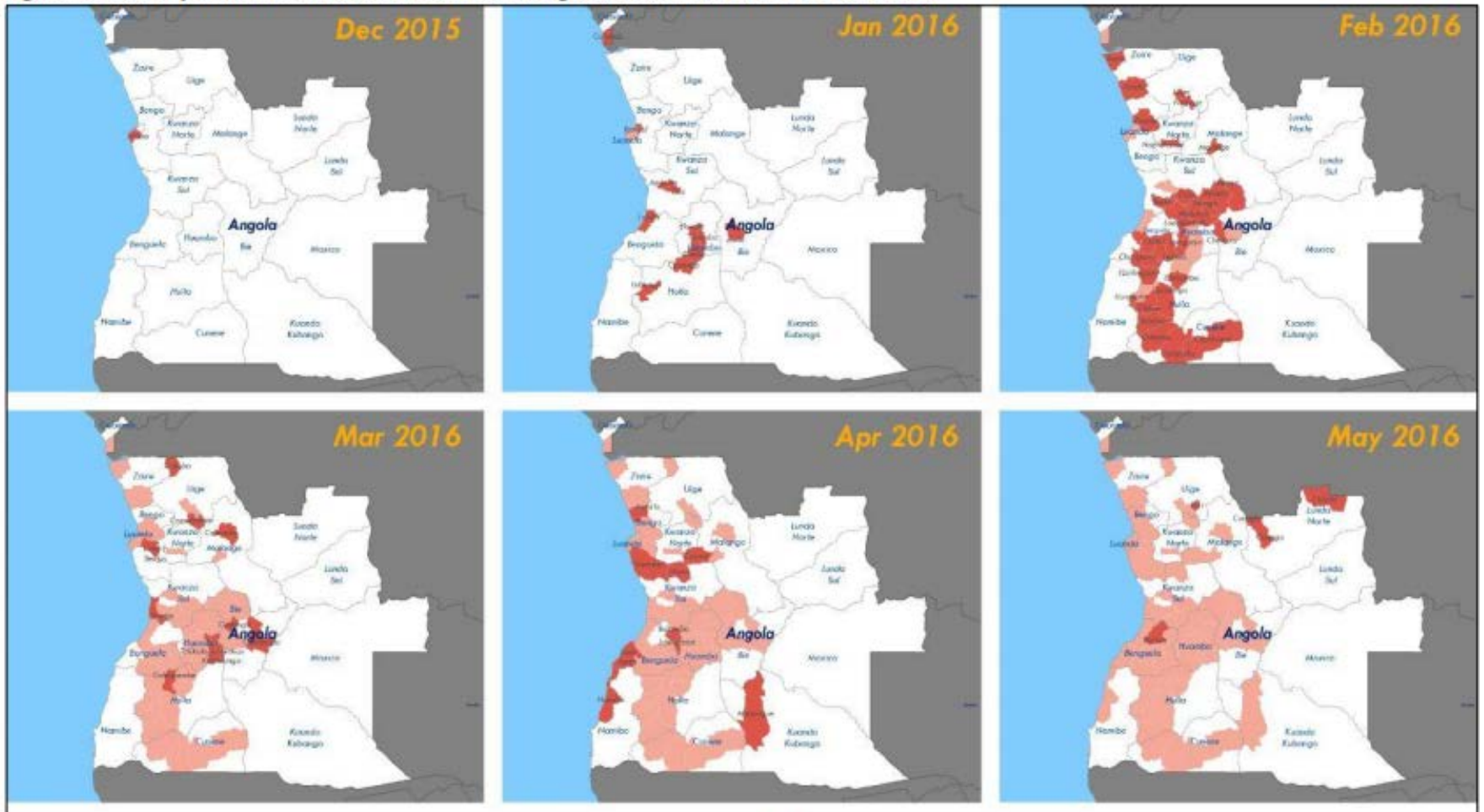
- A yellow fever outbreak was detected in Luanda, Angola late in December 2015. The first cases were confirmed by the National Institute for Communicable Diseases (NICD) in South Africa on 19 January 2016 and by the Institut Pasteur Dakar (IP-D) on 20 January. Subsequently, a rapid increase in the number of cases has been observed.
- As of 1 June 2016, Angola has reported 2893 suspected cases of yellow fever with 325 deaths. Among those cases, 788 have been laboratory confirmed. Despite extensive vaccination campaigns in several provinces, circulation of the virus persists.
- Cunene and Malanje provinces have reported, for the first time since the beginning of the outbreak, 5 autochthonous cases.
- On 22 March 2016, the Ministry of Health of DRC confirmed cases of yellow fever in connection with Angola. The government officially declared the yellow fever outbreak on 23 April. As of 1 June, DRC has reported three probable cases and 52 laboratory confirmed cases: 44 of those are imported from Angola, reported in Kongo Central, Kinshasa and Kwango (formerly Bandundu) provinces, two are sylvatic cases in Northern provinces, and two other autochthonous cases in Ndjili (Kinshasa) and in Matadi (Kongo Central). The possibility of locally acquired infection is under investigation for at least four non-classified cases.
- In Uganda, the Ministry of Health notified yellow fever cases in Masaka district on 9 April 2016. As of 1 June, 68 suspected cases, of which three are probable and seven are laboratory confirmed, have been reported from three districts: Masaka, Rukungiri and Kalangala. According to sequencing results, those clusters are not epidemiologically linked to Angola.
- The virus in Angola and DRC is largely concentrated in main cities; however there is a high risk of spread and local transmission to other provinces in both countries. There is also a high risk of potential spread to bordering countries especially those previously classified as low-risk for yellow fever disease (i.e. Namibia, Zambia) and where the population, travellers and foreign workers are not vaccinated against yellow fever.
- Three countries have reported confirmed yellow fever cases imported from Angola: Democratic Republic of The Congo (DRC) (44 cases), Kenya (two cases) and People's Republic of China (11 cases). This highlights the risk of international spread through non-immunised travellers.

Fig 2: Weekly trend of yellow fever suspected and confirmed cases in Luanda, 5 Dec 2015— 22 May 2016



Data from greyed columns is incomplete, due to reporting lags

Figure 1. Monthly time line of infected districts in Angola, December 2015 to 1 June 2016



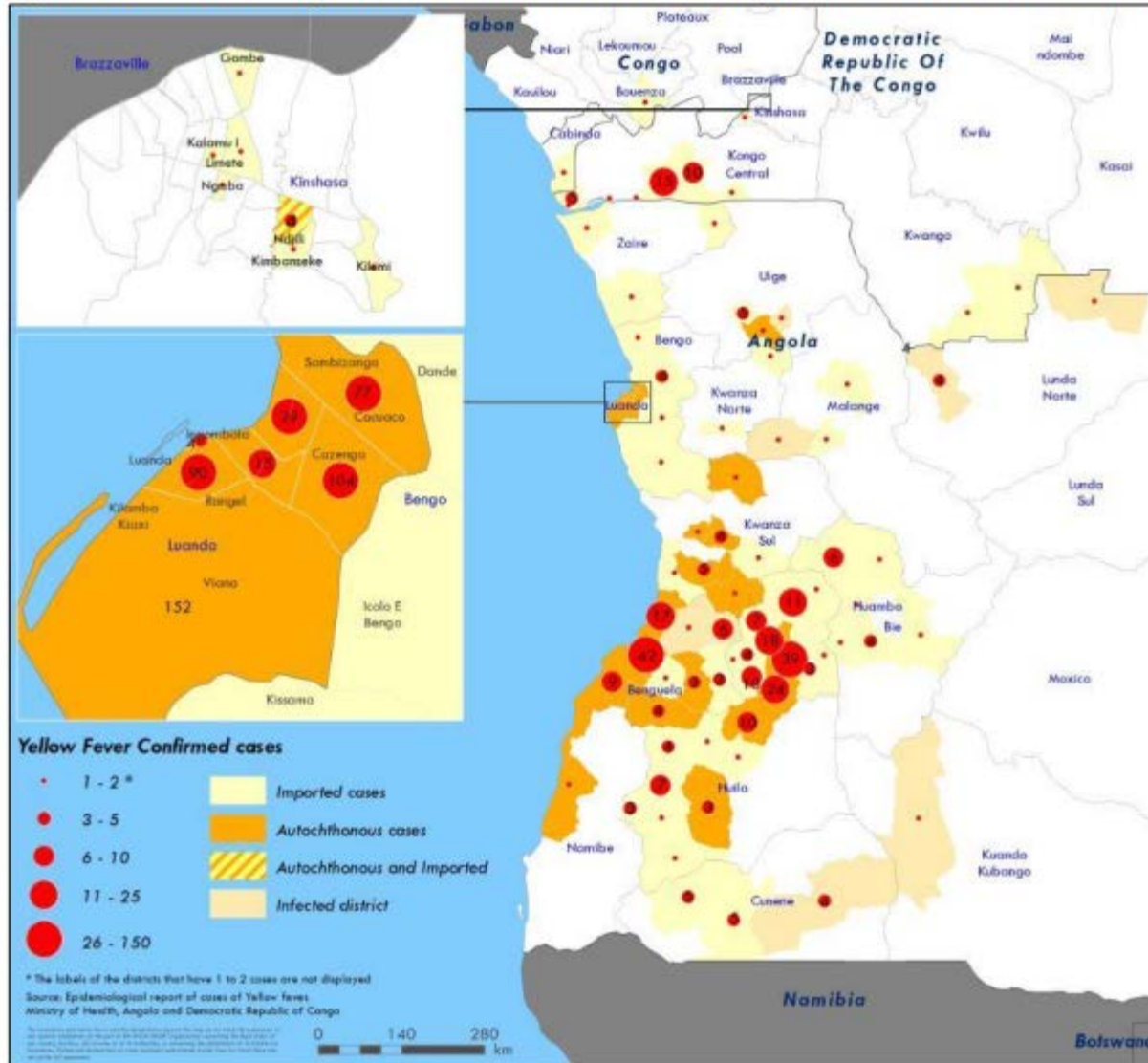
Map Scale (A3) 1:15,000,000
1 cm = 150 km
Coordinate System: UTM WGS 1984
Datum: WGS 1984
Units: Degree

Source: Epidemiological report of cases of Yellow fever, Ministry of Health, Angola

■ Newly Infected Districts
■ Infected Districts

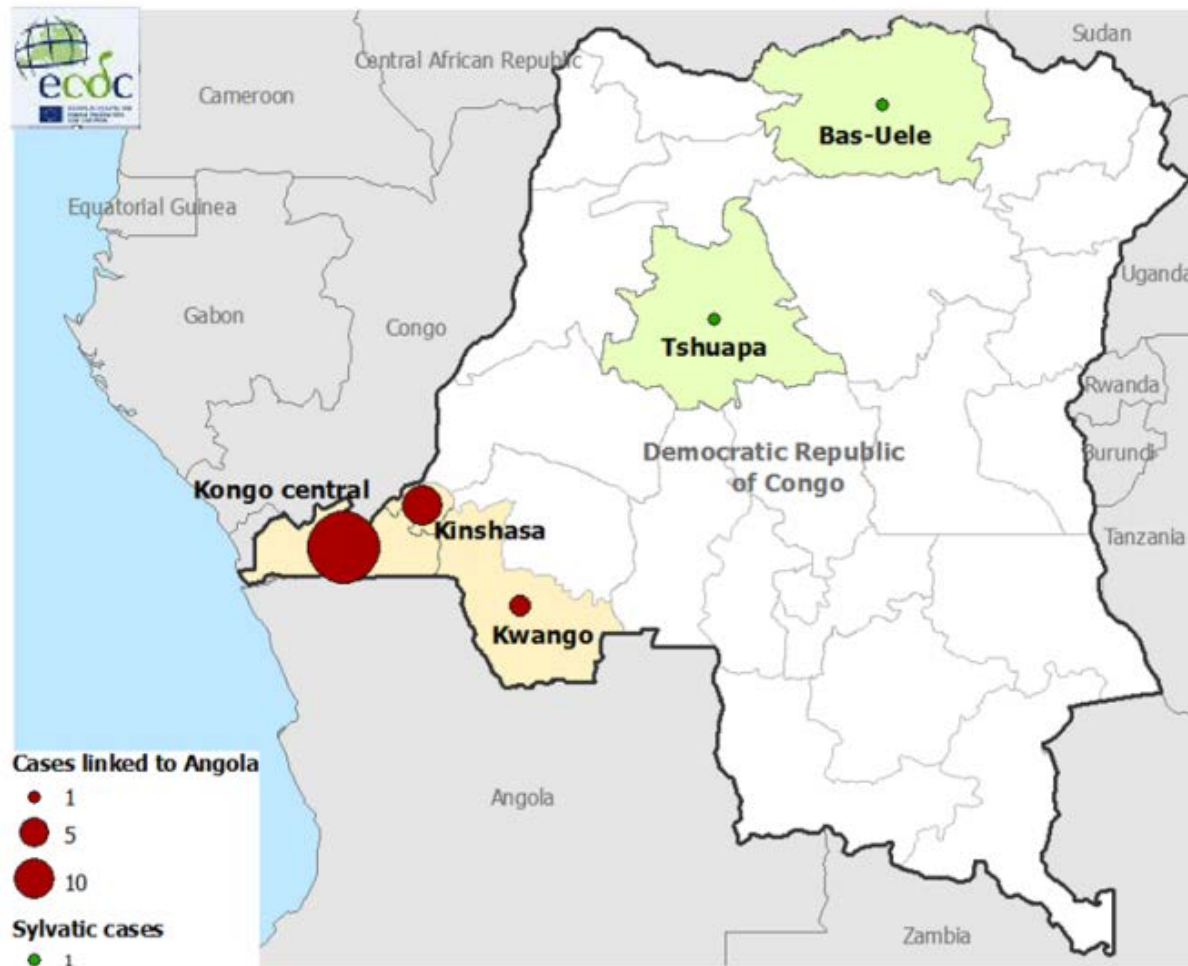
The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or its authorities, or concerning the delimitation of its frontiers or boundaries. Further details may be obtained from the Department of Information Services for which they may not be held responsible.

Figure 2. Distribution of yellow fever confirmed cases in Angola and DRC as of 1 June 2016



Distribution of yellow fever cases (confirmed) by province of reporting, DRC, 1 January 2016 - 23 May 2016

ECDC



ECDC. Map produced on 25 May 2016







RAPID RISK ASSESSMENT

Outbreaks of yellow fever in Angola, Democratic Republic of Congo and Uganda

First update, 27 May 2016

Main conclusions and options for response

In the EU/EEA, the risk of yellow fever virus being introduced is limited to unvaccinated viraemic travellers coming from epidemic areas. Given that outbreaks of yellow fever in urban settings have the potential for rapid spread and that significant yellow fever epidemics are ongoing in Angola, DRC and Uganda, EU/EEA Member States should consider a range of options for response.

Information for travellers to and EU citizens residing in areas with active transmission

Travellers visiting countries where there is evidence of persistent or periodic yellow fever virus transmission and EU citizens residing in these countries should:

- Be made aware of the risk of yellow fever;
- Check their vaccination status and get vaccinated. Vaccination against yellow fever is recommended for all those ≥ 9 months old travelling to areas where there is evidence of persistent or periodic yellow fever virus transmission. WHO publishes a list of countries, territories and areas with yellow fever vaccination requirements and recommendations [1] which includes Angola, Democratic Republic of Congo and Uganda. In Angola, the country requirement specifies that a yellow fever vaccination certificate is required for travellers aged over nine months. To reduce the risk of serious adverse events, healthcare practitioners should be aware of the contraindications and follow the manufacturers' advice on precautions to take before administering yellow fever vaccine [2].
- Take measures to prevent mosquito bites indoors and outdoors, especially between sunrise and sunset when *Aedes* mosquito vectors are most active and biting. These measures include:
 - The use of mosquito repellent in accordance with the instructions indicated on the product label.
 - Wearing long-sleeved shirts and long trousers, especially during the hours when the type of mosquito known to transmit the yellow fever virus (*Aedes*) is most active.
 - Sleeping or resting in screened or air-conditioned rooms or using mosquito nets, at night and during the day.

Options to prevent importation into EU/EEA countries

Implement the WHO International Health Regulations (IHR) Emergency Committee recommendation to only allow travellers showing proof of a valid vaccination record for yellow fever to leave Angola. The procedure should also be applied to land and sea borders. Entry screening in the EU, for proof of vaccination, would be of

Yellow fever outbreak control stymied by low vaccine supply, urban spread

Filed Under: [Yellow Fever](#)

Natalie Vestin, MPH | News Reporter | CIDRAP | May 10, 2016

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Coordinated effort is required to boost production and improve stewardship of yellow fever vaccine as mass vaccination campaigns get under way in southern Africa, especially as the risk of outbreaks spurred by travel and vector density remains a global concern, a top World Health Organization (WHO) official said today.

Sylvie Briand, MD, PhD, MPH, director of the WHO's Department of Pandemic and Epidemic Diseases, said that, as of yesterday, yellow fever totals in Angola have reached 2,267 suspected and 696 confirmed cases and 292 deaths.

Speaking at a press conference in Geneva, Briand said that 41 cases have been confirmed in the Democratic Republic of Congo (DRC), about 90% of which were imported from Angola. A separate outbreak is occurring in rural areas of Uganda, and yellow fever cases imported from Angola have been reported in China and Kenya.



Sanofi Pasteur / Patrick Boulen / Flickr cc

Yellow fever vaccine facility, Val de Reuil, France.

Yellow fever

A preventable tragedy

Africa is in the grip of one of the worst outbreaks of yellow fever in 30 years. A wider disaster threatens

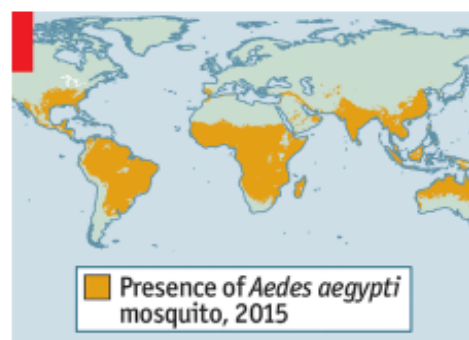
May 14th 2016 | From the print edition



806



ONE of the mysteries of epidemiology is why Asia does not suffer from yellow fever. The disease is endemic in Africa, the continent where it evolved. It is widespread in South America, having been carried there by European slave ships. It was once found in both North America and southern Europe, but it was eradicated by the application of considerable effort and money—and both places shared the good fortune of lacking monkeys, which act as reservoirs for the yellow-fever virus. Yet, although much of Asia is plagued by *Aedes aegypti*, the mosquito that spreads yellow fever, it remains blessedly free of infections.



Economist.com

It may be that Asian strains of *A. aegypti* are poor transmitters of yellow-fever viruses (though they have no difficulty passing on those of dengue, a related illness). It may be that surviving and recovering from dengue, which is widespread in southern Asia, confers a degree of resistance to yellow fever. Or it may be that past trade between Africa and Asia was too modest for the virus to take root. The world may soon find out. For an unplanned experiment has just started that could, if it is not nipped in the bud, spread one of the world's nastiest diseases to its most populous continent.

GERMINATION *A Blog by Maryn McKenna*

Africa's Yellow Fever Outbreak is a Glimpse of Our Connected Future

© POSTED THU, 05/26/2016

Zika virus has been earning all the headlines, because it is already affecting Americans—including 300 pregnant women, according to a new CDC estimate—and is expected to move into U.S. mosquitoes as the summer bug season starts.

But outside the United States, another mosquito-borne disease is attracting the world's attention, and it may predict more than Zika does about how epidemics will move around the world in the future. The disease is yellow fever, the epicenter of the outbreak is Angola, and the force that could push it around the globe is Chinese investment in the developing world.

The Angolan outbreak began in December and is large: more than 2,400 cases and 298 deaths, according to the latest report from the World Health Organization. It was originally centered on the capital, Luanda, and has spread through the western half of the country. It has also hopped borders: There are 42 cases in the neighboring Democratic Republic of the Congo and two cases in Kenya (along with an unrelated outbreak in Uganda, between Kenya and the DRC).



A YELLOW FEVER EPIDEMIC: A NEW GLOBAL HEALTH EMERGENCY?

WASHINGTON (May 10, 2016) — Evidence is mounting that the current outbreak of yellow fever is becoming the latest global health emergency, say two Georgetown University professors who call on the World Health Organization to convene an emergency committee under the International Health Regulations. In addition, with frequent emerging epidemics, they call for the creation of a “standing emergency committee” to be prepared for future health emergencies.

In their *JAMA Viewpoint* published online May 9, [*Daniel Lucey, MD, MPH*](#), and [*Lawrence O. Gostin, JD*](#), of the [*O’Neill Institute for National and Global Health Law*](#) at Georgetown, explain that the ongoing spread, and potential future spread, of yellow fever coupled with a limited vaccine supply should compel the WHO to “urgently convene an emergency committee to mobilize funds, coordinate an international response, and spearhead a surge in vaccine production.”

An epidemic of yellow fever, first reported in January, has been spreading rapidly in Angola. As of last month, the country had 2,023 suspected yellow fever cases and 258 deaths. The Pan American Health Organization (PAHO) declared an epidemiological alert on April 22 for yellow fever in Latin America, where the *Aedes aegypti* mosquito vector is also actively transmitting Zika and dengue viruses.

Vaccine “supply shortages could spark a health security crisis,” say the professors, pointing out that spread of yellow fever has already taken place in Kenya and the Democratic Republic of Congo, where efforts to vaccinate two million people are planned.

“Acting proactively to address the evolving yellow fever epidemic is imperative,” they say.



Study says dengue affects 58 million, costs \$9 billion a year

Filed Under: [Dengue](#)

Natalie Vestin, MPH | News Reporter | CIDRAP | Apr 18, 2016

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About 58.4 million contracted symptomatic dengue in 2013 and more than 13,000 died, resulting in approximate global costs of \$8.9 billion, according to a new study in *The Lancet Infectious Diseases*.

Researchers from Brandeis University and the University of Washington estimated incidence, case fatality, and economic burden of symptomatic dengue cases in 141 countries and territories, using 2013 case estimates from the Institute for Health Metrics and Evaluation's Global Burden of Disease Study, country demographic data, and expert opinion on medical costs.

In 2013, a total of 58.4 million people (95% uncertainty interval, 24 million to 122 million) contracted dengue worldwide, 18% of whom were hospitalized, while 48% sought ambulatory care, and 34% did not receive medical treatment. The authors estimate that 13,586 people, including 5,838 children, died from the infection in 2013.

The total cost of dengue worldwide in 2013 was \$8.89 billion, the authors said. Nearly half of total costs (46%) were related to hospitalizations, followed by costs of ambulatory treatment (33.6%) and non-medical care (8.5%). Fatalities represented a low percentage of overall costs (11.9%), yet required the largest individual expenditures, costing \$75,820 per adult and \$84,730 per child, the authors said.



Ellen Forsyth / Flickr cc



News Scan for May 12, 2016

Texas dengue outbreak in 2013 was linked to Mexican epidemic

An outbreak of 53 dengue virus cases in southern Texas in 2013 was linked to a concurrent epidemic in northern Mexico, demonstrating the risk of border-hopping outbreaks, according to a report yesterday in *Emerging Infectious Diseases*.

The 53 Texas cases were detected through surveillance that was enhanced because of the Mexican epidemic, which involved more than 5,500 cases, says the report by investigators from the Centers for Disease Control and Prevention (CDC) and Texas state and county health officials.

Almost half (26) of the cases were acquired locally, which "represents the largest number of locally acquired dengue cases in a single outbreak since dengue first reemerged in Texas in 1980," the report states.

Twenty-nine (55%) of the 53 Texas patients were hospitalized, a higher rate than is typically seen in dengue-endemic areas, the authors said. The reasons for it probably include detection bias based on severity of disease and an older population than is usually found in dengue-endemic regions.

Molecular phylogenetic analysis of dengue isolates showed that the viruses circulating in northern Mexico and southern Texas in 2013 were closely related to viruses that had recently circulated in Mexico and Central America, the report says.



News Scan for Jun 01, 2016

Florida confirms dengue illness

Florida's dengue case involves a visitor to Key West who has returned to his or her home state and is expected to make a full recovery, the Florida Department of Health (FDH) reported today.

"All indications are that this infection was locally acquired in Key West," the FDH said in a news release. The island has not had a dengue case since October 2010, the agency said.

Last year the state reported 1 locally acquired dengue case, in December, compared with 6 in 2014 and 23 in 2013.

Jun 1 FDH news release

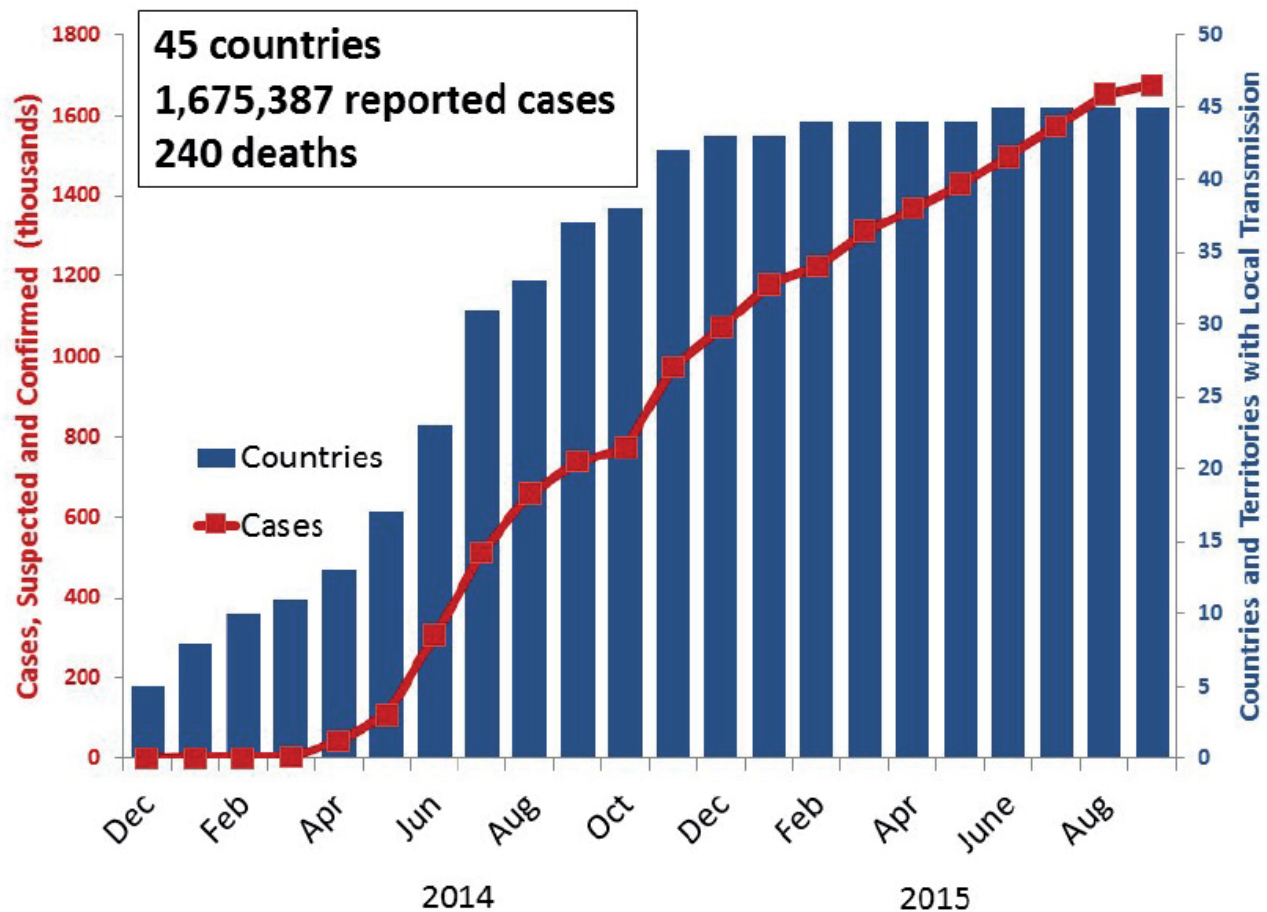


Figure 1. Number of countries in the Americas with local chikungunya transmission and number of cases reported to the Pan American Health Organization, by month, December 2013–September 2015.

News Scan for Apr 25, 2016

PAHO notes more than 10,000 new chikungunya cases in the Americas

The Pan American Health Organization (PAHO) late last week reported 10,662 new cases of chikungunya in the Americas, bringing the 2016 outbreak total to 54,286 confirmed and suspected cases.

The previous update included 2,508 new cases. The total since 2013 has now reached 1,933,832 cases.

According to the Apr 22 report, Brazil—which has reported an explosion of cases in recent months of Zika, another mosquito-borne disease—accounted for almost all the new cases. It reported 10,111 new chikungunya cases from just 1 week in late February and early March and now has 13,676 cases this year. Even though Brazil is still well behind in reporting cases, it has now passed Colombia as the hardest-hit nation in 2016. Colombia, in fact, adjusted its numbers downward by 200 cases, to 11,843.

Other countries reporting new cases were Guatemala, with 229 new infections and 1,550 total, and El Salvador, which had 127 new cases and 4,389 for the year. Many countries, however, have not reported new numbers for many weeks.

PAHO did report did not report any new chikungunya-related deaths for the year, leaving that number at two. The outbreak was first reported in December 2013 on St. Martin in the Caribbean with the first recorded cases of the disease in the Americas.

Apr 22 PAHO update



News Scan for May 19, 2016

Risk factors for severe chikungunya, global distribution

The rare individuals infected so severely with chikungunya that they need to be treated in an intensive care unit (ICU) usually have preexisting medical conditions that are triggered by the disease, although some show severe manifestations specifically related to their infection, according to a study published yesterday in the *International Journal of Infectious Diseases*.

The French researchers analyzed the cases of 65 patients admitted to hospital ICUs with chikungunya infection in Guadeloupe and Martinique from January to November 2014. Fifty-four (83%) of them had an underlying disease, most commonly hypertension, diabetes, chronic heart failure, or renal failure.

Twenty-seven (41.5%) were admitted for an exacerbation of a comorbidity. Invasive mechanical ventilation was necessary in 37 (57%) of the patients, 30 (46%) needed vasoactive drugs, and 20 (31%) required renal replacement therapy.

Chikungunya-related manifestations, including central or peripheral neurologic disorder and severe sepsis or septic shock, occurred in 18 (28%) patients. Guillain-Barre syndrome was present in 6 (9%).

No appreciable difference in crude mortality rates was observed in the ICU patients compared with chikungunya patients hospitalized but not requiring ICU care (17 [26%] and 18 [27%], respectively).

May 18 *Int J Infect Dis* abstract



News Scan for May 24, 2016

Chikungunya spike of 27,500 cases brings 2016 total well over 100,000

The Pan American Health Organization (PAHO) late last week reported 27,505 new suspected and confirmed chikungunya cases—almost all in Brazil—bringing the 2016 total to 114,199 cases.

Brazil reported 25,332 new cases of the mosquito-borne disease, raising its total for the year to 64,349, by far the most of any country this year. The country, known for being hard-hit by Zika virus, which is spread by the same *Aedes* mosquitoes, was reporting 3 weeks' worth of data in the May 20 PAHO update.

Colombia reported the next-highest increase: 810 new cases and 14,320 total. Paraguay had 644 new cases to bring its 2016 total to 894 infections. Many countries, though, have not reported new cases for many weeks.

In the previous 2 weeks, PAHO reported 996 and 3,095 new cases, respectively, but in the week before that the agency reported 28,317 new cases. Three new deaths were reported last week from Brazil, raising that number to 15 for the year, all in Brazil.

The outbreak was first reported in December 2013 on St. Martin in the Caribbean with the first recorded cases of the disease in the Americas. Since then PAHO has reported 1,994,166 suspected or confirmed cases, including 283 fatalities.

May 20 PAHO update



News Scan for May 31, 2016

PAHO reports 1,100 new chikungunya infections

The Pan American Health Organization (PAHO) late last week reported 1,184 new chikungunya cases, bringing the 2016 total to 115,383 cases.

During the previous week the agency reported a jump of 27,505 suspected and confirmed cases, but the weeks before that saw increases of only 996 and 3,095 cases. PAHO updated its numbers on May 27.

Ecuador had the most new cases, with 486, bringing its total for the year to 1,053. Colombia was not far behind, with 481 new cases and 14,801 total. Many countries, though, have not reported new cases for many weeks.

No new deaths were reported, keeping that number at 15, all in Brazil.

The outbreak was first reported in December 2013 on St. Martin in the Caribbean with the first recorded cases of the disease in the Americas. Since then PAHO has reported 1,995,350 suspected or confirmed cases, including 283 fatalities.

May 27 PAHO update

In related news, Kenya's North Eastern Region is being hit by both chikungunya and cholera, straining local medical services, Medecins Sans Frontieres (MSF, or Doctors without Borders) reported on May 27. The outbreak is centered on Mandera Township, population 90,000.

Health officials in the region reported 260 suspected chikungunya cases, 7 of which have been confirmed. And the area has had almost 800 cholera cases since April, including 11 fatalities.

May 27 MSF report



News Scan for Jun 02, 2016

Study: Clinical signs vary in fatal chikungunya-dengue co-infections

Seven patients who died following hospitalization for chikungunya and dengue virus co-infection all had fever and joint pain yet varied in terms of the viruses' effect on organ function and overall pathology, according to a study today in *Eurosurveillance*.

Researchers from the National Institute of Health of Colombia and the country's Universidad del Norte identified seven fatalities related to co-infection between September 2014 and October 2015. Time from symptom onset to hospitalization ranged from 1 to 4 days.

Six patients with chikungunya were also infected with dengue serotype 2, and one was co-infected with dengue serotype 3. Four people had underlying medical conditions, and an additional patient was pregnant and gave birth to a live infant on the second day she was hospitalized, the authors said.

All patients reported fever, arthralgia, and muscle pain; 5 had a rash; and 4 experienced hemorrhagic manifestations, including the pregnant woman, who suffered a hemorrhagic stroke 4 days after giving birth. Lab tests showed variable results, with evidence for leukocytosis in 3 patients, thrombocytopenia in 5, and renal failure in 3, the authors said.

Causes of death included multiorgan dysfunction syndrome in 5 cases and shock in 1. The pregnant woman's death was attributed to sepsis stemming from nosocomial *Acinetobacter baumannii* infection and was not directly related to viral co-infection, the authors said.

Postmortem histopathologic results were available for four cases and showed evidence of coagulative hepatocellular necrosis in three fatalities, one of whom also had signs of pericarditis, and another of whom had tubulointerstitial nephritis, the authors said. The pregnant woman's postmortem results were consistent with septic shock.



News Scan for Jun 01, 2016

Texas reports first local chikungunya case;

Texas has reported its first locally acquired case of chikungunya, while Florida officials have confirmed that state's first local case of dengue this year, in Key West. Both diseases are transmitted by the bite of *Aedes* mosquitoes.

The Texas Department of State Health Services (DSHS) said yesterday that a resident of Cameron County at the southernmost tip of the state contracted chikungunya in November 2015 without traveling. A lab test came back positive for the disease in January, but results were not reported to the local health department till April. The CDC confirmed the disease last week.

The first locally acquired chikungunya cases in the United States were confirmed in Florida in July 2014. The disease has affected almost 2 million people in the Americas since it first appeared in December 2013.

May 31 Texas DSHS [press release](#)

1. Vectorborne diseases

- Zika
- Yellow Fever, Chikungunya, Dengue
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- H7N9, other avian, seasonal, vaccine

5. Ebola + Lassa fever

6. WHO update

7. MERS-CoV

8. Other

- NSABB
- E coli outbreak (General Mills)

Emergencies preparedness, response

Oropouche virus disease - Peru

Disease Outbreak News

3 June 2016

On 2 May 2016, the Ministry of Health of Peru reported 57 cases of Oropouche fever. The majority of cases are from towns located in the northern part of the Cusco Region, which is situated in the Amazon rainforest.

Most cases (79%) were detected in January, with only 7% and 14% of the cases being identified in February and March, respectively. To date, there have been no fatalities and all cases have recovered following symptomatic treatment.

In February 2016, a field mission to the Madre de Dios Region conducted jointly by the MoH of Peru and PAHO/WHO revealed a mixed outbreak of dengue (DENV-2) and Oropouche viruses. While Madre de Dios already experienced an outbreak of Oropouche fever in 1994, at the time of the mission in February, this latest outbreak was of a higher magnitude (120 confirmed cases).

Public health response

Peruvian health authorities have implemented the following public health measures:

- providing medical treatment to the cases;
- conducting epidemiological and entomological investigations;
- strengthening vector control.

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TACKLING DRUG-RESISTANT INFECTIONS GLOBALLY: FINAL REPORT AND RECOMMENDATIONS

**THE REVIEW ON
ANTIMICROBIAL RESISTANCE**

CHAired BY JIM O'NEILL


MAY 2016

UK group calls for \$40 billion to tackle antibiotic resistance

Filed Under: [Antimicrobial Resistance](#)

Natalie Vestin, MPH | News Reporter | CIDRAP | May 19, 2016

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A report today from the UK Review on Antimicrobial Resistance (AMR) calls for 10 global interventions to address demand for unnecessary antibiotics and increase investment in new drugs and alternative therapies that come with an estimated \$40 billion price tag.

The report, "Tackling Drug-Resistant Infections Globally: Final Report and Recommendations," estimates that annual deaths attributable to antibiotic-resistant infections will rise from the current 700,000 to 10 million by 2050 if action to counter drug resistance is not taken immediately.

The independent AMR report, which was commissioned by the UK government and the Wellcome Trust and chaired by economist Jim O'Neill, PhD, MA, UK treasury secretary, recommends ten interventions to stem demand for antibiotics while encouraging research into treatments and diagnostics that meet crucial medical needs.



G7 told to act on antibiotics as dreaded superbug hits U.S.

ISE-SHIMA, JAPAN/LONDON | BY KYLIE MACLELLAN AND BEN HIRSCHLER

Britain told the G7 industrial powers on Friday to do more to fight killer superbugs as the United States reported the first case in the country of a patient with bacteria resistant to a last-resort antibiotic.

U.S. scientists said the infection in a 49-year-old Pennsylvania woman "heralds the emergence of truly pan-drug resistant bacteria" because it could not be controlled even by colistin, an antibiotic reserved for "nightmare" bugs.

In Japan, British Prime Minister David Cameron said leading countries needed to tackle resistance by reducing the use of antibiotics and rewarding drug companies for developing new medicines.

"In too many cases antibiotics have stopped working. That means people are dying of simple infections or conditions like TB (tuberculosis), tetanus, sepsis, infections that should not mean a death sentence," he told a news conference at a summit in Japan.

"If we do nothing about this there will be a cumulative hit to the world economy of \$100 trillion and it is potentially the end of modern medicine as we know it."

A review commissioned by the British government and published last week said a reward of between \$1 billion and \$1.5 billion should be paid for any successful new antimicrobial medicine brought to market.



US survey shows gaps in understanding of antibiotic resistance

Filed Under: [Antimicrobial Resistance](#)

Robert Roos | News Writer | CIDRAP News | Jun 02, 2016



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Most Americans understand that overuse of antibiotics can threaten their effectiveness, but only a minority agree that bacterial resistance is a serious problem, according to the results of a small survey reported yesterday in *Open Forum Infectious Diseases*.

The survey also showed various misunderstandings about antimicrobial resistance, with a large majority of respondents believing they could become personally immune to some antibiotics and 40% thinking antibiotics are the best treatment for a cold.



PashaIgnatov / iStock

Amazon recruiting tool used

The survey was conducted by researchers at Case Western Reserve University and the Veterans Affairs Medical Center in Cleveland. They recruited participants through Mechanical Turk, an online platform developed by Amazon for recruiting and paying people to perform tasks. "MTurk" makes it possible to attract respondents with a wide range of ages, socioeconomic backgrounds, and ethnicities, the report says.

Study: Antibiotic stewardship needs proper support

Filed Under: [Antimicrobial Resistance](#)

Natalie Vestin, MPH | News Reporter | CIDRAP | May 20, 2016

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Comprehensive antibiotic stewardship programs (ASPs) are more likely to meet national guidelines in hospitals that provide written support, dedicated staff, and an integrated teaching program, according to a study yesterday in *Clinical Infectious Diseases* that found about half reporting a comprehensive program.

Researchers from the US Centers for Disease Control and Prevention (CDC) evaluated data from 4,184 acute care hospitals submitted as part of the 2014 National Healthcare Safety Network Annual Hospital Survey.

More than half (51%) had implemented four of the seven CDC-recommended ASP elements—compliance tracking, treatment monitoring, prescriber feedback, and education—and were considered to have comprehensive ASPs. Only 39% of all hospitals had ASPs that included all seven elements, with the additional three features broadly defined as leadership support, prescription approval and monitoring, and education.

The study also found that 94% of hospitals reported





Playbook gives hospitals array of antibiotic stewardship options

Filed Under: [Antimicrobial Resistance](#)

Natalie Vestin, MPH | News Reporter | CIDRAP | Jun 01, 2016

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A playbook developed by three national organizations and released last week offers numerous options for implementing or enhancing antibiotic stewardship programs (ASPs) in acute care hospitals.

"Antibiotic Stewardship in Acute Care: A Practical Playbook" relies on guidance from more than 25 experts to present tailored solutions for specific contexts and barriers faced by clinicians and pharmacists tasked with minimizing inappropriate or unnecessary antibiotic use.

The Centers for Disease Control and Prevention (CDC) estimates that antimicrobial resistance leads to 2 million illnesses and 23,000 deaths nationally each year, spurring the growth of potentially fatal healthcare-associated infections caused by *Clostridium difficile* (*C diff*) and methicillin-resistant *Staphylococcus aureus* (MRSA).

About 30% to 50% of antibiotics prescribed in hospitals are unnecessary or inappropriate, the playbook says, though types of misuse can vary widely and may include treatment that is not indicated by test results, continuation of therapy when it is no longer necessary, wrong doses, and the use of broad-spectrum drugs to treat susceptible infections.



Paul Mazumdar / Flickr cc

News Scan for May 31, 2016

Newer antibiotics more costly but not necessarily better than old

At a time when growing bacterial resistance underlines the need for new antibiotics, records on eight antibiotics approved in the United States from 2010 to 2015 suggest that they cost more than older drugs but don't necessarily offer clear clinical advantages, according to a study published today in *Annals of Internal Medicine*.

The researchers examined the development process, pivotal trials, cost data, and other information on the eight drugs: ceftaroline, fidaxomicin, bedaquiline, dalbavancin, tedizolid, oritavancin, ceftolozane-tazobactam, and ceftazidime-avibactam. Data sources included Food and Drug Administration (FDA) documents, industry reference books, company filings, press releases, and media reports.

Four of the antibiotics "were approved for acute bacterial skin and skin-structure infections," the report says. "Seven had similar mechanisms of action to those of previously approved drugs. Six were initially developed by small to midsized companies, and 7 are currently marketed by 1 of 3 large companies."

Clinical trials of the drugs took a median of 6.2 years, and the FDA spent a median of 8 months reviewing them.



Highly resistant MCR-1 'superbug' found in US for first time

Filed Under: [MCR-1; Antimicrobial Resistance](#)

Jim Wappes | Editorial Director | CIDRAP News | May 26, 2016



Bacteria carrying the very worrisome MCR-1 resistance gene—which makes the last-line antibiotic colistin useless against them—have been found in human and animal samples for the first time in the United States, according to a report today in *Antimicrobial Agents and Chemotherapy* and a statement by federal health officials.

A Chinese team first described the MCR-1 gene last November, after finding it in pigs, pork, and humans. Since then scientists in several countries have found the gene, sometimes alongside other resistance genes, after examining their sample collections. The gene can be transferred to other organisms, compounding the concern.

Today's findings involve a 49-year-old woman whose urine contained *Escherichia coli* harboring the MCR-1 gene and an *E coli* isolate from a pig intestine that also contained the colistin-resistance gene.

MCR-1 in urine sample

The woman sought care at a Pennsylvania clinic for symptoms of a urinary tract infection 1 month ago



FDA, Michael J. Ermarth / Flickr cc

OIE aims to strengthen regulation of animal antibiotics

Filed Under: **Antimicrobial Resistance**

Robert Roos | News Writer | CIDRAP News | May 26, 2016

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At a Paris meeting this week, the World Organization for Animal Health (OIE) presented the key principles of its strategy for limiting antimicrobial resistance (AR), with a primary focus on encouraging governments to strengthen the regulation of veterinary medicines, now sorely lacking in many countries.

The strategy aims to help governments "to, step by step, prepare a legal framework and build the necessary capacity to manage the problem of antimicrobial resistance more effectively," the OIE said in a May 24 press release.

The strategy is spelled out in a 9-page report titled "Combatting Antimicrobial Resistance through a One Health Approach: Actions and OIE Strategy," which was presented May 24 at the OIE's 84th General Session.



US Navy / Camelia Montoy

A primary focus of the OIE strategy is regulating veterinary drugs better.

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World Bank Group Launches Groundbreaking Financing Facility to Protect Poorest Countries against Pandemics

May 21, 2016

First-ever insurance and pandemic bonds will save lives and protect economies

SENDAI, Japan, May 21, 2016—The World Bank Group today launched the Pandemic Emergency Financing Facility (PEF), an innovative, fast-disbursing global financing mechanism designed to protect the world against deadly pandemics, which will create the first-ever insurance market for pandemic risk. Japan, which holds the G7 Presidency, committed the first \$50 million in funding toward the new initiative.

"Pandemics pose some of the biggest threats in the world to people's lives and to economies, and for the first time we will have a system that can move funding and teams of experts to the sites of outbreaks before they spin out of control," said **Jim Yong Kim, President of the World Bank Group**. *"This facility addresses a long, collective failure in dealing with pandemics. The Ebola crisis in Guinea, Liberia and Sierra Leone taught all of us that we must be much more vigilant to outbreaks and respond immediately to save lives and also to protect economic growth."*

The announcement came a week ahead of the May 26-27 Summit of Group of Seven Leaders in Ise-Shima, Japan. G7 leaders had urged the World Bank Group to develop the initiative during their May 2015 summit in Schloss-Elmau, Germany.

"Japan is proud to support the Pandemic Emergency Financing Facility, which prevents pandemics from undermining important development achievements," said **Deputy Prime Minister and Minister of Finance of Japan Taro Aso**. *"Innovative financing for crisis responses by the PEF, together with financing for preparedness and prevention in peacetime including through IDA, are important to mitigate human and social losses and to help quickly recover in the event of a crisis. It is cost-effective and should be emphasized at all stages of economic development."*

May 22, 2016 5:13 pm

World Bank launches first insurance market for pandemic risk

Shawn Donnan in Washington and Robin Harding in Sendai

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\$7bn

Amount spent by international donors fighting the Ebola outbreak, according to the World Bank

\$140bn

Average annual losses from disasters, according to the World Bank, a tenfold rise since the early 1980s

Outbreaks of diseases such as ebola will trigger a \$500m fund to help countries and health agencies fight infection after the World Bank launched the first insurance market for pandemic risk.

The aim of the Pandemic Emergency Financing Facility, unveiled at a G7 finance ministers meeting in Japan, is to make funds instantly available for curbing the spread of particular infections diseases, thereby saving lives and money over the longer-term.

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Figure 1: Epidemiological curve of avian influenza A(H5N1) cases in humans by week of onset, 2004-2016

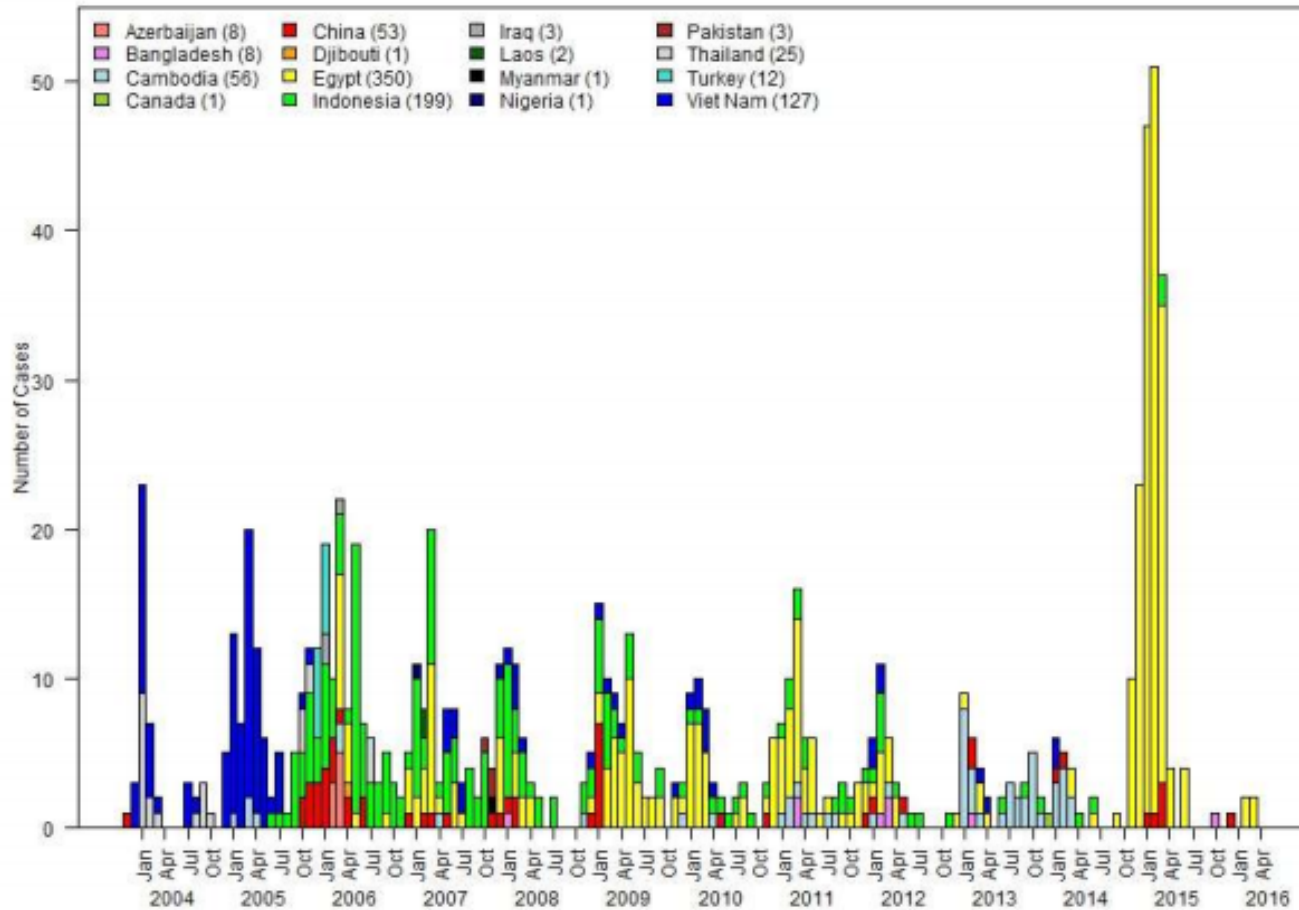
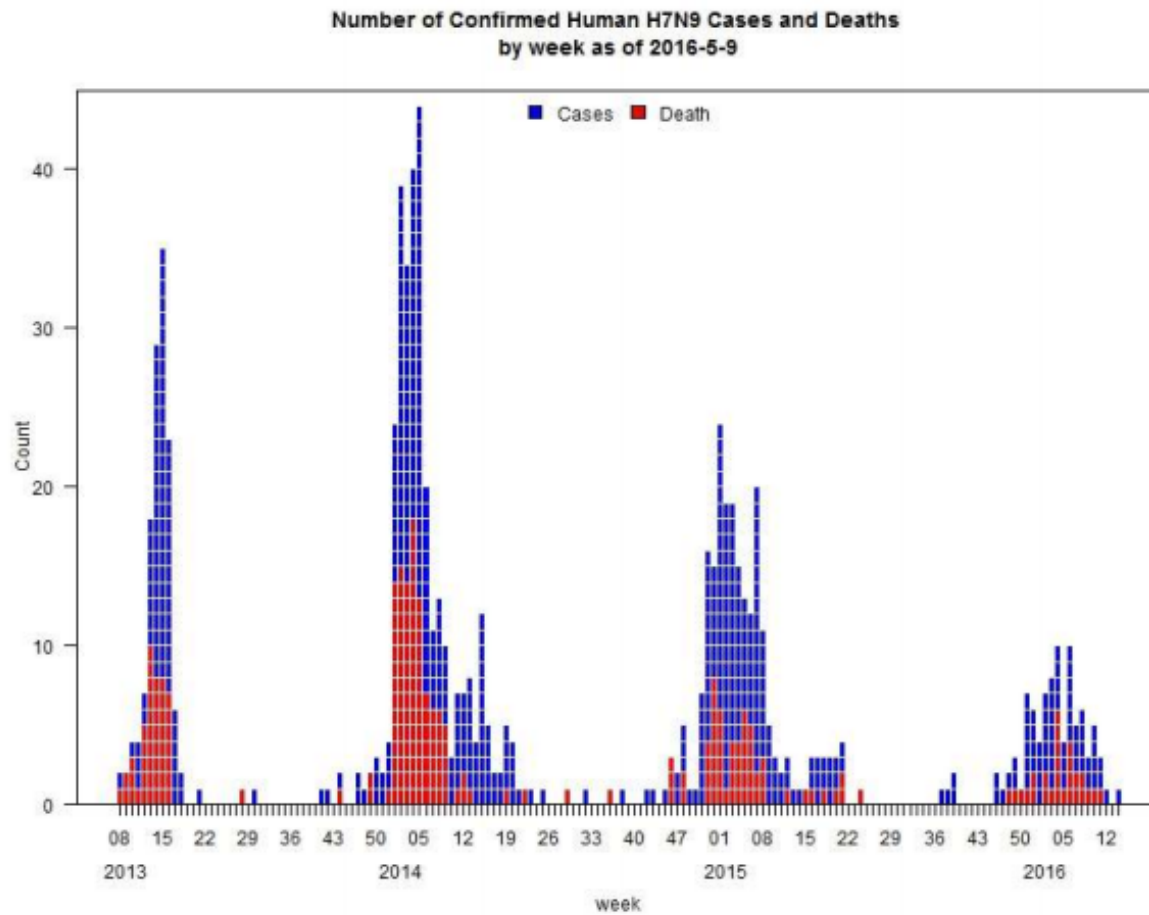


Figure 1: Epidemiological curve of avian influenza A(H7N9) cases in humans by week of onset, 2013-2016





News Scan for May 13, 2016

Deaths in hospitalized patients rose over China's 3 H7N9 epidemic waves

Risk of death from H7N9 infection was highest during China's second and third epidemic waves, also shifting to affect younger people and rural residents, according to a study yesterday in *Emerging Infectious Diseases*.

Researchers from the World Health Organization (WHO), the University of Hong Kong, and the Chinese Center for Disease Control and Prevention evaluated case data from patients hospitalized with H7N9 infections during China's three epidemic waves (March to September, 2013; winter 2013 to 2014; and winter 2014 to 2015).

Risk of death in hospitalized patients was about five times higher during the third wave and 3 times higher during the second wave compared to the first epidemic, the authors said. The proportion of severe infections also rose over time among people from small towns and rural areas.

Though risk for death was highest among people 65 years and older across all waves, people with severe disease tended to be slightly younger during the second and third waves. Case severity and risk of death decreased in Jiangxi and Fujian provinces over the second and third waves, with increased severity observed in Zhejiang, Jiangsu, and Guangdong provinces.

News Scan for May 17, 2016

WHO notes small cluster in overview of recent H7N9 cases from China

Of 11 recent H7N9 avian flu cases reported by China to the World Health Organization (WHO) on May 10, 2 were part of a cluster. In an update today, the WHO said 10 patients had a history of contact with live poultry or poultry markets—a common pattern in the disease—and 1 had a history of selling pork in a market.

The cases have been previously reported in disease updates from China, but the WHO report provides more epidemiologic details. Illness-onset dates ranged from Mar 23 to Apr 21, and patient ages vary from 23 to 69 years, with a median of 52. Seven of the patients are men, and the 11 patients hail from five provinces or cities: Jiangsu (6), Jiangxi (2), Anhui (1), Shandong (1), and Zhejiang (1).

Patients in the cluster are from Jiangxi province, a 23-year-old man who got sick on Apr 1 after buying live poultry at a market and a 43-year-old woman who became ill on Apr 5 after slaughtering poultry at a market, the WHO said, adding that although both had poultry exposure, human-to-human transmission can't be ruled out. The patients are hospitalized in critical condition.

The WHO said most people infected with the virus had contact with poultry, and though small clusters have been reported, so far there's no scientific evidence that the virus has gained the capacity for sustained infections in humans.

May 17 WHO statement



Flu Scan for May 25, 2016

Study finds differences in isolated H7N9 cases vs clusters

A study yesterday of 72 isolated H7N9 avian flu cases, 17 family clusters, and 8 clusters tied to live-bird markets in China found that case-fatality rates (CFRs) did not differ among the groups, but sporadic cases tended to involve younger patients with fewer underlying medical conditions.

Researchers from China, Taiwan, and Egypt noted in the *International Journal of Infectious Diseases* that the family clusters involved human-to-human transmission, whereas the live-market clusters involved co-exposure to the poultry environment. They analyzed primary versus secondary cases for both types of clusters.

The CFRs did not differ statistically among the groups: 36% for sporadic cases, 26% for the family clusters, and 29% for the live-market clusters. The groups differed, however, by average age (36 vs 60 vs 58 years, respectively), co-morbidities (31%, 60%, 54%), avian exposure (72%, 100%, 83%), and H7N9-positive rate (20%, 64%, 35%).

The investigators found no statistical differences between primary and secondary cases in the live-market clusters. In the family clusters, however, incidence of mild cases (6% vs 32%), history of visits to a live-bird market (100% vs 59%), exposure to both birds and infected humans (12% vs 55%), and median days from onset to antiviral treatment (6 vs 3 days) differed significantly from the index to the secondary cases.



News Scan for May 26, 2016

China reports human H7N9 case in Guangdong province

Chinese officials today reported another human case of H7N9 avian influenza, according to updates from the Hong Kong Centre for Health Protection (CHP) and Xinhua, China's state news agency.

The case involves a 63-year-old man from Meizhou city in Guangdong province, the CHP said. No additional information on his condition was given. The number of H7N9 cases in the province is down by 83% compared with the same period last year, Xinhua said.

The new illness lifts the global H7N9 total to 790, according to a list maintained by FluTrackers, an infectious disease message board.

May 26 CHP report

May 26 Xinhua story


FluTrackers H7N9 case list

Review shows persistently low flu vaccine protection against H3N2

Filed Under: **Influenza Vaccines**

Jim Wappes | Editorial Director | CIDRAP News | Apr 07, 2016

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A meta-analysis published yesterday of 56 studies showed flu vaccine effectiveness (VE) for the H3N2 strain over multiple seasons to be only 33%, compared with 54% for B strains and 61% for 2009 H1N1.

It also found, surprisingly, that VE for 2009 H1N1 and influenza B did not differ much for older people, despite their typically weaker immune systems.

The study, in *The Lancet Infectious Diseases*, covered more than 11 flu seasons, from Jan 1, 2004, to Mar 31, 2015. The H3N2 strain has been associated with more severe influenza seasons independent of vaccine effect, according to senior author Edward Belongia, MD, of the Marshfield Clinic Research Foundation (MCRF) in Wisconsin. Among the explanations he and his coauthors offered for the lower strain-specific protection were manufacturing-related factors.



sudok1 / iStock



Flu Scan for May 09, 2016

Genetic findings tie poor flu vaccine results in 2014-15 to drifted H3N2 strain

The performance of the seasonal influenza vaccine was exceptionally weak in the 2014-15 season, a failure that was attributed largely to its low effectiveness against a drifted strain of A/H3N2 virus that became dominant. Now, US researchers have reported clear genetic evidence that the drifted strain undermined vaccine effectiveness (VE).

Using a novel genetic sequencing tool, the researchers found that the vaccine showed no effectiveness against the drifted H3N2 strain but did provide some defense against an H3N2 strain more like the one used in the vaccine. They presented their findings May 6 in the *Journal of Infectious Diseases*.

Researchers in the US Flu Vaccine Effectiveness Network used a pyrosequencing assay to identify genetic groups in H3N2 viruses isolated from patients, according to the report. VE was estimated by the test-negative design, in which patients who have a flu-like illness are tested for flu and their vaccination status is determined.

Among 9,710 patients at the network sites, 1,838 (19%) tested positive for H3N2 infections, the report says. Genetic sequencing of the hemagglutinin protein of 1,397 viruses revealed that 81% were the drifted strain, called 3C.2a. VE against this strain was estimated at 1% (95% confidence interval [CI], -14% to 14%), whereas as VE against the more vaccine-like strain (3C.3b) was 44% (95% CI, 16% to 63%).

Overall flu VE in 2014-15 was estimated at 23%, with much better performance against H1N1 and influenza B viruses than against H3N2, according to previous reports. A recent meta-analysis revealed that VE against H3N2 viruses over 11 recent seasons was only 33%, compared with 54% for B strains and 61% for 2009 H1N1.

Flu Scan for Jun 03, 2016

Flu episode may yield years of future protection against same virus subtype

A study from Spain suggests that people who are infected by the influenza A viruses H3N2 or H1N1 may have better than 60% protection against new infections by the same subtype for several years afterward, according to a report in yesterday's issue of *Eurosurveillance*.

The researchers aimed to learn the extent to which (1) flu episodes within the past 5 years and (2) current trivalent influenza vaccine (TIV) prevented lab-confirmed flu cases in Navarre, Spain, in the 2013-14 flu season.

They enrolled 1,170 patients with medically attended flu-like illness (MA-ILI), including 645 in hospitals and 525 in primary care clinics. Of those, 589 tested positive for flu, all of them for type A viruses, and 581 served as negative controls.

The team defined MA-ILI due to a specific virus subtype in the previous five seasons as a laboratory-confirmed flu infection with the same subtype or MA-ILI during weeks when more than 25% of samples were positive for this subtype. It was possible to use the second criterion, they said, because one subtype was clearly dominant in Navarre in each of the five preceding seasons.


The researchers found that patients previously infected with the 2009 H1N1 virus had 63% protection (95% confidence interval [CI], 16%-84%) against infection with H1N1 in the 2013-14 season, and those who had a previous H3N2 infection had 65% protection (95% CI, 13%-86%) against another H3N2 illness.


Studies say flu vaccine helps pregnant women, heart failure patients

Filed Under: [Influenza Vaccines](#)

Robert Roos | News Writer | CIDRAP News | May 23, 2016

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In a large retrospective study from Australia, influenza vaccination during pregnancy lowered women's risk of acute respiratory infections (ARIs) requiring emergency room treatment or hospitalization by more than 60%, according to a report published May 20 in *Vaccine*.

And in other flu vaccine news, a study presented at a European meeting today suggests that the vaccine reduces the risk of hospitalization in patients who have heart failure.

Low vaccination rate in pregnant women

In the pregnancy study, the authors say previous research indicates that maternal flu vaccination can prevent hospitalization in young infants, but there is limited evidence for a protective effect of vaccination in pregnant women, who are at risk for severe illness if they contract flu.



Brian McEntire / iStock

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8. Other

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- E coli outbreak (General Mills)

News Scan for Jun 01, 2016

WHO declares Guinea to be Ebola-free

The World Health Organization (WHO) today declared that Guinea has passed 42 days since the last patient was declared free of Ebola, officially ending Ebola virus transmission.

Guinea now enters a 90-day period of heightened surveillance to quickly identify any new cases that might arise. "The source of infection in this latest outbreak is likely to have been due to exposure to infected body fluid from an Ebola survivor," the WHO said in a news release. "The risk of additional outbreaks from exposure to infected body fluids of survivors remains."

In the latest outbreak, 7 confirmed and 3 probable cases of Ebola were reported from Mar 17 to Apr 6 in Guinea. In addition, 3 confirmed cases were reported from Apr 1 to 5 in a woman and her children who had traveled from that cluster in Macenta, Guinea, to Monrovia, Liberia.

The entire region could be declared Ebola-free within weeks. The latest case in Liberia—involving the 2-year-old son of the infected woman who traveled from Macenta—was released from treatment on Apr 29, starting that country's 42-day countdown.

West Africa has been declared Ebola-free twice before, only to have new flare-ups surface immediately after the WHO declaration.

Jun 1 WHO news release



Ebola studies note sexual, breastmilk, healthcare spread

Filed Under: [Ebola](#); [VHF](#)

[Jim Wappes](#) | Editorial Director | [CIDRAP News](#) | May 23, 2016

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A new study explored flare-ups of Ebola in Sierra Leone in the second half of last year, which might have involved both transmission via sex and via breastmilk, while a separate report noted the heavy burden of the disease on healthcare workers (HCWs) at the height of the outbreak in that nation.

In the first study, the authors emphasized that rapid genetic sequencing of the newly emerging cases was instrumental in identifying the chains of transmission involved.

Also in recent Ebola literature, *The Lancet* published a detailed report on UK nurse Pauline Cafferkey, who suffered two relapses after recovering from Ebola, and US scientists reported on an Ebola survivor giving birth in California and the necessary precautions involved in her care.



Neil Brandvold, USAID / Flickr cc

POLITICS

Millions in Ebola funding, a casualty of Zika virus, may not be replenished

WASHINGTON — Lawmakers are getting closer to steering additional money toward the effort to cope with the [Zika](#) virus. What they do not appear ready to do is plug a gaping hole in funding for what was until recently another global health crisis, Ebola.

This spring, while waiting for lawmakers to act on Zika, the Obama administration [shifted \\$500 million](#) from Ebola initiatives to pay for research into the mosquito-borne virus and related measures. But as the House and Senate [inch toward](#) a Zika funding deal, there is little sign that the Ebola fund will be fully replenished, even as cases continue to flare in West Africa.

“You know this institution. Did you ever go back and try to backfill?” quipped Representative Rosa DeLauro of Connecticut, the top Democrat on the House panel in charge of health spending.



Ebola Virus Stability Under Hospital and Environmental Conditions

Danielle Westhoff Smith¹, Lindsay Hill-Batorski¹, Alhaji N'jai^{1,2,3}, Amie J. Einfeld¹,
Gabriele Neumann¹, Peter Halfmann¹ and Yoshihiro Kawaoka^{1,4}

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First published online: June 7,
2016

Abstract

The West African outbreak of Ebola virus (EBOV) is largely contained, but sporadic new cases continue to emerge. To assess the potential contribution of fomites to human infections with EBOV, we tested EBOV stability in human blood spotted onto Sierra Leonean banknotes and in syringe needles under hospital and environmental conditions. Under some of these conditions, EBOV remained infectious for >30 days, indicating that EBOV-contaminated items may pose a serious risk to humans.



News Scan for May 31, 2016

WHO reports 273 Lassa fever cases in Nigeria, 149 deaths

Nigeria has had 273 cases of Lassa fever since August 2015, an increase of more than 100 cases since late January, the World Health Organization (WHO) reported on May 27.

Of the 273 cases, 149 (55%) have been fatal; 165 cases have been lab-confirmed, or 54% of the total, including 89 deaths. Twenty-three states have reported cases.

The total includes 10 health workers, 4 of whom contracted the disease in a healthcare setting. Two of the 10 died.

As of May 17, eight states are still reporting cases or are following up on contacts of cases for the 21-day incubation period. The other 15 states have completed the 42-day period following the last known transmission.

On Jan 27, in its previous update for Nigeria, the WHO reported 159 cases, including 82 deaths.

May 27 WHO statement

Jan 27 WHO statement



News Scan for Feb 22, 2016

WHO notes 71 Lassa cases in Benin

Benin reported that seven of its departments have reported 71 total Lassa fever cases, 23 of which proved fatal, the WHO said late last week that. Six of the cases were confirmed by a laboratory at the Lagos University Teaching Hospital in Nigeria, 10 are probable, and 55 are suspected.

Borgou (52) and Collines (13) have reported the most cases, with the other departments reporting 1 to 2 cases each. The WHO reported that 318 contacts have been identified and 292 are currently under follow-up since the beginning of the outbreak on Jan 21.

The Ministry of Health of Benin is working on control measures such as field investigation, infection prevention and control, and contact tracing and follow-up, according to the Feb 19 WHO statement. The agency and its regional office in Africa have also given their support by providing funding and a team of experts to help assess the situation.

Lassa fever causes seasonal outbreaks in West Africa through contact with contaminated rodent urine or feces, person-to-person infections, or laboratory transmissions. The WHO "does not recommend any restriction of travel and trade to Benin based on the information available."

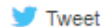
Feb 19 WHO statement



More details emerge on German, US Lassa cases linked to Togo

Filed Under: [Lassa](#); [VHF](#)

Natalie Vestin, MPH | News Reporter | CIDRAP | Mar 23, 2016



The World Health Organization (WHO) today released more details on two linked American Lassa fever patients who had worked in Togo, one of whom died, and a secondary case in a German funeral home worker who had contact with the deceased American.

Index case

The index case involved a 47-year-old American man who worked as a healthcare provider in the Savanes region of northern Togo. He exhibited gastrointestinal symptoms and fever on Feb 12 and was treated for malaria before being medically evacuated to Cologne, Germany, on Feb 25.

The man died of multiple organ failure on Feb 26, and, on Mar 9, German officials issued a post-mortem diagnosis of Lassa fever based on autopsy findings, the WHO said. Media reports have said he was a nurse.

Secondary infections in healthcare, funeral home workers

Secondary infections involve an American physician's assistant who cared for the index patient in Togo and a German funeral home worker who handled the deceased's body.



Eric Bauer / Flickr cc

One American died in Cologne, where a German funeral home worker also became infected.



New Jersey traveler dies from Lassa fever

Filed Under: [Lassa](#); [VHF](#)

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A New Jersey man who was hospitalized after returning from West Africa died last night from a Lassa virus infection, the second case to be detected in the United States since 2014, the US Centers for Disease Control and Prevention (CDC) said in a statement.

The CDC said though Lassa fever is a viral hemorrhagic disease similar to Ebola and common in West Africa, it is less likely to be fatal and spread from person to person. It can cause severe disease, however, as it did in the New Jersey man, and efforts are under way to identify the man's contacts.

Those who were in close contact will undergo 21-day symptom monitoring.



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The man had no fever when he landed at JFK International Airport in New York City.

1. Vectorborne diseases

- Zika
- Yellow Fever, Chikungunya, Dengue
- Oropouche virus

2. Antibiotic resistance

3. Pandemic Preparedness

4. Influenza

- H7N9, other avian, seasonal, vaccine

5. Ebola + Lassa fever

6. WHO update

7. MERS-CoV

8. Other

- NSABB
- E coli outbreak (General Mills)



WHA OKs new WHO health emergencies program

Filed Under: [Ebola](#); [Pandemic Influenza](#); [Public Health](#); [VHF](#)

Lisa Schnirring | News Editor | CIDRAP News | May 26, 2016



The World Health Assembly (WHA) yesterday approved the World Health Organization (WHO) plan to establish a Health Emergencies Program, part of its reforms stemming from the world's slow response to West Africa's Ebola outbreak and signifying one of the biggest changes in the agency's history.

In a statement yesterday, the WHO said the program adds operational capacities for both outbreaks and humanitarian emergencies alongside its traditional roles of providing technical support and guidance. It noted that the program is designed to provide rapid, predictable, and comprehensive support for countries and communities as they prepare for, face, and recover from health emergencies—disease outbreaks, natural disasters, man-made disasters, and conflicts.

WHA delegates also agreed to a budget of \$494 million to fund the program for 2016 and 2017, reflecting an increase of \$160 million to the WHO's current budget for emergency work.

The group also encouraged the WHO to continue



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At WHA, Chan cites Zika, yellow fever policy failures

Filed Under: [Public Health](#); [Yellow Fever](#); [Zika](#)

Lisa Schnirring | News Editor | CIDRAP News | May 23, 2016

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In stern comments today on Zika virus and yellow fever epidemics before the World Health Assembly (WHA) in Geneva, Margaret Chan, MD, MPH, World Health Organization (WHO) director-general, said a massive policy failure allowed mosquito control to lapse in the 1970s, adding that the world has failed to take full advantage of an excellent tool to control yellow fever.

Infectious diseases and reforms related to the WHO's role in responding to epidemics are among the agenda items at this year's WHA taking place through May 28. WHA is made up of health ministers from member states, who weigh in on major policy decisions, set the direction for the WHO's work, and approve the WHO's budget.

At a press briefing last week ahead of the 69th WHA meeting, Chan said about 3,500 people from 194 member states are expected to attend and that 76 items are on the agenda, the most ever for a WHA meeting.



Juan Manuel Herrera, OAS / Flickr cc



WHO's Fairy Dust Financing

The organization responsible for international public health is increasing its budget by millions of dollars – but its plan for coming up with the cash to help battle epidemics like Zika isn't grounded in reality.

BY LAURIE GARRETT

MAY 27, 2016



With the world now facing epidemics of yellow fever and Zika virus, both of this week's high-powered gatherings of the G-7 leaders in Ise-Shima, Japan, and the annual World Health Assembly in Geneva had outbreak control placed high on their agendas. But it will take a lot more than **minor reorganization** and **promises of cash** to bring the World Health Organization (WHO) and its 194 member nations up to readiness status for these and future epidemics. That kind of preparedness begins with leadership and mutual trust between the institutions of public health, political leaders, and the populations they are supposed to serve. This is a feat that WHO has not, by any measure, accomplished.

In blunt assessment, WHO director warns of global failure to prepare for infectious disease

By HELEN BRANSWELL [@HelenBranswell](#)

MAY 23, 2016

The world is not prepared to cope with what appears to be a dramatic increase in new and reemerging infectious disease threats, the director general of the World Health Organization warned Monday.

Dr. Margaret Chan issued that blunt assessment in a speech opening the 2016 [World Health Assembly](#), the annual general meeting of the WHO's member states.

Characterizing her own remarks as a “stern warning,” Chan laid out various threats from West Africa's Ebola outbreak, which has continued to flare, to [Zika](#) virus and urban outbreaks of [yellow fever](#) in Africa, which are increasingly the source of global concern.

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- E coli outbreak (General Mills)



News Scan for May 17, 2016

WHO reports details of Qatar, Saudi MERS-CoV cases

No new MERS-CoV cases have been reported today, but the World Health Organization (WHO) has posted information on the case reported recently from Qatar as well as details of several previously reported cases from Saudi Arabia.

The Qatar patient is a 40-year-old man who had frequent contact with dromedaries in his work but no other known risk factors, according to the WHO. He had been admitted to the hospital for an unrelated condition Apr 26 and tested positive for MERS-CoV (Middle East respiratory syndrome coronavirus) May 2 and 3. He is in stable condition and remains in isolation.

Contact monitoring has yielded no other MERS-CoV cases and the camels the man worked with are being evaluated, says the WHO.

Qatar has had just one other MERS-CoV case this year.

May 16 WHO notice on Qatar case



News Scan for Jun 03, 2016

Saudi Arabia reports first new MERS case since May 15

After 18 days with no new cases, Saudi Arabia's Ministry of Health (MOH) today reported a MERS infection in an elderly woman.

The MERS-CoV (Middle East respiratory syndrome coronavirus) case involves an 85-year-old Saudi woman from Riyadh who is in stable condition, the MOH said. She is not a healthcare worker, and the source of her infection is listed as "primary," meaning she did not contract the disease from another person. Her history of exposure to camels is unknown, the MOH said.

The woman's illness lifts Saudi Arabia's MERS total since 2012 to 1,384 cases, 592 of them fatal. Two people are still receiving treatment for their illnesses, the MOH said.

Jun 3 MOH update

News Scan for May 25, 2016

Study finds MERS-CoV antibodies in camel calves for first 5 to 6 months

Camel calves lose maternal MERS-CoV antibodies about 5 to 6 months after birth and are susceptible to infection, indicating a possible window for vaccination, according to a study today in *Emerging Infectious Diseases*.

German and United Arab Emirates (UAE) scientists monitored levels of antibodies specific to MERS-CoV (Middle East respiratory syndrome coronavirus) in 11 camel mothers and their calves for 1 year after birth. The animals were part of a 4,500-camel herd in the UAE, and the calves were born in early June 2014. The researchers collected nasal swabs and serum specimens on the day of birth, after 1 week, after 1 month, and then every month after that.

On the day of calving, MERS-specific antibodies were high in all camel mothers studied but could not be detected in the calves. A week later, however, all 11 camel calves had high MERS-CoV-specific antibody levels. At 5 to 6 months after birth MERS-CoV antibodies were not detected in 6 calves and were at low levels in the other 5—at 1:20 to 1:40 neutralizing titers.

The researchers also tested for MERS-CoV shedding in nasal swab specimens and detected sporadic shedding on days 7 and 30 in some calves. At 6 months, 2 of the 11 calves had detectable RNA in their blood, indicating an active infection.

REVIEW

Open Access



Middle East Respiratory Syndrome Coronavirus (MERS-CoV) origin and animal reservoir

Hamzah A. Mohd¹, Jaffar A. Al-Tawfiq^{2,3} and Ziad A. Memish^{1,4*}

Abstract

Middle East Respiratory Syndrome-Coronavirus (MERS-CoV) is a novel coronavirus discovered in 2012 and is responsible for acute respiratory syndrome in humans. Though not confirmed yet, multiple surveillance and phylogenetic studies suggest a bat origin. The disease is heavily endemic in dromedary camel populations of East Africa and the Middle East. It is unclear as to when the virus was introduced to dromedary camels, but data from studies that investigated stored dromedary camel sera and geographical distribution of involved dromedary camel populations suggested that the virus was present in dromedary camels several decades ago. Though bats and alpacas can serve as potential reservoirs for MERS-CoV, dromedary camels seem to be the only animal host responsible for the spill over human infections.

Keywords: MERS-CoV, Coronavirus, Middle East, Animal, Dromedary, Camels, Bats, Middle East Respiratory Syndrome

Background

A novel coronavirus was isolated from a Saudi Arabian patient with severe acute respiratory syndrome in June 2012 and the virus was later named Middle East Respiratory Syndrome - Coronavirus (MERS-CoV) [1]. Since then, multiple outbreaks have been reported in or been epidemiologically linked to the Arabian Peninsula. Up to April 18, 2016, the Saudi authorities reported a total of 1386 cases of which 587 died [2]. With a high mortality rate, lack of antiviral treatment, or preventive vaccine, MERS-CoV remains a major public concern.

The first human coronavirus was cultivated in 1965 on human ciliated embryonal tracheal cells [3]. Literature about human coronaviruses was limited up until the Severe Acute Respiratory Syndrome Coronavirus (SARS-CoV) outbreak in 2002. The interest in coronaviruses reemerged as a hot topic after MERS-CoV outbreaks. Coronaviruses are enveloped, positive stranded RNA viruses classified as a family within the Nidovirales order. They

have a crown appearance under the electron microscopy due to the spike protein on the surface. The coronavirus subfamily is classified into genera: alpha, beta, gama, and delta. Human coronaviruses belong to alpha, and beta coronaviruses [4].

MERS-CoV is a lineage C betacoronavirus with a genotype that is very closely related to bat coronaviruses from the same lineage, such as BtCoV-HKU4 and BtCoV-HKU5, though its evolutionary pathway is still unclear [5].

A limited number of coronaviruses is known to cause human disease. Most of known coronaviruses infect and circulate in animals, mainly bats. So when it comes to a new novel coronavirus with limited geographic distribution, one would think of a zoonotic disease with animal reservoir. This proved to be true with SARS and seems to be the case with MERS-CoV. The origin of the virus and the extent of its involvement in both human and animal populations remain hot topics that are being explored with phylogenetic and surveillance studies. In this review we summarize the current evidence about MERS-CoV origin and animal reservoir.

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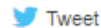
- NSABB
- E coli outbreak (General Mills)

NSABB finalizes GOF guidance; White House to weigh in

Filed Under: [Dual-Use Research](#); [Biosecurity Issues](#); [Bioterrorism](#)
Lisa Schnirring | News Editor | CIDRAP News | Jun 01, 2016



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A federal advisory group last week finalized a set of recommendations for the government to use in assessing and funding gain-of-function (GOF) studies on H5N1 avian influenza and other viruses, the last of a set of tasks from the Obama administration to address the sometimes controversial work.

In October 2014, the administration announced a pause on federally funded GOF research, which involves studies that enhance the pathogenicity, transmissibility or host range of a pathogen to learn more about it. The White House then asked the National Science Advisory Board for Biosecurity (NSABB) to come up with recommendations to help federal officials weigh funding decisions.

GOF studies have triggered "dual-use" worries—that methods meant for beneficial purposes could be used to create bioterror threats if they found their way into the wrong hands. Some experts have also raised concerns about accidental release of the experimental pathogens, especially in light of recent safety lapses involving federal facilities.



USDA

U.S. advisers sign off on plan for reviewing risky virus studies

By [Jocelyn Kaiser](#) | May. 27. 2016 . 1:30 PM

A board of advisers this week signed off on a proposal for how the U.S. government should go about deciding whether to fund certain studies that could potentially create dangerous human pathogens. The plan now goes to government officials, who say they hope to put out a policy by the end of year. Still unclear, however, is exactly when they will lift an 19-month-old ban that has halted a handful of virology studies.

The report from the National Science Advisory Board for Biosecurity (NSABB) is meant to guide decisions about so-called gain-of-function (GOF) studies—experiments that modify a pathogen in ways that could make it more transmissible and more pathogenic in humans. Such studies can help experts prepare for pandemics, but they also pose risks if the altered pathogen should escape the lab. In 2011, two GOF studies with the deadly H5N1 avian influenza virus sparked a lengthy NSABB discussion over whether the work should even be published. (Ultimately, the NSABB said it should be.) The studies also led to a new oversight policy for **certain H5N1 experiments**.





News Scan for Jun 01, 2016

CDC says *E coli* outbreak 'likely' caused by General Mills flour

A 38-case outbreak of *Escherichia coli* infections in 20 states has been linked to General Mills flour, the Centers for Disease Control and Prevention (CDC) said today.

Yesterday the company recalled 10 million pounds of its flour "out of an abundance of caution," saying no *E coli* has been detected in the flour or at its manufacturing plant.

Of 21 patients interviewed, 16 (76%) reported that they or someone in their household had used flour in the week before they fell ill. Nine of 22 patients (41%) reported eating raw homemade dough or batter, while 3 reported eating or playing with raw dough at a restaurant. Twelve of 22 people, or 55%, specified Gold Medal brand flour, which is made by General Mills.

"Collaborative investigative efforts indicate that flour produced at the General Mills facility in Kansas City, Missouri, is a likely source of this outbreak," the CDC said today.

Ten patients required hospitalization, but none developed hemolytic uremic syndrome, a type of kidney failure associated with foodborne disease, and none have died. Illness-onset dates range from Dec 21, 2015, to May 3, and patients vary in age from 1 to 95 years. About half are children, as the patients' median age is 18.

Colorado, Illinois, and Michigan reported the most cases, at four, while Minnesota has had four. The CDC warned consumers not to eat raw flour of any brand because of the risk of infection.

Jun 1 CDC statement

May 31 CIDRAP News story "[Multistate E coli outbreak prompts General Mills flour recall](#)"

Questions, Comments and Discussion



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