Enhancing Hepatitis C Surveillance Using Electronic Health Record Data

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ESP: Automated disease detection and reporting for public health

Practice EMR’s → ESP Server → Health Department

diagnoses
lab results
meds
vital signs
demographics
electronic case reports or aggregate summaries

JAMIA 2009;16:18-24
Am J Pub Health 2012;102:S325–S332
Current ESP Installations

- Cambridge Health Alliance
  - 20 sites • 400,000 patients

- Mass League of Community Health Centers
  - 18 sites • 300,000 patients

- Planned Parenthood
  - 4 Sites • 50,000 pts

- Fenway Health
  - 4 Sites • 50,000 pts

- Atrius Health
  - 27 Sites • 800,000 pts

- MetroHealth
  - Cleveland, OH

- Tarrant County, TX
Acute Hepatitis C Algorithm

• Clinical algorithm modeled on CDC/CSTE criteria
  – acute hepatitis, positive test(s) for hep C, no prior evidence of hep C, and negative tests for hep A and hep B

or

• ELISA positive and history of negative ELISA within 1 year

or

• RNA positive and history of negative ELISA within 1 year
Acute Hepatitis C Algorithm

ICD9 for jaundice OR ALT $>$ 200

and

HCV ELISA+ (signal $\geq$ 3.8 if reported) or RNA+
RIBA+ (if done)
HCV RNA+ (if done)

and

HAV IgM or HAV total negative
HBc IgM or HBc total negative
If no hep B core results then HBSAg neg

and

No prior +ELISA or HCV RNA or RIBA or ICD9 for hepatitis C
Validation

• Positive predictive value:  90%

• Enhanced case classification
  ✓ 65% of cases reported to the health department by other means were not flagged as acute infections