Epidemiology

Epidemiology of infectious diseases in Estonia, Latvia and Lithuania
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The present article discusses trends in the incidences of communicable diseases in Estonia, Latvia and Lithuania, where treatment and control have been adversely affected by political and economic upheaval. Suggestions are made for dealing with the current situation.

Estonia, Latvia and Lithuania, with populations of 1.5, 2.6 and 3.7 million respectively, have undergone considerable political upheaval in recent years and are currently experiencing difficult economic conditions, with adverse consequences for the control of communicable diseases owing to, for example, a shortage of antibiotics. Donated antibiotics have often proved unsuitable for use in these countries on a daily basis, and broad-spectrum cephalosporins have been employed in situations that could lead to the development of bacterial resistance. Laboratory facilities range from the antiquated to the ultramodern. In some laboratories the introduction of sophisticated methods has forced a reduction in resources for routine diagnosis.

The absence of legislation dealing with communicable diseases and food inspection frequently makes control difficult. Data on the frequency of infectious diseases are incomplete and have to be interpreted with caution. The available information on such diseases in adults is discussed below.

Salmonellosis

Between 1980 and 1987, Salmonella was notified in 20/100 000 population in all three countries. A rapid increase followed, with a peak of 180/100 000 in Estonia during 1991. After 1992 there was a decline almost to the previous level. It is thought that outbreaks of S. enteritidis originated in imports of poultry from Russia, which were discontinued in 1991. In Latvia, outbreaks of S. typhimurium in obstetric and paediatric wards have been reported during recent years.

Shigellosis

In 1994 the reported incidences of this disease in Estonia, Latvia and Lithuania were 74, 55 and 64 per 100 000 population respectively.
these figures being about ten times higher than those for many other European countries. Over 70% of cases were attributable to *Shigella sonnei*. The source of the disease is commonly milk and dairy products. Its high frequency is associated with inadequate handwashing facilities and other causes of poor hygiene. Legislation and resources are needed which would allow controls on food served in public places and on factories, producers and food handlers.

**Other enteric diseases**

Methods for the routine diagnosis of *Campylobacter* are being developed. *Giardia lamblia*, being endemic, is seldom looked for. Very few cases of *Entamoeba histolytica* have been reported. Two cases of cholera were introduced into Estonia in 1993. Only a few cases of typhoid are reported annually but there are still about 100 carriers of the disease in each country.

Very few cases of trichinosis and botulism have been reported in Estonia. During the past few years, the former disease has affected about 50 persons annually in Latvia and over 400 annually in Lithuania; the annual figures for botulism in these countries have been 2 or 3 and about 30 respectively. The comparatively high value for trichinosis in Lithuania is largely attributable to the sale of uninspected meat.

**Viral hepatitis A**

In 1994 there were 44 notified cases of hepatitis A per 100 000 population in Estonia, 79/100 000 in Latvia and 139/100 000 in Lithuania, much higher figures than those for other countries of northern Europe. As with shigellosis, poor hygiene has much to do with the high levels of this disease.

During 1993 an outbreak occurred in a small Estonian town. There were 541 cases and the infection spread in the municipal water supply after a pumping station broke down, flooding developed, and surface water entered the system. Of the people who became ill, 63% were adults, suggesting that there had been a decline in the prevalence of antibodies.

In Latvia, however, it is estimated that over 90% of persons aged over 30 years carry antibodies against hepatitis A. Gamma globulin is not routinely used for prophylaxis in any of the countries, and vaccination is still too expensive to be adopted.

**Viral hepatitis B**

Some 15 cases per 100 000 were reported in 1994, 50–60% of them associated with medical settings in which syringes or other instruments were used. Cases of hepatitis B were often linked to poor methods of sterilization and disinfection. Relatively few patients have contracted the disease through blood transfusions, since donors are tested for both hepatitis B and HIV. Between 5% and 10% of cases occurred in health workers. In Estonia the number of cases increased more than twofold between 1992 and 1994, mainly as a consequence of intravenous drug abuse. Vaccination is employed on a limited scale: for instance in Latvia all children born to HBsAg-positive mothers are vaccinated. In Lithuania it is intended to begin vaccinating health workers in 1997.

**Viral hepatitis C**

Serological testing for hepatitis C was introduced recently, and in Latvia many blood donors are already being tested. In Vilnius, Lithuania, over 90% of intravenous drug
abusers were found to be carrying antibodies against hepatitis C; values of 80%, 30%, 10% and 3% were recorded for haemodialysis patients, prisoners, staff in blood centres, and surgical personnel respectively.

**Tuberculosis**

Between 1950 and 1990 there was a steady decrease in the incidence of tuberculosis, but between 1990 and 1994 the number of notified cases doubled, reaching 30/100,000 in Estonia, 41/100,000 in Latvia and 28/100,000 in Lithuania. The figure was only 6/100,000 for Sweden at the same time. Some tuberculosis patients fail to take their medication regularly, with the result that a high level of resistance to isoniazid has developed. Multidrug resistance has been observed in 10–20% of cases.

**Diphtheria**

Until 1992 only single cases occurred. In Estonia 7 cases were notified during 1994; in Latvia 12 cases were reported in 1993, increasing to 250 in 1994; the corresponding figures for Lithuania were 8 and 31 cases. The situation should be viewed against the background of the current diphtheria epidemic in neighbouring Russian Federation and Ukraine. In the Russian Federation the reported incidence increased from 1.3 in 1991 to over 25/100,000 in 1994. The sharp increase in Latvia may have arisen because, for reasons of ethnic origin, half the population retains links with the Russian Federation.

Immunization coverage is similar in all three countries, some 80% of children aged one year having been vaccinated against diphtheria; this level is perhaps too low where the threat of an epidemic exists.

**Sexually transmitted diseases**

The incidence of syphilis increased markedly between 1992 and 1994, when the figures for Estonia, Latvia and Lithuania were 56, 57 and 58/100,000 population respectively. The corresponding values for gonorrhoea were 198, 140 and 149/100,000, and the incidence of this disease too has exhibited a rising trend. These figures are much higher than those for Sweden, where the incidences of syphilis and gonorrhoea were 0.8 and 3.6/100,000 during the same year. The increased incidences of syphilis and gonorrhoea may be attributable to the growth of prostitution and the expansion of travel during the past five years. However, underreporting may have occurred during the pre-independence period. The tracing of contacts takes place only rarely.

Although tests for *Chlamydia* are performed in only certain laboratories there is evidence from Latvia of a rising trend in the incidence of this pathogen.

**HIV and AIDS**

By the end of 1993 only 20–30 cases of HIV infection had been reported, mostly in homosexual men. As yet there have been only a few cases of AIDS. In Latvia almost all hospital inpatients are tested for HIV.

**Leptospirosis**

Leptospirosis occurs fairly frequently, especially in Latvia, where 130–140 cases were reported annually in recent years, most of them involving *Leptospira icterohaemorrhagiae*. Only about 20 cases have been reported annually in Estonia and Lithuania. The comparatively high figures for Latvia can probably be explained by the better diagnostic methods used in this country.
**Tick-borne encephalitis**

During 1994 the reported incidences of this disease were 12/100 000 in Estonia, 53/100 000 in Latvia and 8/100 000 in Lithuania. In Estonia, vaccination used to be available free of charge to all persons but this is no longer the case. Vaccination is rarely performed in Latvia and Lithuania.

**Poliomyelitis, tetanus and brucellosis**

Poliomyelitis has not been reported during the last 10 years. One or two cases of tetanus and brucellosis are reported annually. At present the principal aims should be:

- to halt the increase in the incidence of syphilis and gonorrhoea, through improved partner notification and other measures;
- to improve the treatment and control of tuberculosis, perhaps with the help of legislation on communicable diseases;
- to improve hygiene in medical settings so as to reduce hepatitis B infection;
- to re-establish a meat control programme;
- to monitor the diphtheria situation and improve vaccine coverage against this disease in children.

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**Safety in the laboratory**

The staff of microbiology laboratories, by definition, work with infectious organisms, or materials that do or may contain them. Some of these organisms are pathogenic or potentially so, depending on circumstances and dosage. Avoidance of infection is thus an essential element of the professional expertise of the workers. Safety is good technique – a hallmark of technical excellence in which the staff should take pride. It is necessary to protect not only the microbiologists themselves and their assistants and contacts, but also to protect their materials from possible cross-contamination which may invalidate their work by giving false results.

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