**Introduction**

School-Based Health Centers deliver preventive and primary care services in an accessible setting and are a very important part of the health care system for school-aged youth in Oregon. As of January 1, 2016, Oregon had 76 certified SBHCs spread across 22 counties. These SBHCs deliver important clinical preventive services, treat acute and ongoing health issues and reduce time spent out of the classroom. While we suspect that many of the services delivered by SBHCs are cost effective, little data exists that quantifies the return on investment (ROI) for these services. Given the large number of vaccines that SBHCs deliver each year, this project focused on the ROI of SBHC’s providing flu shots to school-aged youth ages 5-21 during the 2013-2014 school year.

**Methods**

Flu vaccine data was pulled from the 2013-14 SBHC encounter data set that is held by the Oregon SBHC State Program Office to determine the number of vaccines administered by age and insurance type, based on active flu vaccine CPT codes for the 2013-14 flu season. Cost for service data was estimated using published data, 2014 Medicaid Fee Schedule figures, and statistics from the state Vaccines for Children Program. When possible, data was extracted at the state level and supplemented with national figures as necessary. Non-medical costs were adjusted to 2014 dollars.

**Assumptions**

Assumptions used in the analysis include:

- 31% of our sample population would obtain a flu shot elsewhere and 69% would remain unvaccinated for the season.
- Of the total population, 10% of individuals would acquire the flu at some point during the season.
- Both direct and indirect benefits were calculated. Direct benefits include averting costs associated with outpatient, emergency department and hospital visits, as well as medication costs for those that get the flu. Indirect benefits include cost savings on travel expenses and additional revenue from parents not having to miss work. Benefits are outlined in Figure 2 by the category of savings they are associated with.

**Results**

We found the 2013-2014 cost savings to the state and federal government and individuals from administering flu vaccines through the SBHCs to be $53,999. Given that the annual cost to administer the vaccines through the SBHCs totaled to $31,732 for the state of Oregon, the calculated return on investment was $24.42 for every $1 invested in the program. Of this amount, savings in outpatient costs (37% of the total) and savings from the cost of receiving the shot elsewhere (31%) comprised the majority of benefits. Return on investment summary statistics by insurance status are listed in Table 2.

**Limitations and Next Steps**

While this study offers a detailed analysis of the financial implications of providing flu shots in SBHCs, there are several limitations that should be noted:

1. Costs for the flu vaccine were limited to what is paid by the federal/Vaccines for Children program and/or an estimated out-of-pocket cost for privately insured or uninsured children.
2. We did not account for the cost to the private insurer, or additional cost of the vaccine if part of a larger capitated Medicaid visit.
3. We did not account for any costs arising from side effects from the flu vaccine. While these are typically quite mild, there may be limited direct or indirect costs associated with side effects.
4. Probability of outcomes (spread of illness, likelihood to develop flu, hospitalization rates, etc) depend in part on the efficacy of the flu shot and the severity of the flu virus, both of which can vary moderately from year to year.
5. Estimates of benefits were derived from the most up-to-date and available data, but do not necessarily reflect actual outcomes of SBHC families (e.g., estimating lost parental income based on median employment and income data for Oregon). Data on the flu is not collected at the state wide level outside of hospital admissions; statewide estimates on prevalence of flu and percent of children who see the doctor for flu were estimated from other data sources.

Now that this ROI model has been developed, the SBHC State Program Office would like to update the numbers for the 2014 and 2015 school years and provide SBHC-level estimates for sites to be able to use with their local communities. We also are planning to extend this type of analysis into other SBHC services in Oregon to bolster the available information on the economic impacts of SBHCs.

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