Effectiveness of Influenza Vaccination against Influenza-related Hospitalizations among Children: A Systematic Review

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ABSTRACT

Objectives: To assess the effectiveness of influenza vaccination in reducing the risk of influenza-related hospitalizations in the pediatric population.

Methods: A thorough search across four databases identified 412 relevant publications. After removing duplicates using Rayyan QCRI and screening for relevance, 196 full-text articles were reviewed, with 8 studies ultimately meeting the criteria for inclusion.

Results: We included eight studies with a total of 3,648,778 children. Most studies reported using live attenuated influenza vaccines (LAIV) and inactivated vaccines for the included children. The studies consistently show that influenza vaccination significantly reduces the risk of severe outcomes, including hospitalizations and emergency visits, especially among children and young populations. Even in seasons with strain mismatches or antigenic drift, the vaccine maintained approximately 40% effectiveness in preventing hospitalization. Vaccination provided notable protection for children under five, a group particularly vulnerable to severe complications. Both inactivated and LAIV demonstrated effectiveness in lowering hospitalization rates across different seasons, underscoring the importance of annual influenza immunization.
Conclusion: In conclusion, influenza vaccination is effective in reducing influenza-related hospitalizations, particularly among young children who are at heightened risk for severe disease. Even in seasons with antigenic variation, the vaccine demonstrated protective benefits, reinforcing its value in public health strategies aimed at reducing the burden of influenza. These findings advocate for increased vaccine coverage, particularly in vulnerable populations, to mitigate hospitalizations and support healthcare systems during influenza outbreaks.

Keywords: Influenza vaccination; Hospitalization prevention; Vaccination effectiveness; Children; Systematic review.

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