INFECTIOUS DISEASES NEWSLETTER

February 2014
T. Herchline, Editor

LOCAL NEWS

ID Fellows

Dr Kunal Desai will be at OSU for Transplant in May and Miami Valley Hospital in June. Dr. Katelyn Booher will be at the VA Medical Center May-August. Our new fellow will be Dr Shruti Patel. Dr Patel is a graduate of the Wright State University Internal Medicine Residency in 2013.

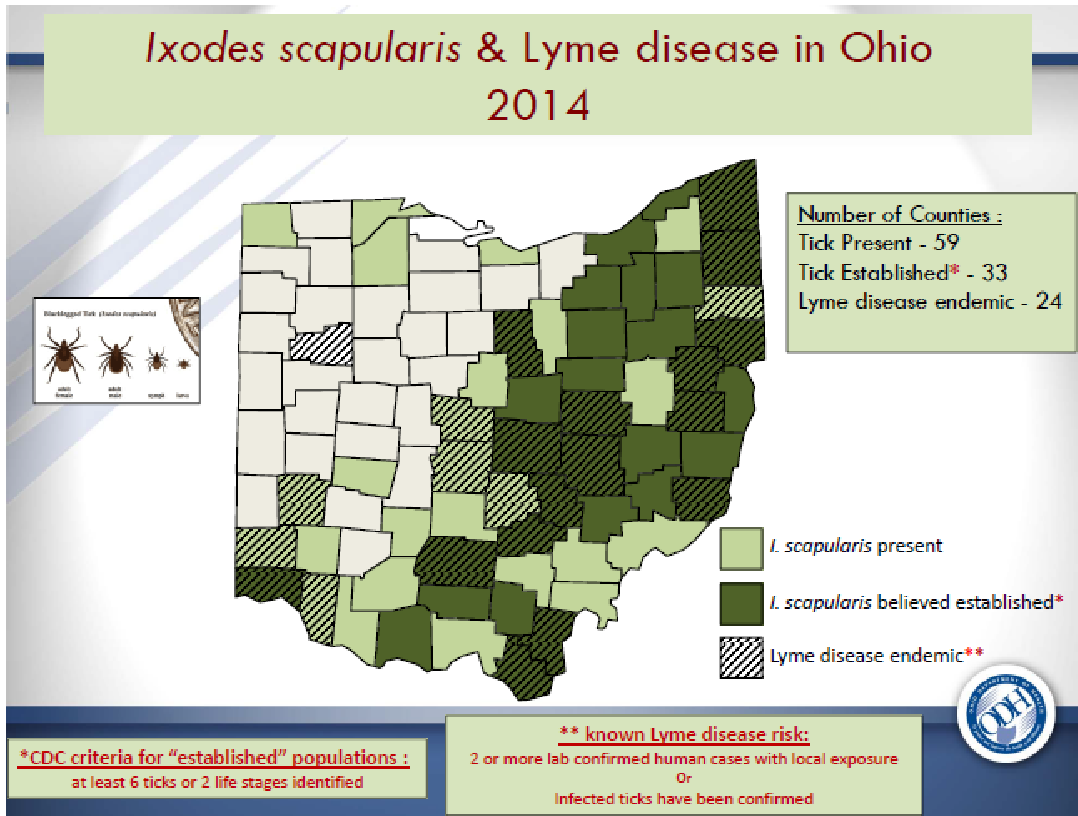
Dr Desai will be completing his fellowship this summer, and has accepted a position with Acute Care Consultants. He will be based at Kettering Medical Center and Sycamore Hospital.

Local Disease Activity

A confirmed case of *Corynebacterium diphtheriae* was identified in a local high school student. Signs and symptoms of illness included severe sore throat, fever up to 102°F, cervical lymphadenopathy, diarrhea, myalgias, and malaise. These symptoms began in early April. She was admitted to Children's Medical Center 5 days later with dehydration secondary to poor oral intake. She was discharged after spending 2 days in the hospital. Culture of the pharynx showed growth of *C. diphtheriae*. She had received her recommended vaccinations. The isolate was sent to the Centers for Disease Control and *C. diphtheriae* was confirmed, but the isolate did not produce toxin (toxin production is responsible for some of the most serious consequences of diphtheria). All close contacts to the case were identified and treated. All health care personnel participating in her care were identified and treated. A 10-day course of erythromycin or a single injection of penicillin was recommended for prophylaxis. There have been no other cases identified. The last reported case of *C. diphtheriae* to occur in Ohio was in 1997.

There were ten influenza-related deaths during 2013-2014 the season in Montgomery County. For the season, most of the deaths were individuals with significant co-morbid illnesses (lung, disease, heart disease, immunocompromised state). Ages ranged from 26 years old to 83 years old. There were equal numbers of males and females. None were known to have received the influenza vaccine this season. There were a total of 196 influenza-related hospitalizations during the season.

In 2013, there were 93 cases of Lyme disease reported in Ohio. This is a significant increase over the average from the previous 10 years, which is 51 cases per year. Until recently, the primary vector for Lyme disease, *Ixodes scapularis*, was not considered established in Ohio. The tick has now been found in 59 Ohio counties and is considered established in 33 counties (on the basis of finding at least 6 ticks or 2 life stages). Lyme disease is considered endemic in a county if there have been 2 or more lab-confirmed human cases (without a travel history) or infected ticks have been found. There are 24 counties considered endemic, including Montgomery County. The tick has been found in County, but is not yet considered established. The following map has been provided by the Ohio Department of Health.



NATIONAL NEWS

Contributed by Katelyn Booher, DO

Progress Continues on Antimicrobial Resistance with New Drugs on Horizon

Sponsored by IDSA, the 10 x 20 initiative is a global effort to foster development of 10 innovative antibiotics by 2020. The White House and Congress assigned committees continue to work with IDSA in hopes of moving forward. The Anti-Infective Advisory Committee of the Food and Drug Administration voted to recommend approval of tedizolid and dalbavancin for acute bacterial skin and skin structure infections.

Mumps Outbreak

As of April 25, 2014, 393 people in the United States have been reported to have mumps this year. Two-hundred and ninety nine of these cases have been reported in Franklin and Delaware counties, representing about ¾ of cases reported nationwide since early January. Additionally, 179 cases have been linked to The Ohio State University outbreak. Local public health departments continue to investigate, and encourage completion of two MMR vaccinations for any unvaccinated persons.

Multistate Outbreak of *Salmonella* cotham Linked to Pet Bearded Dragons

As of April 21, 2014, a total of 132 persons infected with the outbreak strain of *Salmonella* cotham have been reported from 31 states since February 21, 2012. Fifty-eight percent of ill persons are children 5 years of age or younger. Forty-two percent of ill persons have been hospitalized. No deaths have been reported.

INTERNATIONAL NEWS

Outbreak of Ebola in Guinea and Liberia

As of April 29, 2014, the Guinea Ministry of Health announced a total of 221 suspect and confirmed cases of Ebola hemorrhagic fever (EHF). There have been 146 deaths in multiple districts of this small region in West Africa. Twenty-five health care workers in Guinea have clinical symptoms of EHF, including 18 confirmed cases and 16 deaths. The virus is 97% identical to Ebola virus (Zaire ebolavirus) identified earlier in the Democratic Republic of the Congo and Gabon.

Latest Cases of Avian Influenza A(H7N9)

At the end of April, three additional laboratory-confirmed cases of human infection with avian influenza A(H7N9) virus were reported by the National Health and Family Planning Commission of China to WHO. Patients are age 51, 55, and 75. Two have confirmed exposure to poultry; the third could not be confirmed. All three patients are in severe or critical condition.

First Laboratory-Confirmed Case of MERS-CoV Infection in Egypt and the US

April 26, 2014 marks the first reported case of Middle East Respiratory Syndrome Coronavirus (MERS-CoV) infection in Egypt. The patient, a 27 year-old man, had been living in Saudi Arabia for the past four years, and had known exposure to a laboratory-confirmed case, his uncle, who remains under inpatient treatment in a Saudi Arabian hospital. The patient is in stable condition. WHO has mobilized a support team to assist in the investigation.

The first case of MERS-CoV infection in the United States, identified in a traveler, was reported to CDC by the Indiana State Department of Health (ISDH) on May 1, 2014, and confirmed by CDC on May 2. The patient is in a hospital in Indiana after having flown from Saudi Arabia to Chicago via London.

Case Conference

Contributed by Kunal Desai, MBBS

A 16-year-old previously healthy female from Chennai, India presented with fever up to 103 associated with chills, malaise, and weakness for one week. She also complained of epigastric abdominal pain, nausea, vomiting for the last four days. She reported that fever seem to be resolving in last 2-3 days, but continues to have other symptoms. She denied shortness of breath, cough, headache, diarrhea or rash. She denied gum bleeding or hematuria but reported having unusually heavy menstrual period. She travelled recently (3 weeks ago) to Mysore & Bangalore with her parents, ate outside food, lived in hotel where she was exposed to the mosquitos. Vital signs on admission were as follows; temperature of 99.4 ºF, heart rate of 110 beats/minute, respiratory rate 16 per minute, blood pressure of 90/40 mmHg, and oxygen saturation of 100% on room air. She was in mild distress due to pain. Physical exam was remarkable for moderate epigastric & right upper quadrant tenderness without hepatosplenomegaly. Laboratory data were remarkable for hemoglobin of 16 mg/dl, hematocrit of 49%, platelet counts of 45,000/mm^3, ALT of 111 U/L, AST of 272 U/L, alkaline phosphatase of 191 U/L, and total bilirubin of 1.6 mg/dl. Chest x-ray was normal. Ultrasound of the abdomen shows enlarged liver with increased echogenicity. Dengue NS1 antigen ELISA was positive confirming the diagnosis of Dengue fever. She was treated with aggressive intravenous fluids with good clinical response and was discharged in stable condition after 3 days.

Discussion

The global burden of dengue is large; an estimated 50 million infections per year occur across approximately 100 countries, with potential for further spread [1]. The primary vector, the urban-adapted Aedes aegypti mosquito, has become widely distributed across tropical and subtropical latitudes. In addition, the geographic range of a secondary vector, Aedes albopictus, has dramatically expanded in recent years including southeast USA [3]. Dengue has four serotypes. Since human infection with one serotype is believed to confer long-lived serotype-specific immunity, but only short-lived cross immunity between serotypes. Secondary infection, in the form of two sequential infections by different serotypes, is also an epidemiologic risk factor for severe disease. During 2006 to 2008, CDC reported 732 confirmed and probable cases of Dengue. By region, 262 persons (43%) had traveled to the Caribbean; 208 (34%) to Mexico, Central America, or South America; 131 (21%) to Asia and the Pacific; and 12 (2%) to Africa [5]. The diagnosis should be considered in any patient presenting with fever that has developed within 14 days after even a brief trip to the tropics or subtropics, including those regions where dengue has not traditionally been considered an endemic disease [5, 6].

1. Simmons, Cameron P., et al. "Dengue." New England Journal of Medicine 366.15 (2012): 1423-1432.
2. Dengue: Guidelines for treatment, prevention and control. Geneva: World Health Organization, 2009.
3. Lambrechts, Louis, Thomas W. Scott, and Duane J. Gubler. "Consequences of the expanding global distribution of Aedes albopictus for dengue virus transmission." PLoS neglected tropical diseases 4.5 (2010): e646.
4. Centers for Disease Control and Prevention (CDC. "Locally acquired Dengue--Key West, Florida, 2009-2010." MMWR. Morbidity and mortality weekly report 59.19 (2010): 577.
5. Luce, R., et al. "Travel-associated dengue surveillance-United States, 2006-2008." Morbidity and Mortality Weekly Report 59.23 (2010): 715-719.
6. Streit JA, Yang M, Cavanaugh JE, Polgreen PM. Upward trend in dengue incidence among hospitalized patients, United States. Emerg Infect Dis 2011; 17:914-6.

Upcoming Events

May 2014		
10-13	European Congress of Clin Micro & Inf Dis	Barcelona, Spain
14	Journal Club	MVH 6NW
28	Case Conference	MVH Maxon Parlor
6-10	European Society for Paediatric ID	Dublin, Ireland
June 2014		
7-9	Association for Professionals in Infection Control	Anaheim, CA
11	Journal Club	MVH 6NW
25	Case Conference	MVH Maxon Parlor
July 2014		
9	Journal Club	MVH 6NW
20-25	IAS AIDS Conference	Melbourne, Australia
30	Case Conference	MVH Maxon Parlor
August 2014		
13	Journal Club	MVH 6NW
27	Case Conference	MVH Maxon Parlor
September 2014		
6-9	ICAAC	Washington, DC
10	Journal Club	MVH 6NW
24	Case Conference	MVH Maxon Parlor
October 2014		
8	Journal Club	MVH 6NW
8-12	IDSA/ID Week	Philadelphia, PA
29	Case Conference	MVH Maxon Parlor
November 2014		
2-6	American Society of Tropical Medicine & Hygiene	New Orleans, LA
12	Journal Club	MVH 6NW
26	Case Conference	MVH Maxon Parlor
June 2015		
4-6	Refugee Health Conference	Toronto, Canada