12 Sexually transmitted diseases

These belong to the most occurring infection diseases. The pathogens are usually vulnerable micro organisms; therefore transmission only occurs under preferable circumstances, like sexual intercourse, which helps the transmission by direct contact of mucosa in a combination of optimal temperature and humidity.

The world incidence is about 250 million cases; or one of the 22 world citizens (one of 11 adults; one of 5 persons between the age 20 and 40). It concerns the first seven diseases of the table.

Hepatitis and HIV/ AIDS are also transmitted by contact between bloodstreams.

Table. Sexually Transmitted Dieseases (STD's) in the world (Bron:WHO93).

Disease	**Causal organism**	**Annual incidence(x million)**	**Treatment**
Trichomoniasis	*Trichomonas vaginalis*	120	
Genitalal Chlamydia infections	*Chlamydia*	50	
Genital Humane Papilloma vrirus infections	humane papilloma virus (HPV)	30	none
Gonorrhoea	*Neisseria Gonorrhoeae*	25	penicillin in high doses (there exists much resistence)
Genital herpes	herpes virus, type II	20	Acyclovir
Infectious syphilis	*Treponema pallidum*	3,5	penicillin in high doses
Chancroid	…… *donovani*	2	
partly SOA, partly	**blood borne:**		
Hepatitis B	hepatitis B virus (HBV)	millions	preventive: vaccination; treatment: still experimental
HIV-infection/ AIDS	humane immunodeficiency virus (HIV, mostly type 1)	> 2	anti-retroviral drugs; moreover drugs against opportunistic infectiions; still no vaccine

A high incidence does not have to mean a high prevalence, as we know from the chapter on epidemiological terms. For some diseases, which do not go away without treatment (syphilis)

and others that cannot be treated (HPV, HBV, HIV), a (much) higher number for prevalence is valid than for incidence.
We will go into this a bit more for HIV infection and AIDS, because this disease has increased greatly in numbers and still always is in creasing in countries, where civil engineers go and work. The WHO expected in year 200 a cumulative number of 40 million with HIV infected people from the seventies (partly passed away); the prevalence was then about 20 million. AIDS will compete seriously with now the big death causers as malaria. The relation with tuberculosis (now 3 million deaths per year: 1 of 16 deaths) is a special one. One third of the Africans that are infected with HIV die from tuberculosis. The increasing HIV- and tuberculosis incidences go in this way hand and hand.

HIV infections/ AIDS

HIV stands for Human Immuno-deficiency Virus; it is the cause of the Acquired Immuno-deficiency Syndrome (AIDS). When this immune disorder and its consequences became known in the eighties in America, the disease was called GRID: Gay Related Immuno-deficiency. The first patients were after all homosexuals, which made people think that the transmission route was though homosexual contact.

Now it is clear that in principal everyone runs a risk of this disease.

Heterosexual intercourse is seen as the most important transmission route in the world; only then homosexual contacts and intravenous drug use (needles) comes. To the end of the eighties medical treatment could besides this be the cause: blood and blood products could be infected, which infected for example ten thousand people with hemophilia (in The Netherlands about 170). In 1985 large-scale investigation of blood and blood products became possible more or less cutting out this transmission route. Children of women infected by HIV infection can get infected before or during birth and also though breast-feeding. The HIV infection leads to damage of the defense system. After a while, usually about ten years (with great distribution), this leads to malicious disorders or to (opportunistic) infections, such as *Pneumocystis carinii*-pneumonia (PCP) or tuberculosis. More than hundred conditions in total are described which together with HIV infection lead to the diagnose AIDS. On average the patient (here) lives nowadays a bit more than 2 years. The case fatality rate is not 100 percent, although this is approached, because there are also people, who already have been living with the diagnose AIDS for 5, or even 10 years.

In The Netherlands more than four thousand cases of AIDS have been diagnosed. Most of the patients have however died. The incidence at the moment is stabilized to approximately 400-450 new cases per year (resulting in a prevalence of more than 100 people with AIDS with a life expectation after diagnose of AIDS of 2-3 years). A relatively increasing fraction among patients is women, but amongst them stabilization is showing as well. Amongst men a

decrease of the year incidence is found. Mortality seems to have gone beyond its peak, but this can also be partly because of improved medical intervention.

Although much of life's quality can be improved by fighting against (opportunistic) infections, a good enough therapy does not exist. Vaccination seems even further away, because the virus is very variable and the immune system is difficult to get under control. AIDS had much impact on society. The dignity of many victims and their social performance influenced the way of thinking about disease and health. Many other patients, for example with cancer, find that discussion and solidarity are positively influenced by the confrontation of society with this disastrous disease.

In some parts of the world the AIDS epidemic is greatly increasing. In different African countries a quarter of pregnant women seem to be infected. In Asia (half of the world population) the increase is the largest and in former Soviet Union not much resistance against further distribution is held for various reasons. Death due to AIDS, mainly through (opportunistic) infections as Pneumocystis pneumonia, cytomegalo virus infections and the already mentioned tbc (Africa!), which is now hundred thousand, will without doubt shortly be several millions per year. This will undo the made profit at the expense of infection disease (such as sanitary measures: civil engineering!).

Trichmonas infections Or trichomoniasis (see there)

Genital chlamydia infections

A sexually transmitted disease by *Chlamydia trachomatis* occurs yearly to 100,000 Dutch people, and at least in half of the cases to a woman. Women usually have little complaints, as a result that the consequence can be unexpected: without treatment the complication infertility from inflammation of the Fallopian tube occurs and it involves from a few up to 4 percent of the cases. Consider that 4 percent of 50,000 result in thousand or two thousand times an unplanned infertility. A part of the in-vitro-fertilization is related to the consequences of this disorder. Several hundred just born have besides that eye and lung infections from the transmission of chlamydia.

Gonorrhea

The *Neisseria gonorrhoae* causes the so-called clap by men and usually has less symptoms by woman. The mucosa infection of the genitals is less innocent then one thinks. Some patients get the bacterium in their blood, which can give inflammation of the joints. Women run the risk of infection of the Fallopian tubes (between ovaria and womb) resulting in unwanted infertility. Therapy exists of antibiotics, mainly penicillin. Resistance is not built up; after recovery the disease can come back again.

Syphilis

This disease occurred probably around 1500 in Europe, maybe even directly with Columbus return of his first trip (1492-93). The lues created a slaughtering. Beginning of the sixteenth century the Italian Fracastorio (picture) wrote about the epidemiology and etiology of the new disease, which everyone named after their neighbors (Neapolitan, French, Spanish, etc Disease). He describes a shepherd's boy Syphilis, who is a victim of *Treponema pallidum* (a little similar to the pathogen of the Illness of Weil), as we all now know the pathogen. In later stadium syphilis attacks the nervous system, which the patient can die from. Therapy existed for one out of mercury, which sometimes helped, but gave serious poisoning (see section 1V). In 1909 Paul Ehrlich in Vienna produced an effective remedy: Salvarsan.