

Seasonal influenza vaccine effectiveness against influenza and influenza like illness in 2013-2014, a nationwide cohort study conducted in Finland

Introduction

In the Finnish National Immunization Program, seasonal influenza vaccination is recommended since 2007 to children aged 6 to 35 months, since 2002 to adults aged 65 years and older, and before that only to other risk groups. The vaccination coverage of the last 3 seasons has been constant. Between August 2013 and April 2014, 15.4% of the children and 41.8% of the elderly were vaccinated. Evaluating the seasonal influenza vaccine's effectiveness is essential for the assessment of the National Immunization Program's performance and the development of future preventive policies.

Methods

Population and vaccination data were provided by the Finnish Population Register and the National Vaccination Register. Cases of laboratory confirmed influenza and influenza like illness (ILI) were retrieved from the National Infectious Disease Register and the National Primary Healthcare Register, respectively. The registers were linked via a personal identification code assigned to all Finnish residents (5.45 million).



Figure 1: Map of Finland. More than 90% of the Finnish population lived in municipalities that are presumably covered by the National Vaccination Register from August 2013 to April 2014.

Methods (cont.)

Effectiveness estimates were calculated using the count of vaccinated and unvaccinated cases that occurred between January and April 2014, as well as the person-time the population was vaccinated and unvaccinated.

Results

Influenza diagnoses of 281 children and 668 elderly were laboratory confirmed. The effectiveness against laboratory confirmed influenza was estimated with 38% in children and 34% in the elderly. Corresponding figures for seasonal influenza vaccine effectiveness against ILI diagnosed in primary health care were 54% and 37%. 191 children and 187 elderly were diagnosed with ILI. Subtyping of laboratory confirmed influenza was done, but insufficient for meaningful calculations.

Conclusions

In 2013-2014, the Finnish seasonal influenza vaccine effectiveness figures are in line with mid-season figures from Spain.¹ Surprisingly, effectiveness estimates for the less specific outcome ILI were higher than for laboratory confirmed influenza, particularly in children, although it is noteworthy that the confidence intervals of the estimates overlap in both age groups. Reporting encouraging effectiveness figures will support a higher seasonal influenza vaccine uptake in the population, the target for a better protection against influenza.²

References

1. Jimenez-Jorge S, et al. Euro Surveill. 2014;19(9):pii=20727.
2. Mereckiene J, et al. Euro Surveill. 2014;19(16):pii=20780.

Table 1: Seasonal influenza vaccine effectiveness against laboratory confirmed influenza and influenza like illness in 2013-2014.

	Age group	Cases		Person-years		Effectiveness (%) and 95% CI
		Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	
Influenza	6 to 35 months	27	254	6750	39208	38.26 (8.19-58.48)
	65 years and older	210	458	128324	185478	33.73 (21.97-43.71)
Influenza like illness	6 to 35 months	14	177	6750	39208	54.06 (20.84-73.34)
	65 years and older	57	130	128324	185478	36.63 (13.48-53.58)

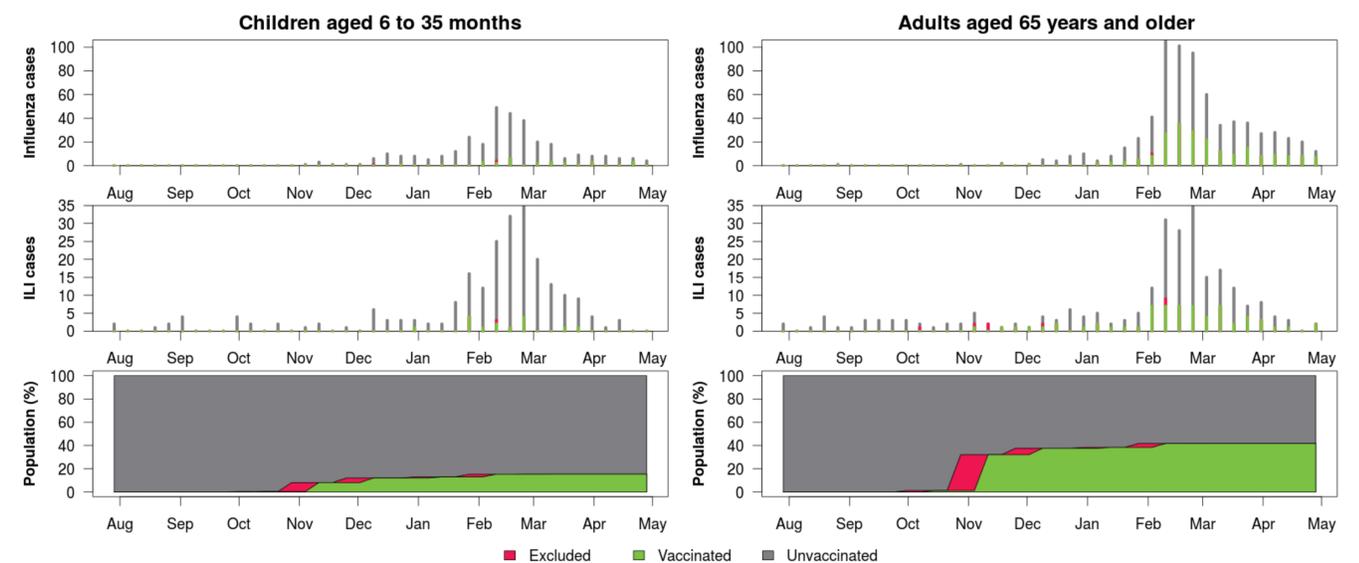


Figure 2: Weekly number of laboratory confirmed influenza and influenza like illness cases and cumulative seasonal influenza vaccination coverage among children and the elderly from August 2013 to April 2014. Cases and population-time accumulating within 14 days after vaccination were excluded.



Contact information