

Rapid communications

AN INTERACTIVE CENTRAL DATABASE OF VACCINATIONS IN ICELAND

T Gudnason (thorolfur@Landlaeknir.is)¹, H Briem¹

1. Health Security and Infectious Disease Control, Directorate of Health Reykjavik, Iceland

Vaccinations are regarded as the most cost-effective health care intervention available [1,2]. Vaccines prevent disease by stimulating a protective immune response in the individual and creating a 'herd immunity' in the society [3].

To obtain the full benefits of vaccinations, vaccines need to be widely available, affordable, safe, immunogenic and used by as many people as possible. All health authorities should have these clear goals in mind in order to obtain the maximum benefits of vaccines.

If these goals are to be achieved, a properly functioning system for recording individual vaccinations is essential. In most countries, vaccinations are currently registered at the site of vaccination, resulting in difficulties in obtaining reliable indicators of vaccine coverage, efficacy and adverse effects; an improved registration system is therefore necessary. A centralised national recording system of vaccinations is a powerful tool for public health authorities because it:

- provides reliable information on vaccine coverage;
- provides necessary information for estimating an outbreak of vaccine-preventable diseases;
- provides information for studying vaccine efficacy;
- keeps track of unvaccinated and partially vaccinated individuals who will be at risk of acquiring a vaccine-preventable disease;
- provides the opportunity to study the adverse effects of vaccinations by linking to a database of clinical diagnosis;
- provides a quick and reliable history of individual vaccinations, regardless of where they were carried out;
- provides the tool for supervision of financial resources allocated to vaccinations.

It is also hoped that in the future such a system could provide the possibility for individuals to download their own vaccination history from the database over the internet.

In Iceland, vaccinations have, until now, only been registered at the health centres where they were carried out. In 2003, a pilot research project on a national central database on vaccinations was initiated by Iceland's chief epidemiologist and approved by the Icelandic Data Protection Authorities. For this project, the technical feasibility of an interactive central database was studied. The database was connected, via the internet, to electronic journal systems at 15 health centres across the country, and information on the vaccinations and the vaccinees were transferred automatically in real time into the database. Information on older vaccinations registered at the health centres were also transferred into the

database. Health workers at the connected centres could also retrieve information on individual vaccinations from the database over the internet by the same route.

The project successfully concluded in 2005 and it was felt that the database had been a secure and very useful tool for both health authorities and health workers.

In 2007, the Ministry of Health decided to launch a program in which the central database will be connected to all health institutions in Iceland in a similar way as described above. It is anticipated that all institutions will be connected and operational this year and that the database will include information of all vaccinated individuals in the country.

We are convinced that the database will be very useful to health officials, health care workers and the general public in years to come. It will undoubtedly serve as a model for a central registration of other health-related information required by health authorities, such as the surveillance of diseases and monitoring of health related resources.

Erratum:

A wrong name had mistakenly been given for the first author in this article. The mistake was corrected on 22 October 2008.

References

1. Coffield AB, Maciosek MV, McGinnis JM, Harris JR, Caldwell MB, Teutsch SM, et al. Priorities among recommended clinical preventive services. See comment. *American Journal of Preventive Medicine* 2001;21(1):1-9.
2. Ehreth J. The value of vaccination: a global perspective. Comment. *Vaccine* 2003;21(27-30):4105-17.
3. Fine PEM. Herd immunity: History, theory, practice. *Epidemiol Rev* 1993;15:265-302.

This article was published on 10 January 2008.

Citation style for this article: Gudnason T, Briem H. An interactive central database of vaccinations in Iceland. *Euro Surveill.* 2008;13(2):pii=8010. Available online: <http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=8010>