Infectious Disease Epidemiology Report

Voluntary Reporting of Influenza Testing - Maine, 2007-2008

Synopsis

Influenza is a viral illness that typically occurs during the winter months. Illness is characterized by the abrupt onset of constitutional and respiratory signs and symptoms, such as fever, muscle aches, headache, severe malaise, non-productive cough, sore throat, and runny nose. Influenza is spread from person to person primarily by coughing and sneezing.

Methods

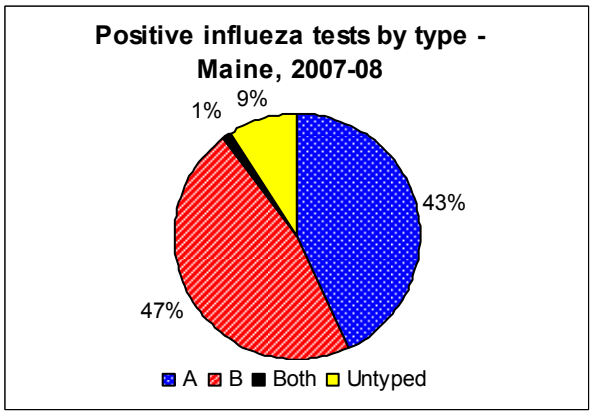
Influenza is not required to be reported in the state of Maine. However, many outpatient offices, laboratories, and hospitals report positive tests including culture, Polymerase Chain Reaction (PCR), Enzyme ImmunoAssay (EIA), Direct Fluorescent Antibody (DFA) and titer results. The majority of tests that were voluntarily reported were rapid diagnostic tests. These tests have varying sensitivity and specificity depending on the prevalence of influenza in the area. Therefore, rapid tests are traditionally not classified as "Lab Confirmed." This convenience sample was entered into a database to look at influenza trends.

Results

During the 2007-08 season, a total of 1,022 positive influenza tests were reported to Maine CDC.

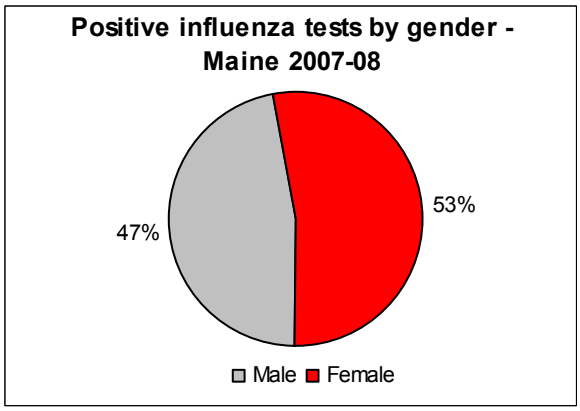
Influenza Type

PCR, culture, titer and many rapid tests are able to distinguish between influenza types A and B. Influenza was classified as type A, type B, co-infected with A and B, or not typed. For the 2007-08 season, 440 patients tested positive for type A, 478 patients tested positive for type B, 9 patients tested positive for both A and B, and 95 patient tests did not differentiate between types.



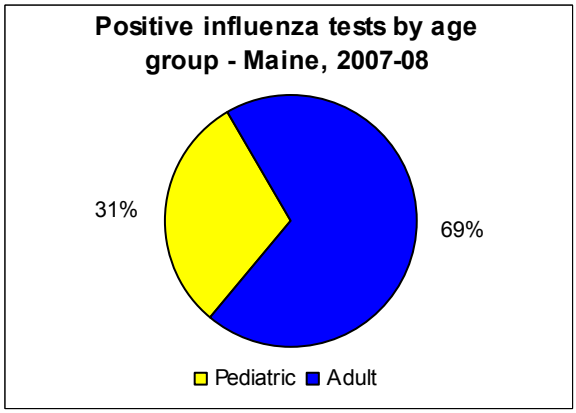
Gender

For the 2007-08 influenza season gender was available for 991 patients; 523 of the patients with positive tests were female, and 468 of the patients with positive tests were male.



Pediatric Burden of Disease

A total of 999 positive influenza reports included the patients date of birth. The date of birth was subtracted from the date of testing and then divided by 365.25 to determine the patient's age in years at the time of the test. Patients were coded as pediatric (under the age of 18) or adult (18 years or older). For the 2007-08 influenza season, 307 of the patients were pediatric, and 692 patients were adult.



Age Distribution

Using the age calculated from the date of birth, the data were arranged into age groups by decade, starting with less than 10 and increasing to greater than 80. The youngest person reported with influenza during the 2007-08 season was 4 weeks old and the oldest was 96. The mean age among reported patients positive for influenza was 36.

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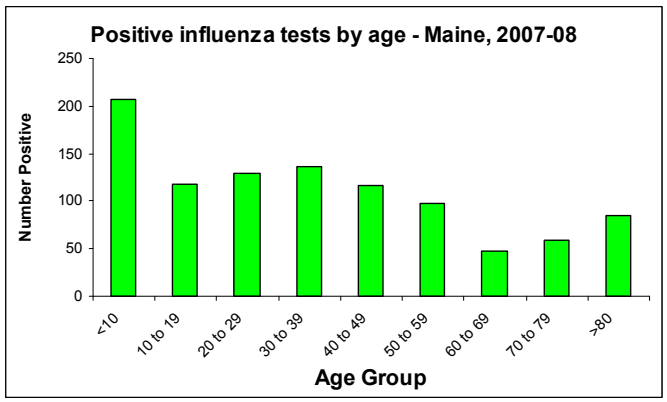
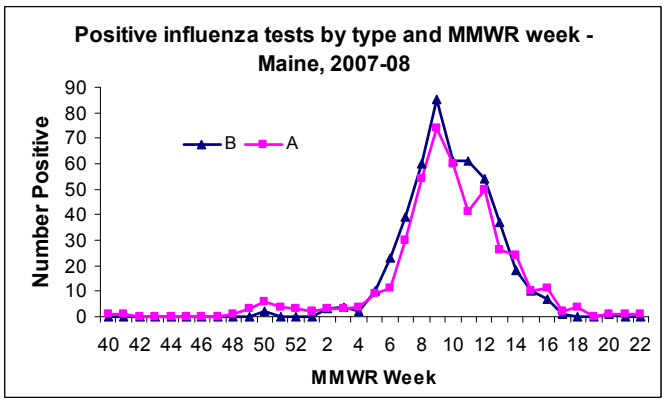




Geographic Distribution

Many of the influenza reports included the city of residence for the patient. For those that did not have a city listed, the city from the reporting source was used. Using this method, city was available for 1,021 patients. These were then coded into county.

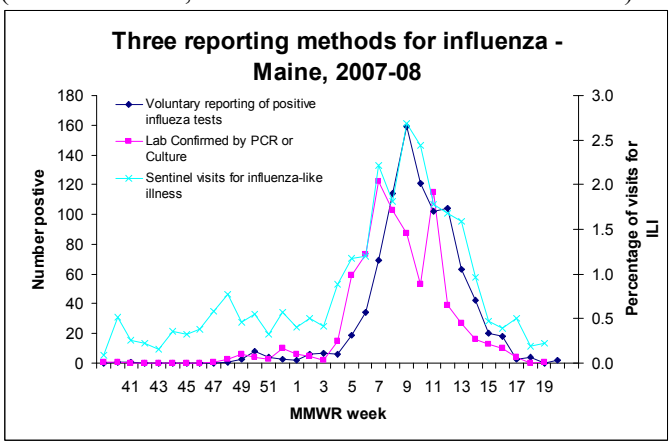
Positive influenza tests by county – Maine 2007-08

County	Number Positive	Percentage of total cases in Maine
Androscoggin	256	25.1
Aroostook	35	3.4
Cumberland	121	11.9
Franklin	24	2.4
Hancock	102	10.0
Kennebec	49	4.8
Knox	22	2.2
Lincoln	90	8.8
Oxford	22	2.2
Penobscot	186	18.2
Piscataquis	5	0.5
Sagadahoc	10	1.0
Somerset	17	1.7
Waldo	25	2.5
Washington	16	1.6
York	41	4.0
Total	1,021	100

Time Frame

There were a few sporadic cases in September, October and November. The positive tests reported to Maine CDC peaked in March with 463 tests reported during the month. The last reported positive influenza tests were in May. Influenza types A and B were both present throughout the entire season, and peaked at approximately the same time.

These voluntary reports paralleled what the state of Maine saw through the traditional surveillance methods (Reference Labs, HETL and Sentinel Provider Network).



Discussion

During the 2007-08 influenza season in Maine, in this sample of positive lab tests, influenza B was reported more than influenza A. In this sample, more positive influenza tests were reported in females than males. Overall, influenza was reported in more adults than pediatric patients. However, the most affected age group was children under ten. Positive influenza tests were reported in this category almost twice as often as any other age category. Androscoggin country reported the most cases of influenza with 256, while Piscataquis reported the least with 5. The 2007-08 season ran from September to May, and peaked in February and March.

Although these results cannot be used to make inferences they do allow us a glimpse at the burden of disease by age group, gender, geographical location, and time of year, as well as demonstrating trends. Even though influenza reporting is not required by the state, those reports received offer an interesting look into the distribution and range of the influenza virus during the 2007-08 influenza season.

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11/20/2008