



DIRECTORATE  
OF HEALTH

Chief Epidemiologist for Iceland

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## CONTENTS:

Health certificates  
for foreigners  
regarding  
communicable  
diseases – TB **p. 1**

Antibiotics  
consumption  
in Iceland **p. 2**

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## HEALTH CERTIFICATES FOR FOREIGNERS REGARDING COMMUNICABLE DISEASES – TUBERCULOSIS

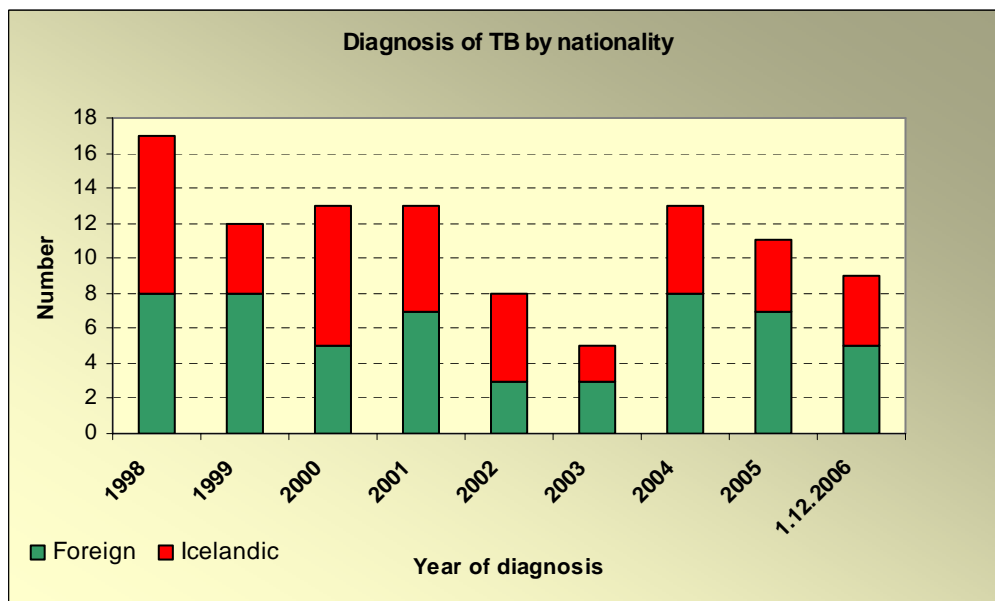
The latest issue of EPI-ICE (November 2006) dealt with infectious diseases that require special monitoring at present among immigrants to Iceland. These diseases are HIV infection, hepatitis B and tuberculosis (TB). The first two were covered in the November issue while the present issue deals with the detection of TB in Iceland today and in the past.

Even though TB has probably existed in Iceland from the beginning of its settlement it did not become a serious epidemic until towards the close of the 19th century, following a pandemic that could be traced to the period of the industrial revolution in England. The epidemic peaked in Iceland in the nineteen thirties, after which it has consistently subsided. After the introduction of antituberculous medication around the middle of the twentieth century the death rate due to TB decreased substantially.

One of the measures adopted to control TB infection was screening among school children by means of tuberculin skin tests. This measure was employed until the nineteen eighties (Gunnbjörnsdottir MI et al. *Laeknabladid* 1996; 82: 690-8) when it was discontinued due to low prevalence of TB. Instead, it was decided to adopt a close surveillance of applicants for residence permits coming from countries where TB is endemic.

In the past decade just over 100 cases of TB have been detected in Iceland, approximately half of them were individuals with foreign citizenship (54%). The figure below shows the number of cases detected since 1997 by nationality. In all the years the majority of cases were foreign nationals. The Icelanders diagnosed with TB, however, are characterised by old age. They were most

*(Continued p. 2)*



*The Icelanders diagnosed with TB are characterised by old age. They were most likely infected in the first part of the twentieth century.*

*There is ample reason to monitor TB infection among immigrants. The general rule should be to consider their country of origin and whether or not TB is endemic in their home country.*

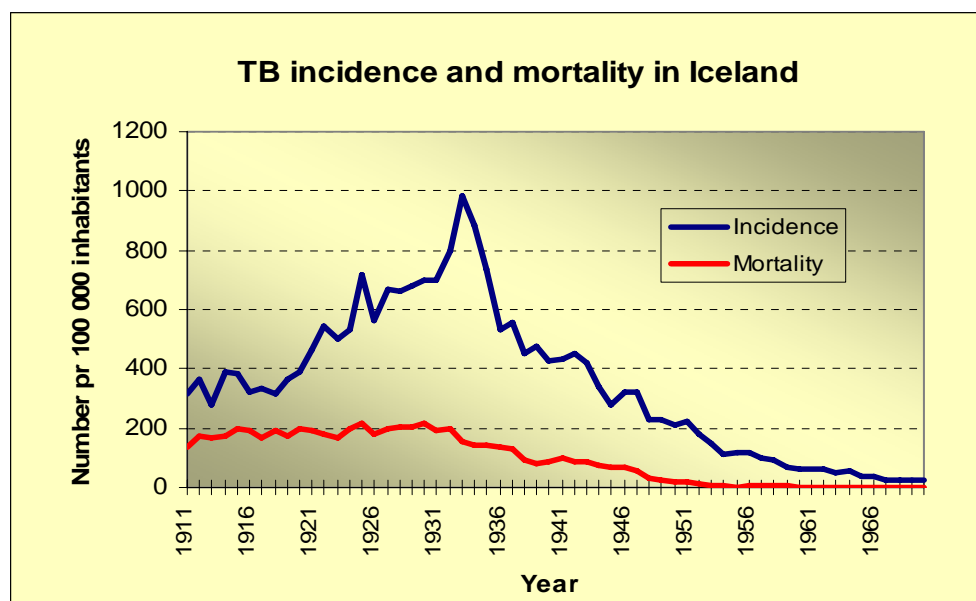
likely infected in the first part of the twentieth century and have been latent carriers of the TB bacterium without becoming ill until their immune system became weakened as a result of old age or diseases. It has also been revealed that new immigrants to the country, who test positive for TB on their arrival, have a tendency to develop active TB within five years (Thorvaldsson S et al. Laekna-bladid 1997; 83: 810-16).

**Supervision**

Detection, preventive therapy and supervision of persons with TB infection are important factors. There is ample reason to monitor TB infection among immigrants to Iceland. The general rule should be to consider their country of origin and whether or not TB is endemic in their home country. In cases where people are applying for temporary residence permits the main emphasis has been on obtaining a chest x-ray in order to

exclude active TB. Other applicants for residence permits undergo tuberculin skin tests. Should these prove positive a chest x-ray is obtained and the person in question receives preventive therapy and is monitored closely.

It is worth considering that when Rumania and Bulgaria become members of the European Union (EU) the incidence of TB in the EU will increase by 50% due to high prevalence of TB in the two countries. This will pose a certain problem for the EU since health certificates are not required for people moving within the Union. The Icelandic Communicable Disease Control Act, however, provides that the Minister of Health can issue regulations requiring all individuals moving to Iceland to be examined, if deemed necessary by the Chief Epidemiologist. In such an event, nationality is of no consequence.



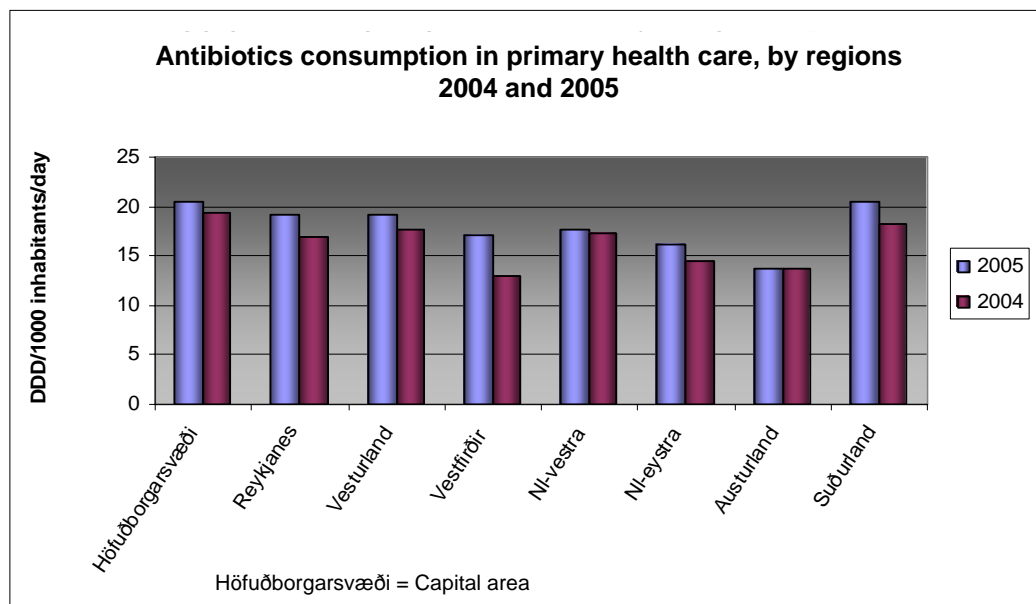
**ANTIBIOTICS CONSUMPTION IN ICELAND**

According to law the Chief Epidemiologist for Iceland is supposed to monitor the consumption of antibiotics in Iceland with the aim of reducing unnecessary consumption and prevent, as far as possible, antimicrobial resistance. The total consumption of antibiotics in Iceland increased by 6% between

the years 2004 and 2005. A similar increase also occurred in most European Union countries. To a certain extent the increase in Iceland can be explained by a severe outbreak of influenza in the beginning of 2005

*(Continued p. 3)*

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which hit the population unusually hard. In 2005, the total sale of antibiotics amounted to 22.9 DDDs (defined daily doses)/1000 inhabitants/day, of which consumption outside health-care institutions constituted 87%.

The consumption of penicillins constitutes 52% of the total antibiotics consumption and is increasing. There has been a considerable increase in the consumption of mixed penicillins (amoxicillin and enzyme blockers). As seen in the table below the consumption of tetracyclines is also on the increase, constituting approximately 24% of the total antibiotics consumption. At the same time the consumption of macrolides is steadily increasing together with other antibiotics in category J01X. The sale of carbapenem and second and third generation quinalones is by far the highest in Iceland

compared with the other Nordic countries. In addition, Icelandic physicians prescribe sulfonamides and trimethoprim to a far greater extent than do their Nordic colleagues.

An examination of antibiotics prescriptions outside health-care institutions reveals an increase between the years 2004 and 2005 in all regions of Iceland except in the East and Northwest. However, there is considerable regional difference in the prescribing of antibiotics.

It is necessary to investigate the reasons for increased antibiotics consumption in Iceland while at the same it is important to encourage physicians to use antibiotics with prudence in order to curb the spread of antibiotics-resistant pathogens.

**Sale of antibiotics, DDD/1000 inhabitants/day (Figures from wholesalers of pharmaceuticals)**

		2000	2001	2002	2003	2004	2005	Change (%) 2004-2005
Tetracyclines	J01A	4,72	4,61	4,80	4,74	5,17	5,39	4,4
Penicillins	J01C	10,35	10,00	10,55	10,31	11,07	11,83	6,9
Cephalosporins	J01D	0,56	0,52	0,54	0,49	0,51	0,53	2,4
Sulfonamides and trimethoprim	J01E	2,19	2,12	1,96	1,92	1,90	1,94	2,2
Macrolides	J01F	1,56	1,52	1,54	1,61	1,69	1,81	7,1
Other aminoglycosides	J01G	0,04	0,04	0,04	0,04	0,04	0,05	24,8
Quinalones	J01M	0,62	0,71	0,71	0,72	0,76	0,79	3,5
Other antibiotics	J01X	0,29	0,32	0,33	0,30	0,50	0,65	29,8
<b>Total consumption J01</b>		<b>20,33</b>	<b>19,83</b>	<b>20,47</b>	<b>20,13</b>	<b>21,65</b>	<b>22,99</b>	<b>6,2</b>