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 Eastern Virginia Medical School
 Brigid Linnan EMIII

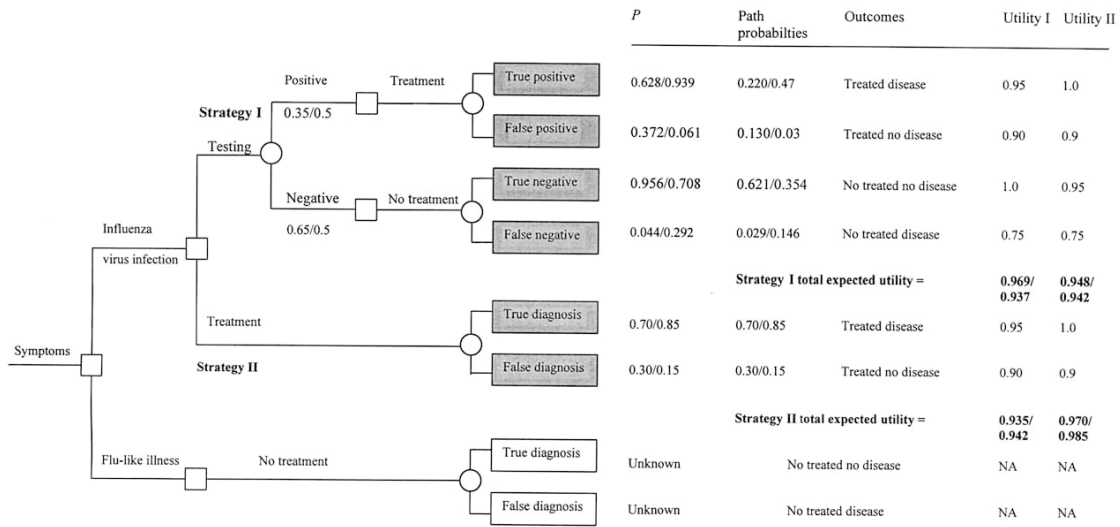
P: In the acutely febrile patient with “flu like symptoms”
 I: is point of care testing (with treatment of positive results)
 C: compared to empiric treatment alone
 O: associated with a better outcome

Fun facts:
 POC flu testing Sensitivity 77% Specificity 99% (Stein found Sensitivity <56%)
 The mortality rate of untreated influenza in high-risk patients is up to 25% (Nicholson et al.,1998)

| Article | Pt group | Study type | Outcomes | Key results | Weakness |
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| <p><i>Does This Patient Have Influenza?</i> Call, S. et al JAMA 2005; 293: 987-997</p> | <p>915 articles found -17 contained data on flu dx based on symptoms and signs using an independent criterion standard -11 eliminated -6 studies used</p> | <p>Meta analysis</p> | <p>-No symptom or sign had a summary LR greater than 2 in studies that enrolled patients without regard to age. -absence of fever (LR, 0.40), cough (LR, 0.42), or nasal congestion (LR, 0.49) were the only findings that had summary LRs less than 0.5. -patients >60 the combination of fever, cough, and acute onset (LR, 5.4), fever and cough (LR 5.0) fever alone (LR, 3.8), malaise (LR, 2.6), and chills (LR, 2.6) had greatest increased likelihood -Sneezing in older patients made influenza less likely (LR, 0.47; 95% CI, 0.24-0.92)</p> | <p>“Clinical findings identify patients with influenza-like illness but are not particularly useful for confirming or excluding the diagnosis of influenza. Clinicians should use timely epidemiologic data to ascertain if influenza is circulating in their communities, then either treat patients with influenza-like illness empirically or obtain a rapid influenza test to assist with mgmt decisions”</p> | <p>Few articles No real conclusion</p> |
| <p><i>Treat or test first? Decision analysis of empirical antiviral treatment of influenza virus infection versus treatment based on rapid test results.</i> Sintchenko, V. et al. Journal of Clinical Virology 25 (2002) 15–21 Sydney Australia</p> | <p>adult patients with influenza-like illness who did not require hospital admission.</p> | <p>-threshold decision analytic model -decision analysis tree with two branches of competing strategies for patients with clinical diagnosis of influenza, and one branch for patients in whom the diagnosis was excluded</p> | <p>-in the non-epidemic (probability of infection <10%), up to 30% of patients who receive empirical treatment would be flu neg. Testing first would reduce over-treatment to 13%. -In on outbreak when the community influenza attack rate is between 10 and 30%, 4–15% of pts with flu may miss specific treatment due to false-negative rapid test result, but clinicians have better accuracy of clinical diagnosis. Inappropriate empirical less likely due to a smaller proportion of incorrect diagnoses (15 vs. 17.6%)</p> | <p>If community prevalence of dz >= 42% better to treat If low risk and outside of an “outbreak” better to test first</p> | <p>How many Patients? -?accuracy of clinical and lab dx of infxn based entirely on MD decision tree directed to best outcome -limited to uncomplicated influenza in adults -immunization, type and virulence of viral strains</p> |

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|--|--|---|---|---|---|
| <p><i>Effect of POC Influenza Testing on Mgmt of Febrile Children.</i> Iyer, S. AEM2006; 13:1259–1268 Cincinnati, Ohio</p> | <p>700 (out of 767 eligible) Febrile children 2-3 months T>38 and 3-24 months T>39</p> <p>Excluded: -preexisting chronic lung disease (CF), -complex congenital heart Disease -Immuno compromised state -critical acuity level -medical contraindication to nasalswab -previous enrollement within last month.</p> <p>Asthma/ RAD OK</p> | <p>prospective, quasi-randomized , controlled trial</p> <p>study was conducted during two consecutive influenza outbreaks: 1/27/03 - 3/31/03 & 12/8/03 - 1/29/04, based on info from infection control @ hospital</p> <p>Randomize d by day</p> <p>Of 700 pts 345 poc, 355 st</p> | <p>-No significant differences between the POCT and ST groups with respect to lab tests or chest xrays ordered, abx given, admission, return visits to ED, length of stay, or visit-associated costs.</p> <p>-In the subgroup analysis, the adjusted odds ratios (ORs) for blood culture in influenza test—positive to —negative patients were 0.59 and 0.71 in the POCT and ST groups, (p = 0.088). The adjusted ORs for urine culture in influenza test—positive to —negative patients were 0.46 and 0.67 in the POCT and ST groups (p = 0.005)</p> | <p>Overall slightly lower abx, blood CX and UA/UCX ordered in all flu positive pts regardless of type of test</p> <p>Statistically significant reduction in UA/UCX ordered in POC+ pts</p> <p>No pts with + flu who also had + blood cx</p> | <p>Immunizati on status not addressed</p> <p>Research assistants</p> <p>Limited follow up</p> |
| <p><i>Performance Characteristics of Clinical Diagnosis, a Clinical Decision Rule, and a Rapid Influenza Test in the Detection of Influenza Infection in a Community Sample of Adults.</i> Stein, J. et al. Ann Emerg Med. 2005;46:412-419.] San Francisco, CA</p> | <p>258 consecutive adults presenting to a university emergency department or urgent care clinic between January and March 2002 with acute respiratory complaints</p> <p>excluded: known increased CRP pathologies (vasculitis, HIV, trauma/burns w/in 7 days, AMI or angina, autoimmune d/o, current abx</p> | <p>Prospective study</p> <p>Pts consented and tested in triage, symptom inventory taken</p> <p>MD blinded to test result</p> <p>MD? "does this pt have the flu?"</p> <p>Cough & fever rule (Monto, 79% PPV)</p> | <p>Fifty-three of 258 (21%) patients had a positive influenza test.</p> <p>-clinician judgment: sensitivity of 29% specificity of 92%</p> <p>-rapid influenza test: sensitivity 33% specificity of 98%</p> <p>-clinical prediction rule: sensitivity of 40% specificity of 92%</p> <p>Clinician judgment patients presented w/in 48 hrs: sensitivity of 67% specificity of 96%</p> <p>Neither the rapid influenza test (P=.10) nor the clinical prediction rule (P=.42) was superior to clinician judgment alone in the diagnosis of influenza</p> | <p>"The suggestion that a clinical decision rule or a rapid influenza test is better than clinical judgment alone for the diagnosis of influenza in an unselected patient population is not supported by this study."</p> | <p>Immunizati on status not addressed</p> <p>Done during an outbreak</p> |

Clinical Bottom Line: Based upon current available edvidenc there appears to be limited data in support of routine testing for influenza. Combining epidemiologic data with the combination of fever, abruptness in onset and cough appears to be associated with a LR of >5.0. Some discussion participants agreed that positive rapid testing for flu in the ED, particularly in the very young and old predisposed clinicians towards withholding unnecessary additional studies.



Clinical Decision Tree

Treat or test first? Decision analysis of empirical antiviral treatment of influenza virus infection versus treatment based on rapid test results. Sintchenko, V. et al. Journal of Clinical Virology 25 (2002) 15–21