The burden of infectious diseases in Greenland – means of evaluation and reduction

Project number: EOI 1107

Update:

The IPY provided the opportunity to strengthen surveillance and research on infectious diseases in Greenland. This project, a cooperation between Greenland and Denmark, addressed the burden of infectious diseases in Greenland by establishing research programs to evaluate long-term consequences of certain infectious diseases, to evaluate the use of routine surveillance data, to initiate intervention trials in order to prevent infectious diseases, to seek implementation of results in the Greenland health system and to establish cooperation with public health and research organizations in other countries. Specific studies under this project included a validation of the Greenlandic inpatient register, the initiation of tuberculosis studies (Nielsen et al, 2009; Soborg et al, 2009), an evaluation of the distribution of bacterial pathogens causing invasive disease (Madsen et al, 2009; Meyer et al, 2008; Bruce et al, 2008), a study of the long-term consequences of hepatitis B (Sakamoto et al, 2007; Borresen et al, 2010), a study of the association between Epstein Barr virus and various cancers (Friborg et al, 2009; Boysen et al, 2009), a study of HIV drug resistance (Madsen et al, 2008; Lohse et al, 2008), and a study of the etiology of viral respiratory pathogens among Greenlandic children. In collaboration with Canadian researchers a nationwide study of viral pathogens in children hospitalized with lower respiratory tract infections in Greenland is ongoing. With researchers in Canada, and the USA, the network organization is involved in studies of epidemiological, microbiological, and social aspects of sexually transmitted infections (Gesink et al, 2010).

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Unique tools for population-based infectious disease research in Greenland

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Compared with other Arctic areas Greenland offers unique possibilities for medical research, mainly through the thorough registration of the population. At time of birth each person in Greenland is given a unique personal identification number; a number that follows the person throughout life. Using these numbers as identifiers all persons in Greenland are registered in the Civil Registration System (CRS) that contains updated demographic information on each person.

Infectious diseases are very frequent in native Arctic populations. In Greenland much infectious disease research has been carried out, but mostly in the form of localized field studies.

In connection with the International Polar Year (IPY), grants were given to form a network organization to strengthen the research and surveillance of infectious diseases in Greenland. Part of the purpose was to explore and validate new data sources for research, including the

Greenlandic Inpatient Register, a nationwide register with information of all hospitalizations in Greenland since 1987. In spite of its age and the potentially important source of information represented by the Register, it has not previously been used for research, nor been validated for such. Hence, one of the aims of the network organization was to validate the Inpatient Register.

In this presentation we describe the remarkable possibilities for medical research in Greenland using the CRS and other nationwide registers including the Greenlandic Inpatient Register. Use of these data sources will be exemplified by infectious disease research results obtained by the network organization during the IPY. These examples include studies of vaccine coverage and of the natural history of Hepatitis B infection, risk factors for Tuberculosis infection in children, microbiological causes of meningitis and septicaemia, and regional differences in incidence of respiratory tract infections in Greenland.

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