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Title: Association between measles vaccine refusal during the period 2005-2016 and the popular voting on the revision of the Epidemics Act in 2013 in Switzerland

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Abstract

Introduction

Measles elimination in the European Region by 2015 was a goal of the WHO and of Switzerland, but was not met due to criticisms concerning the vaccination and other reasons. In 2013, there was a vote on a referendum against the revision of the Epidemics Act from 1970. We quantified the relationship between the prevalence of children unvaccinated for measles and the rate of rejection of the law revision.

Method

Measles vaccination data for children aged 2, 8, and 16 years collected during 4 survey periods of the Swiss National Vaccination Coverage Survey were analyzed. We used the cantonal results from the referendum for revision of the Epidemics Act as a proxy for the population's attitude towards vaccination. We computed the prevalence of children not vaccinated for each age group in each canton. We then performed simple linear regressions of prevalence against rejection rate to determine the coefficient for each survey period and age group. The coefficient is the increase in the prevalence of children not vaccinated for measles per 10% change in the rejection of the referendum.

Results

We analyzed data for 99,055 children. The median cantonal level of rejection of the revision of the Epidemics Act was 43.3% (cantonal range: 22.2% - 55.1%). The median cantonal prevalence of children not vaccinated against measles for all three age groups was 6.8% (0.8% - 27.6%). The coefficients of the survey periods 2005-07, 2008-10, 2011-13 and 2014-16 for 2 year-olds were 5.5, 4.0, 3.0 and 2.1, for 8 year-olds 3.6, 3.3, 3.7, 3.1 and for 16 year-olds -0.3, 0.6, 1.4 and 1.7, respectively.

Conclusion

This study shows an association between the prevalence of children not vaccinated against measles and the vote against revising the Epidemics Act, confirming that attitudes towards vaccination do have an impact on public health policy. The trend of coefficients shows that the susceptibility for vaccine criticism increased between 1990 and 1998 and decreased between 2005 and 2016.