

Notes from the Field

Health Care–Associated Outbreak of Epidemic Keratoconjunctivitis — West Virginia, 2015

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On September 4, 2015, the West Virginia Bureau for Public Health (WVBPH) was notified by an urban ophthalmology practice of 13 patients with epidemic keratoconjunctivitis (EKC) diagnosed during the preceding 3 weeks. EKC is an eye infection characterized by severe inflammation of the conjunctiva and cornea, and can result in vision loss (1). Pathogens commonly detected in EKC outbreaks are human adenovirus (HAdV) serotypes 8, 19, and 37, which are spread person-to-person or by fomites; no vaccines or effective antiviral treatments are available (2). HAdVs that cause EKC are resistant to desiccation and certain common surface disinfectants (3). Incubation periods of approximately 14 days, prolonged viral shedding, and persistence of live virus on some surfaces for up to 30 days (3) hamper outbreak prevention and control efforts. EKC often occurs simultaneously in health care settings and the community (2). EKC is not a reportable disease and outbreak reporting is often delayed (2); the incidence in West Virginia is unknown.

The local health department, with support from WVBPH, conducted an investigation to determine the source, identify additional cases, and implement control measures. An EKC case was defined as an ophthalmologist-diagnosed acute nonbacterial eye disease, characterized by conjunctival inflammation and lacrimation with ≥ 2 of the following symptoms: foreign body sensation, light sensitivity, eye pain, or conjunctival edema. A practice-associated EKC case was defined as a case of EKC diagnosed in a person who visited the ophthalmology practice or who lived with a patient who visited the practice ≤ 14 days before symptom onset. Practice-associated cases were ascertained by medical record review. A local health advisory was released to increase case-finding; symptomatic patients not associated with the practice were interviewed by telephone to ascertain symptoms and determine case status. By September 14, an additional 10 cases had been reported; eight were practice-associated, including two in practice staff members; two cases were in patients not previously associated with the practice.

Laboratory testing for HAdV was established on September 5. Fifteen patient conjunctival swab specimens were collected from symptomatic patients at the practice during September 5–October 5, and stored by a regional hospital virology laboratory.

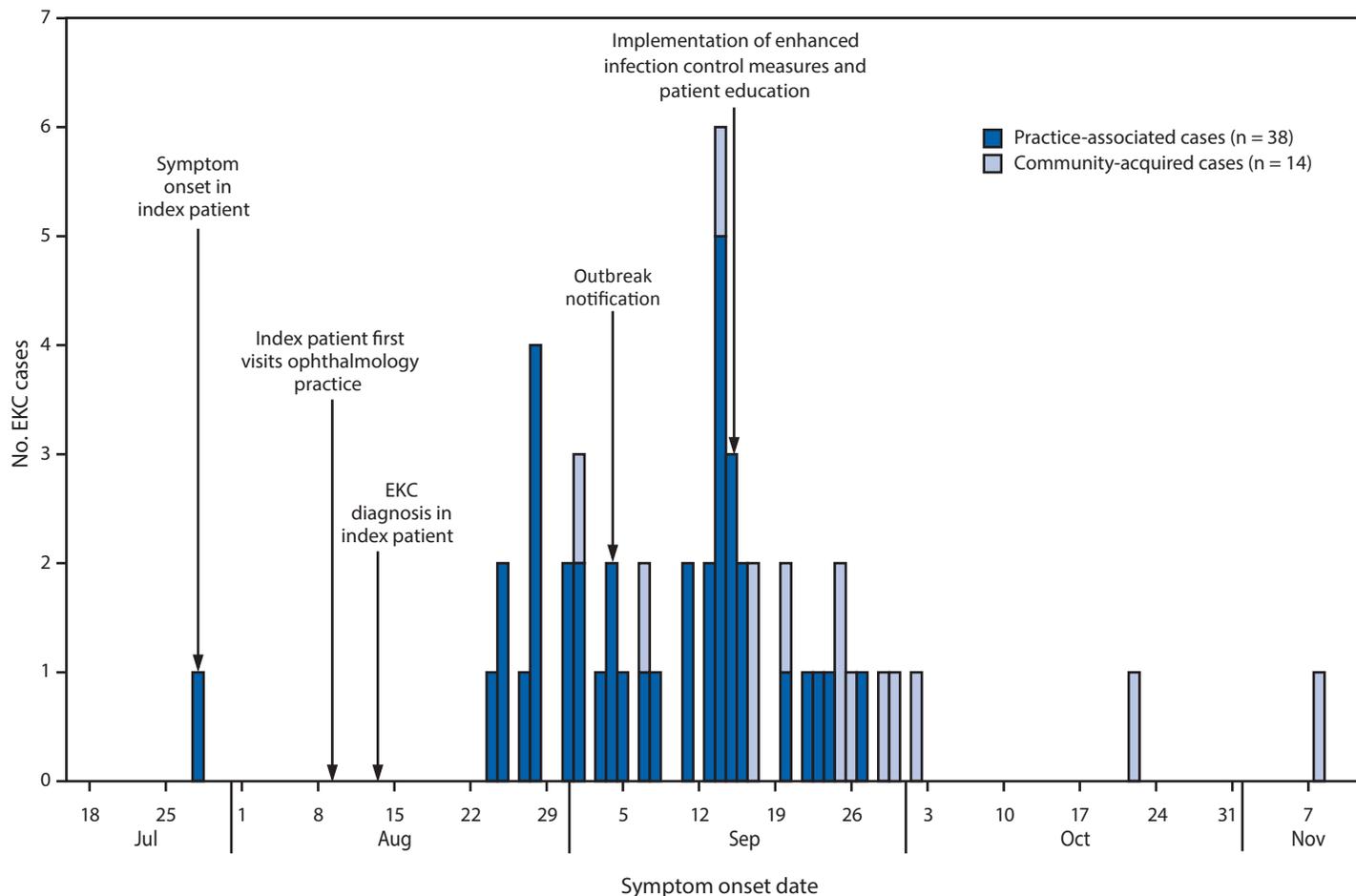
Site visits were conducted by the local health department on September 10 and September 15; seven environmental swab samples were collected during the September 15 site visit. The Wadsworth Laboratory, New York State Department of Health, confirmed HAdV presence with real-time polymerase chain reaction, and performed HAdV molecular serotyping on the first 12 conjunctival swab specimens collected and on the seven environmental samples. HAdV-8 was detected in 10 of 12 patient specimens; HAdV-3 was detected in one; and one specimen had no detectable virus. HAdV-8 was also detected in three of the seven environmental samples; these were recovered from an exam chair hand rest, a slit lamp chin rest, and an applanation tonometer (a device used to measure intraocular pressure) in a single examination room.

Infection control procedures identified during site visits included an unwritten protocol of once daily cleaning of commonly touched surfaces, and wiping instruments with alcohol pads after each patient contact. The local health department recommended a written infection control policy using cleaning agents effective against HAdV contamination (3), cleaning all touched surfaces between symptomatic patient encounters, segregating infectious patients from others, mandatory leave for symptomatic staff members, and patient education regarding EKC transmission prevention. Control recommendations were implemented on September 15.

During August 14–December 1, a total of 52 EKC cases were identified, with symptom onset July 28–November 8. Overall, 38 (73%) cases were practice-associated (Figure). Laboratory confirmation of HAdV-8 among practice-associated cases and HAdV-8 contaminating the practice environment suggest that health care–associated transmission occurred during the 1 month between the first EKC diagnosis and implementation of control measures.

This investigation highlights the importance of effective control measures for HAdV decontamination in health care settings to prevent transmission within clinical settings and the community. Eye care providers should maintain written infection control protocols addressing EKC, and other infection risks, as recommended by CDC (4). Timely reporting of outbreaks and deployment of an EKC outbreak toolkit that includes patient education, a health advisory to providers, and a chart abstraction template, might reduce transmission; a toolkit is available upon request to WVBPH, Division of Infectious Disease Epidemiology.

FIGURE. Dates of symptom onset in 52 patients with epidemic keratoconjunctivitis (EKC) and outbreak-related activities — West Virginia, July–November, 2015



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