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Title

Development and external validation of the FluScoreVax risk score for influenza that incorporates vaccine status (EAST-PC)

Priority 1 (Research Category)

Acute respiratory infections

Presenters

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Abstract

Objective: To develop and externally validate a simple risk score for influenza diagnosis based only on vaccination history and patient-reported symptoms. Study design and Analysis: Derivation of a risk score in one population and prospective external validation in a second population. Setting or Dataset: Adults presenting to the outpatient setting in 12 European countries during flu season with a chief complaint of acute cough between 2007 and 2010 were used to derive and internally validate the risk score (GRACE data). It was then externally validated in a contemporary US population (EAST-PC data). Outcome measures: In each study patient-reported symptoms were recorded and PCR used to diagnose influenza. Accuracy was measured using influenza prevalence in each risk cateogory and the area under the receiver operating characteristic curve (AUC). Calibration was assessed by plotting observed versus expected. Results: We developed a risk score with 6 items (subjective fever, interfered with usual activity, headache, wheeze, phlegm, and recent flu vaccine) and a range from -5 to 6 points. The AUC was 0.75 for both derivation and internal validation subgroups. The prevalence of influenza was 15.1% in the GRACE data and 14.4% in the EAST-PC data. The percentage with influenza in the low, moderate and high-risk groups was 6.1%, 21.4% and 40.0% in the internal validation population and 6.8%, 21.8%, 35.3 in the external validation population. The percentage of participants classified as low, moderate, and high risk for influenza was 60.7%, 26.5% and 12.7% in the external validation. Calibration was excellent. Conclusions: We developed and externally validated the FluScoreVax that incorporates vaccination status and is potentially useful in telehealth and primary care settings using this app (https://ebell-projects.shinyapps.io/FluScoreVax/).

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