Who Gets Treated for Influenza: Predictors of Antiviral Prescription Receipt Among Children with Outpatient Influenza-Like Illness

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Background

- The highest incidence of influenza occurs in children aged 2-17 years of age.
- Current guidance recommends antiviral use for non-hospitalized individuals with confirmed or suspected influenza who have high-risk conditions or are of young age.
- Antiviral use has been shown to be under-utilized in high-risk groups, especially in children, alluding to the need for a better understanding of factors driving antiviral use.

Methods

- **Study Design:** Retrospective Cohort
- **Setting:** Large primary care network including 31 practices throughout Philadelphia, PA and NJ
- **Study Period:** 4 consecutive influenza seasons (Sept/Oct – May) 2010/11 – 2013/14
- **Data Source:** Shared Electronic Medical Record (EPM®)
- **Study Population:** Children ages 0 – 18 years who presented for an ILI encounter during the study period
- **ILI Case Identification:** ICD-9 codes validated in previous studies for influenza syndromic surveillance
- **Primary Exposures of Interest:** Age group and presence of comorbidities
- **Outcome:** Antiviral prescription receipt
- **Covariates:**
  - Patient sex, race, insurance type, influenza season, influenza test receipt, clinic location, provider experience
- **Statistical Analysis:**
  - Bivariate logistic regression
  - Test predictors for significance (α = 0.05)
  - Threshold for inclusion of covariates in multivariable model (α = 0.15)
  - Multivariable logistic regression includes primary exposure variables and significant covariates
  - Test predictors for significance (α = 0.05)

Results

- There were a total of 45,869 ILI encounters within the primary care network during the study period (Table 1).
- Among these encounters, 442 (0.96%) had an associated receipt of antiviral prescription.
- Age, history of comorbidities, influenza test receipt and provider experience were all independent predictors of likelihood of receiving an antiviral prescription (Table 2).
- Asthma was also a significant predictor of likelihood of receiving an antiviral prescription.

Discussion & Next Steps

- In this study population, children presenting with an outpatient ILI visit rarely received an antiviral prescription.
- The likelihood of receiving an antiviral prescription was significantly associated with older age, receiving an influenza test, and being seen by a provider with 30 years or more of experience.
- While current guidelines recommend antiviral use in individuals with high-risk conditions or who are of young age, children in this cohort who were young or had a history of comorbidities, such as asthma, were less likely to receive an antiviral prescription.
- Due to the non-specificity of the case definition for ILI, it is possible that providers ascribed ILI symptoms to another respiratory virus.
- Children who were covered by Medicaid were also less likely to receive an antiviral prescription compared to children who held private insurance, suggesting a potential socioeconomic disparity in antiviral receipt.
- Future work will observe within and between clinic differences to better understand drivers of antiviral treatment practices in this pediatric population.

Conclusions

Among this sample of children with outpatient ILI, those considered high-risk for influenza complications were less likely to receive an antiviral prescription by a clinician.

Increased efforts are needed among clinicians to improve awareness and consistent application of influenza treatment guidelines.

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References