

Addressing Immunization Registry Population Inflation in Adolescent Immunization Rates

STEVE G. ROBISON, MPH^a

ABSTRACT

Objective. While U.S. adolescent immunization rates are available annually at national and state levels, finding pockets of need may require county or sub-county information. Immunization information systems (IISs) are one tool for assessing local immunization rates. However, the presence of IIS records dating back to early childhood and challenges in capturing mobility out of IIS areas typically leads to denominator inflation. We examined the feasibility of weighting adolescent immunization records by length of time since last report to produce more accurate county adolescent counts and immunization rates.

Methods. We compared weighted and unweighted adolescent denominators from the Oregon ALERT IIS, along with county-level Census Bureau estimates, with school enrollment counts from Oregon's annual review of seventh-grade school immunization compliance for public and private schools. Adolescent immunization rates calculated using weighted data, for the state as a whole, were also checked against comparable National Immunization Survey (NIS) rates.

Results. Weighting individual records by the length of time since last activity substantially improved the fit of IIS data to county populations for adolescents. A nonlinear logarithmic (ogive) weight produced the best fit to the school count data of all examined estimates. Overall, the ogive weighted results matched NIS adolescent rates for Oregon.

Conclusion. The problem of mobility-inflated counts of teenagers can be addressed by weighting individual records based on time since last immunization. Well-populated IISs can rely on their own data to produce adolescent immunization rates and find pockets of need.

^aOregon Health Authority, Immunization Program, Portland, OR

Address correspondence to: Steve G. Robison, MPH, Oregon Health Authority, Immunization Program, 800 NE Oregon St., Ste. 370, Portland, OR 97008; tel. 971-673-0306; fax 971-673-0278; e-mail <steve.g.robison@state.or.us>.

©2015 Association of Schools and Programs of Public Health