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The third *Clostridium difficile* NAP/BI/027 strain outbreak in Mexico

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Purpose: The purpose of this study is to assess clinical characteristics and outcomes of a *Clostridium difficile* (NAP/BI/027 strain) outbreak at a Mexico City's tertiary care hospital.

Methods & Materials: This is a cross sectional study, in which we studied the registered cases of *Clostridium difficile* infection (CDI) at "Dr. Manuel Gea González Hospital in Mexico City from December 1st 2014 to June 15th 2016. Demographic, clinical data and outcomes (cure, recurrence or death) were registered using patient's medical records. Patients included, had positive real time polymerase chain reaction for *Clostridium difficile* NAP/BI/027 strain; patients without a positive test, were excluded, as well as patients who missed information on their medical records. For the statistical analysis we used SPSS® 21 version. We calculated mean, media, percentages and rates.

Results: Annual incidence of ICD on previous years, regardless type of strain, was of 2.5, 0 and 2.3 cases per 10,000 patient-days in 2012, 2013 and 2014 respectively. Since 2015 when we detected NAP/BI/027 strain in our hospital, there has been an increase in the number of cases. We included 69 patients, 27 of them (39.1%) were positive for NAP/BI/027 strain, with a female predominance of 16 patients (59.2%) with a mean age of 53 years and a median Charlson index of 2.0. The mean of hospital stay previous to ICD diagnosis was of 16.52 days. All patients had been prescribed with antibiotics within the last 80 days before diagnosis. The mean of antimicrobial therapy previous to CDI diagnosis was of 17.89 days. The most prescribed antibiotic was ceftriaxone, in 19 patients (70.3%); 12 (44.4%) patients were treated with oral vancomycin and intravenous metronidazole, and 10 (37.0%) patients were treated with oral vancomycin; 21 patients (77.7%) had clinical cure, 4 patients (14.8%) died and 2 patients (7.4%) developed recurrent ICD.

Conclusion: Since the detection of the NAP/BI/027 strain in our hospital, there was an increase in the number of CDI (non-NAP/BI/027). However there was no increase in complications associated with this strain as reported in the literature.

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Simple online tools to visualize complex laboratory-derived surveillance outcomes – The HIV continuum experience

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Purpose: Online tools are robust for mapping illness data, and can allow for insights that are not possible with aggregate or static figures. Simple maps can be instrumental in visualizing complex surveillance data, such as laboratory-derived HIV care outcome surveillance, and may be useful for public health response to other complex emerging diseases.

Methods & Materials: HIVContinuum.org launched February 2015 and is a free online resource for visualizing HIV care continuum outcomes in 5 US cities heavily impacted by HIV - Atlanta,

Chicago, New Orleans, Philadelphia, and Washington, DC. HIVContinuum.org uses laboratory-derived surveillance data from public health agencies to map HIV care outcomes at small geographic levels of detail for the following: linkage to care, engagement in care and viral suppression. The website has an intuitive user interface and allows viewing of maps by race/ethnicity, sex and age. HIV testing and care locations can also be layered over the care outcome maps.

Results: All persons newly diagnosed with HIV infection in the 5 cities from 2007-2011 had HIV care outcomes mapped for 2012. For these 5 cities, there was a total of 300 separate maps all organized within a simple map interface. This allowed us to determine that even within our most heavily impacted cities there are micro-epidemics of worse HIV care outcomes. For instance, in Atlanta we see that the core parts of the city have the largest 5-year risk of new HIV diagnoses, but that areas in South Atlanta and Northeast Atlanta have worse linkage to HIV care within 90 days after diagnosis. These areas also have less density of HIV care providers.

Conclusion: Visualization of complex surveillance data through simple intuitive online tools will increase the impact of our public health response to emerging diseases, particularly when it can identify micro-epidemics within heavily affected cities. This information can then be used by care providers, public health agencies and policy makers to better target limited resources. In the case of HIVContinuum, this data will continue to be updated and expanded to include other cities and is already being used for public health resource planning.

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The first case exploring the health management of dogs owned by a man suffering from Ebola (EVD) in Italy

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Purpose: The purpose of this paper is to illustrate the health management of two dogs belonging to a patient suffering from Ebola (EVD) by Veterinary Service of the Local Health Authority in collaboration with the Department of Veterinary Medicine at the University of Sassari.

Methods & Materials: On May 12, 2015, a Sardinian nurse tested positive for Ebola virus (Zaire ebolavirus). He worked in Sierra Leone for the Ong Emergency and he was later admitted to a high-isolation ward at the National Institute of Infectious Diseases, "Lazzaro Spallanzani", in Rome. It was the first case in Italy of a patient experiencing symptoms of Ebola (high fever and malaise) after returning from the West African countries where outbreaks of Ebola were present. The high risk of infection for family mem-

bers and the possible role of dogs in the transmission of the disease prompted the use of quarantine measures (21 days). Family members were placed in isolation in a country house with their two patient-owned dogs, and they were given specific instructions. The two dogs were monitored by passive telephone surveillance. Two family members were entrusted by a veterinarian with the task of measuring the dogs' temperatures twice daily (in the inner part of the thigh) by use of a laser thermometer and communicate by telephone any clinical signs of disease that might be observed.

Results: During the period of isolation, no symptoms related to Ebola were detected and the body temperatures were always maintained at physiological levels in both dogs. The same thing was observed in the two family members. As a result, quarantine measures were revoked for both for humans and animals.

Conclusion: Despite the lack of scientific evidence about the possibility of the human-canine virus transmission, it proved to be a good idea to adopt a biosecurity management protocol that dictated quarantine and passive telephone surveillance of both temperature and symptoms, allowing both dogs to stay alive.

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AIDSVu.org: Communicating about the US HIV epidemic to diverse stakeholders



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Purpose: We developed an interactive, online mapping tool to allow users to visualize the US HIV epidemic, and to increase free access to datasets and educational tools. The website launched in 2010, and released its sixth annual update in June of 2016.

Methods & Materials: AIDSVu.org is the product of a public/private/governmental collaboration. All data mapped on the site are public, population-based, and ongoing data streams. Data on prevalent HIV infections, new HIV diagnoses and deaths among people living with HIV are obtained from the US Centers for Disease Control and Prevention. Data on social determinants of health (e.g., poverty, income inequality) are obtained from the US Census. Data at finer geographic levels (postal code or census tract level) are obtained directly from selected US city and state health departments. Maps emphasize interactive elements, and use interfaces similar to popular web tools and apps for driving directions or finding retail services. Social media content allows key HIV prevention messages to be shared easily by users, amplifying the reach of the content.

Results: The volume of site traffic to AIDSVu.org has grown significantly, with annual site visits growing from 40,956 in 2012 to 228,112 visit in 2015. In addition to general public users, core user groups include visitors from academic institutions (8,069 visits from 6,460 unique visitors in 2015) and government (1,939 visits from 1,526 unique visitors in 2015). Another notable trend is the increase in user accessing AIDSVu.org resources through a mobile device: in 2015, 51% of visits were from mobile devices, and through June 2016, 60% of visits were through mobile devices. We have documented uses of the AIDSVu.org data to support ecological analyses of associations between HIV prevalence and social determinants of health, correlational analyses of social media content and HIV prevalence, and applications to optimize location of HIV treatment services based on underlying spatial distribution of people living with HIV.

Conclusion: Map-based information portals offer important opportunities both for the display and transparent dissemination

of data from surveillance systems and for visualization of diagnosis data for newly emerging infections.

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Impact of a protracted Q fever outbreak in South West Germany 2016 on the supply of blood products



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Purpose: The federal State of Baden Wuerttemberg is highly endemic for Q fever. *Coxiella burnetii* infection is asymptomatic in approximately 50% of cases. Between 1 January and 10 May 2016 four infected sheep flocks in a rural district lead to a protracted Q fever outbreak with 87 reported cases. To reduce the risk of blood transfusion-transmission of *Coxiella burnetii* blood donors were deferred in the outbreak area. This measure was based on the recommendation of the German Ministry of Health's National Advisory Committee 'Blood'. This study explores the effect of this long lasting outbreak on the supply of blood products.

Methods & Materials: Blood donation data were obtained from the database of the German Red Cross Blood Donor Service Baden-Wuerttemberg – Hessen. We analysed data on cancelled mobile blood donations and deferred blood donors between 1 January and 30 April 2016 in the outbreak area. Data on the regional need of blood products were calculated based on the population size. Overall donation rate was calculated using the mean number of donations in the period 1 January and 30 April, the last years.

Results: Between January and May 2016 approximately 2800 donations were needed to cover the needs of the affected area. 4500 donations were expected, 1875 were carried out. Overall 27 collection dates were cancelled and 256 blood donors were deferred in seven municipalities of the affected district. The action leads to a loss of overall 2720 (40%) blood donations in the district. 925 donations has to be covered by other sources.

Conclusion: The results of the investigation indicate the loss of blood donations in affected Q fever areas leading to an effect on yields of regional blood supply. We highly recommend the improvement of prevention measures to reduce the risk of Q fever outbreaks leading to the deferment of donors. Of central importance is the control of the pathogen in sheep, which also leads to a risk minimisation in non epidemic periods. Screening of blood donors on *Coxiella burnetii* DNA during outbreaks as alternative should be considered.

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