

Enterovirus D68 (EV-D68)

Enterovirus D68 (EV-D68) is a non-polio enterovirus that causes mild to severe respiratory illness. People with asthma and other lung conditions may be at higher risk of more serious respiratory complications. Although most EV-D68 cases present with mild respiratory illness, EV-D68 infection has also been associated with neurological features characterized by acute flaccid paralysis in a small subset of cases.

The BCCDC Public Health Laboratory (PHL) is the only site provincially to provide confirmatory EV-D68 diagnosis. Between mid-August and December 2016, the BCCDC PHL performed EV-D68 testing on all specimens specifically referred for that testing and also on a subset of routine laboratory submissions. Routine EV-D68 testing was pursued on respiratory specimens collected from patients ≤ 20 years old, hospitalized patients of any age, patients involved in residential care facility outbreaks or those attending designated community-based sentinel sites. EV-D68 diagnosis by the BCCDC PHL triggered enhanced surveillance and report of associated epidemiological features by local health authorities to the BCCDC.

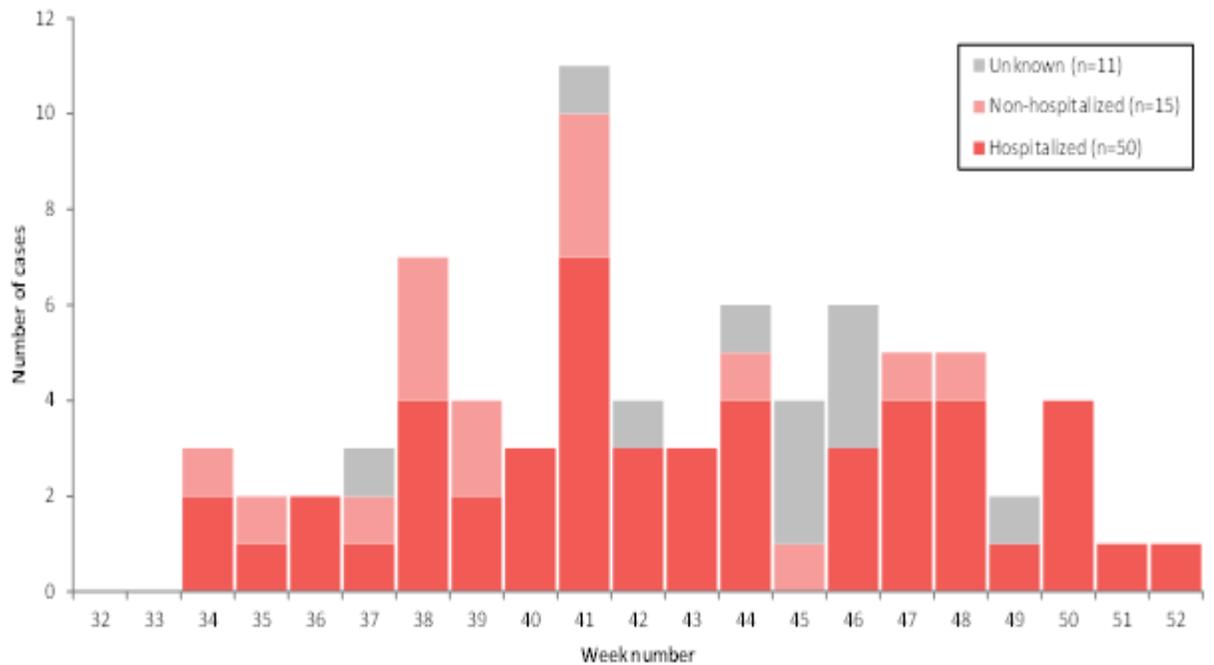
During this period, 76 cases of EV-D68 infection were reported to the BCCDC,^[1] of which at least 50 were severe cases requiring hospitalization; hospitalization status was unknown for 11 reported cases. EV-D68 detections in BC peaked in mid-October 2016 (week 41) (figure 16.1). The median age of cases, both overall and among those requiring hospitalization, was 2 years (range: <1 to 90-95 years and <1 to 65-69 years, respectively). More than three-quarters of cases overall and among those hospitalized (60/76;

79% and 41/50; 82%, respectively) were children <10 years of age, while about half (32/76; 42% and 23/50; 46%, respectively) were infants/toddlers <2 years of age. Males were over-represented among detections overall (49/76; 64%), including among those known to have been hospitalized (35/50; 70%). Two children experienced neurologic illness associated with EV-D68 infection; both cases were <2 years old and presented with arm paralysis. However, it remains unclear to what extent EV-D68 infection caused or contributed to these severe manifestations.

The last nationwide outbreak of EV-D68 occurred in 2014, as described in Euro Surveillance for the enhanced surveillance period spanning end-August to end-October 2014 available from: www.eurosurveillance.org/ViewArticle.aspx?ArticleId=21283. Of note, despite systematic testing of over 700 respiratory specimens at the BCCDC PHL for EV-D68 during August and September 2015, no EV-D68 cases were detected in BC during the fall 2015, consistent with an expected 2-3 year periodicity. The 2014 epidemic, compared to 2016, included more reports associated with neurological features (5 vs. 2) or fatal outcome (3 vs. 0) but a smaller proportion of cases involving children <2 years of age (17% among cases overall and hospitalized in 2014).

1. An additional 3 laboratory-confirmed EV-D68 cases were detected at the BCCDC PHL for which enhanced surveillance information was unavailable.

16.1 Number of laboratory-confirmed enterovirus D68 (EV-D68) cases by hospitalization status and week of specimen collection,* British Columbia, August to December, 2016



* Counts are based on number of cases/patients; where multiple specimens per patient were collected, the earlier collection date was used if specimens were collected on different days.