

Surveillance for Pandemic (H1N1) Influenza in VA Medical Facilities Using VA ESSENCE Biosurveillance System

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Healthcare Associated Infection
& Influenza Surveillance System

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Background

- ESSENCE - Electronic Surveillance System for the Early Notification of Community-Based Epidemics
 - VA's 1° biosurveillance tool
 - Current VA ESSENCE system is based off the original DoD ESSENCE system
 - New, enhanced VA ESSENCE system is in development
- VA ESSENCE pulls ICD-9 codes and patient demographics from outpatient and ED visits from all 153 VA Medical Centers and 700+ outpatient clinics

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Objectives

- Compare demographic and clinical characteristics of VA patients with influenza-coded visits from ESSENCE with manually-reported confirmed VA cases of H1N1 influenza
- Determine what additional data elements should be incorporated into next version of VA ESSENCE
- Monitor trends in ILI and Influenza visits within VA

Methods

- We began conducting routine weekly influenza and influenza-like illness (ILI) surveillance using VA ESSENCE during the 2008-2009 flu season
 - 31 ICD-9 codes are included in the VA ILI syndrome group for analysis
- We reviewed EMRs of all influenza-coded visits in VA ESSENCE during the first week of pandemic H1N1 in VA (April 26-29, 2009)
 - Collected demographic, laboratory, pharmacy and telephone care program data

Methods

- Starting in April 2009, VA required all facilities to report confirmed pandemic H1N1 influenza cases
- We reviewed all manually-reported confirmed VA cases submitted during April-July 2009 for comparison
 - Determined if these cases were captured by our routine VA ESSENCE ILI surveillance
 - What ICD-9 codes did confirmed cases receive?
- Analyses performed using Epi Info 3.5.1

Results

- 104 confirmed cases of pandemic H1N1 influenza from 36 VAMCs were manually-reported and reviewed
- 133 influenza-coded (ICD-9: 487) visits during initial H1N1 period were identified by VA ESSENCE and reviewed
 - ESSENCE influenza visits came from 56 VA inpatient facilities and 30 outpatient clinics

Descriptive Epidemiology

Characteristic	Manually-reported Confirmed H1N1 Cases (N=104)	VA ESSENCE Influenza-coded Visits (N=133)
Female	19 (18.3%)	21 (15.8%)
Median age, (range)	45.5 years* (19-78 years)	53 years (22-93 years)
Evaluated in outpatient clinic	40 (38.5%)*	82 (61.7%)
Evaluated in ED	76 (73.1%)*	44 (33.1%)
Admitted to Hospital	24 (23.1%)*	8 (6.0%)

*Statistically different from VA ESSENCE cases , $p < 0.001$



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Descriptive Epidemiology

Characteristic	Manually-reported Confirmed H1N1 Cases (N=104)	VA ESSENCE Influenza-coded Visits (N=133)
Rapid Influenza Test	76 (73.0%)*	51 (38.3%)
Rapid Test Positive	36/76 (47.2%)*	7/51 (13.7%)
Received Antiviral	55 (52.9%)*	35 (26.3%)
Utilized Telephone Care	19 (18.3%)	38 (28.6%)

*Statistically different from VA ESSENCE cases, $p < 0.001$



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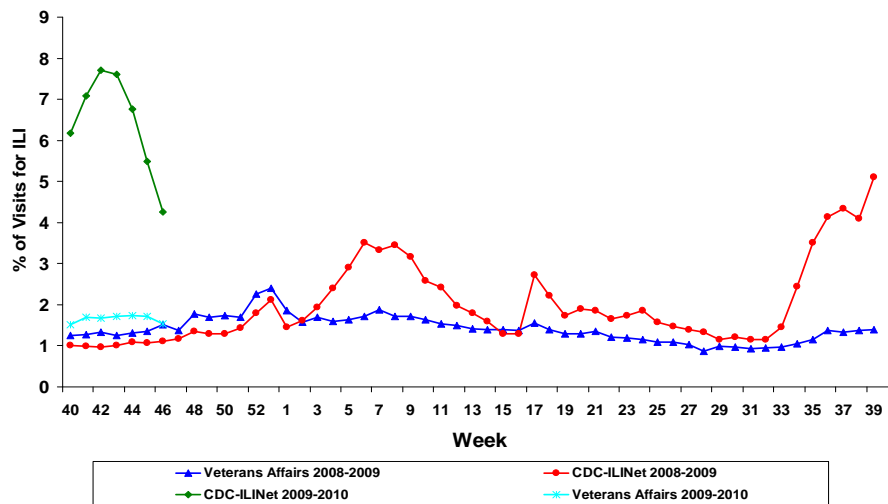


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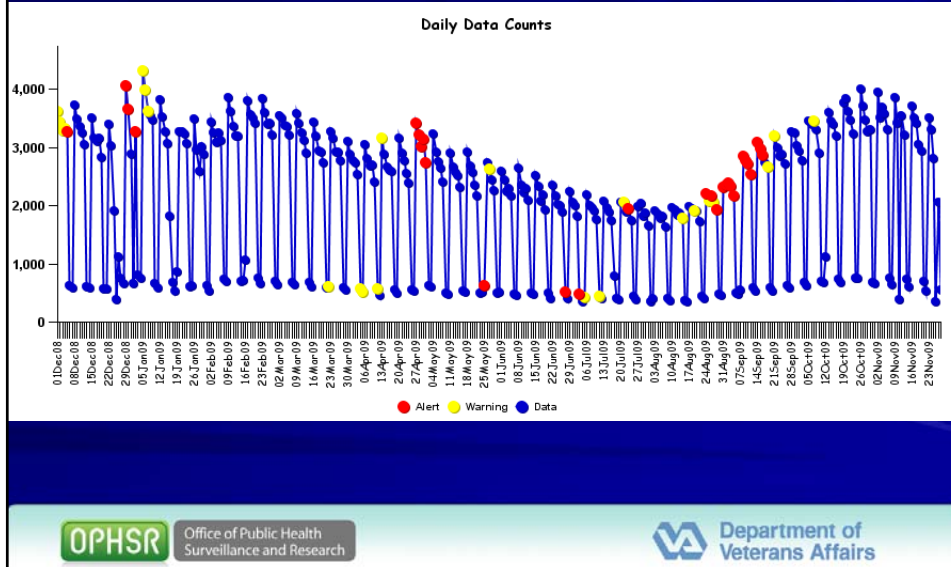
Results

- 95 (91.3%) of manually-reported confirmed cases were captured by VA ESSENCE
- There were 2 deaths among confirmed cases and none among the VA ESSENCE cases
- Only 11 of the 31 defined ILI ICD-9 codes were utilized in coding of confirmed cases
- Top 5 ILI ICD-9 codes in confirmed cases were:
 - 37% Influenza w/ Respiratory Manifest NEC (487.1)
 - 31% Acute URI NOS (465.9)
 - 15% Pneumonia, organism NOS (486)
 - 14% Cough (786.2)
 - 12% Fever (780.60)

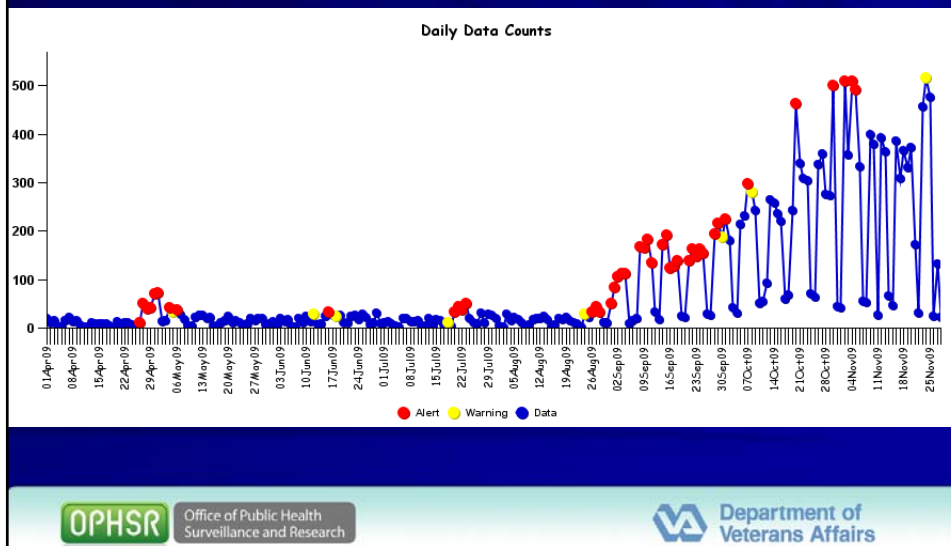
Percentage of Visits for Influenza-like Illness (ILI), VA ESSENCE Surveillance System and the CDC's US Outpatient ILI Surveillance Network (ILINet), 2008-2009 and 2009-2010 Influenza Seasons



VA Visits for Influenza-like Illness



Visits with an Influenza-specific ICD-9 Diagnosis Code



Conclusions

- In this small review, differences were noted between manually-reported confirmed cases and influenza-coded visits identified by VA ESSENCE
- Illnesses in confirmed cases appeared to be more severe as measured by ED utilization, hospital admission, antiviral administration and deaths
- Incorporation of additional data elements (such as laboratory, pharmacy and disposition data) would provide added information on case severity and resource utilization not currently available and reduce the need for manual chart review



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Conclusions

- Inclusion of telephone care data could provide earlier information on potential influenza cases and improve overall situational awareness
- Some of the 31 codes within the VA ILI syndrome group may be dropped to improve specificity
- ILI trends within VA are different from those in the civilian sector and likely reflect the unique patient population and age distribution of VA patients
- A larger review of influenza visits in VA ESSENCE beyond the first week of the pandemic is planned
- Modifications to VA ESSENCE with the addition of these new data elements is underway



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