Potsdam, March 2011

STOCKTAKING REPORT

COUNTRY-SPECIFIC MEDICAL CONDITIONS IN DIAGNOSTIC AND TREATMENT OF HIV AND HEPATITIS B/C CO-INFECTIONS

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Title

BORDERNETwork STOCKTAKING Report

Report

COUNTRY-SPECIFIC MEDICAL CONDITIONS IN DIAGNOSTIC AND TREATMENT OF HIV AND HEPATITIS B/C CO-INFECTIONS

Date

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PREFACE

The spread of HIV/Aids and other sexually transmitted diseases at the end of the eighties and the early nineties is situated between the collapse of the socialist authoritarian regimes in Middle-, Eastern and South-Eastern Europe and the restructuring of their societies. The Great Transformation of centrally planned economies into liberal market economies changed the health care systems of these countries dramatically.

In the wake of this system collapse socio-economic problems like poverty, a high unemployment rate and the disintegration of normative value systems, led to a vulnerability to HIV/Aids and STIs.

In most of the reviewed countries the health care system developed a couple of years after the fall of the Iron Curtain. Estonia[1] and the Slovak Republic[2] established health insurances in 1993. These health insurances were all citizens' health insurances with high out-of-pocket payments. Romania[3] established a Health Insurance Fund in 1998 with a high co-payment of 30% of the costs for health care. Lastly, in 2003 Poland[4] created a single health insurance company, the National Health Fund, in which all Polish citizens take part.

The present epidemiological situation is the result of the national health care systems' difficulties to adapt. In countries like Estonia, the spread of HIV/Aids and STIs in connection with the drug consumption weakens the regenerative process of societies and leads to a shrinking population and a threat for economic wealth[5]. HIV/Aids affects the socio-economic process in three ways: At first, there are direct costs of the increasing expenses on health care programmes, health insurances or the education of health care professionals. The second issue are the indirect costs which influence the productivity of a single citizen (being absence from the job or indisposition). Finally, there are systematic costs due to negative effects on the working climate or the team spirit[6].

Beside these country-specific problems of the HIV epidemic there are different global challenges. The HIV drug resistance is one of these rising global issues and it is closely connected to the management of Hepatitis B and C co-infections.

Drug resistance requires expensive second-line and third-line therapy regimens and exacerbates the patient's prognosis. The existence of transmitted or acquired HIV drug resistance limits the possibilities of treating both HIV infections and Hepatitis co-infections because important drugs cannot be used and the remaining medications can potentially cause different side effects, as well as drug interactions in the treatment of co-infections. Therefore the prevention of HIV drug resistance also improves the conditions for a good clinical management of Hepatitis co-infections.

THE STRUCTURE OF THE STOCKTAKING SURVEY

Work Package 7

"Referral, management, treatment and care of HIV/STIs and co-infections" started in August 2010. Together with the Robert Koch-Institute (RKI) we created an instrument to get more detailed information about the current situation of HIV/Aids and co-infections in five Eastern- and South-Eastern European countries.

We developed two questionnaires (see appendix) for our cooperation partners and for the treatment specialists who are dealing with HIV/Aids and co-infections.

The questionnaire for the cooperation partners should collect information about the general epidemiological situation in the relevant countries. An additional aim was to gather information about existing national guidelines for the diagnosis and treatment of HIV/Aids, Hepatitis B, Hepatitis C and co-infections.

The questionnaire for the treatment specialists was designed to be more detailed. We tried to find out about the epidemiological situation, the possibilities and standards in diagnostics and treatment they have in their clinics and treatment centres. We sent out 5 questionnaires to our cooperation partners and over 20 questionnaires to different treatment specialists in their countries.

Our cooperation partners also provided our questionnaire through their own networks. Eleven questionnaires were returned to us so far.

Some of the participating medical specialists will be invited to two training and participation workshops in June (Potsdam) and November (Rostock / Szczecin).

1 Merten, M.:
Gesundheitssystem Mittel- und Osteuropas (Teil 7): Estland. Auf Erfolgskurs., in: Deutsches Ärzteblatt Jg. 103, Heft 1-2. 09. Januar 2006, S. A28 – A31

2 Merten, M.:
Gesundheitssystem Mittel- und Osteuropas (Teil 3): Slowakei. Zwei Seiten einer Reform., in: Deutsches Ärzteblatt Jg. 102, Heft 11. 18. März 2005, S. A737 – A740

3 Merten, M.:
Gesundheitssystem Mittel- und Osteuropas (Teil 9): Rumänien. Veränderungen brauchen Zeit., in: Deutsches Ärzteblatt Jg. 105, Heft 19. 09. May 2008, S. A998 – A1000

4 Merten, M.:
Gesundheitssystem Mittel- und Osteuropas (Teil 1): Polen. Bedrückende Resignation., in: Deutsches Ärzteblatt Jg. 101, Heft 47. 19. November 2004, S. A3150 – A3152

5 See:
Barnett, T. and Whiteside, A. Aids in the Twenty-First Century: Disease and Globalization. London: Palgrave Publications, 2002; See also: World Bank / Adeyi, O. et al. Averting Aids Crises in Eastern and Europe and Central Asia. A Regional Support Strategy. Washington, D.C.: World Bank 2003

6 Brunne, V.:
Wie Aids die Weltwirtschaft schwächt., in: Deutsches Ärzteblatt Jg. 104, Heft 43. 26. Oktober 2007, S. A2932 – A2934;

THE FOLLOWING COOPERATION
PARTNERS RESPONDED

The overall aim was to collect relevant data for country-specific guidelines on HIV/ Aids and Hepatitis B/C co-infections. The integration of treatment specialists into a trans-border network was important. This network seeks to improve education materials and find clinical pathways that are adaptable to the regional context and the possibilities of the respective diagnostic and treatment system.

Together with each region's experts Work Package 7 tries to identify possible clinical pathways. The objective was not to establish a universal approach that could not be used in different regions with their specific demands.

Rather, we preferred a contextual approach that considers every country's specific medical conditions and tries to establish functional structures by integrating local specialists.

Figure 1: Feedback of cooperation partners of BORDERNETwork (WP7)

THE FOLLOWING TREATMENT
SPECIALISTS RESPONDED

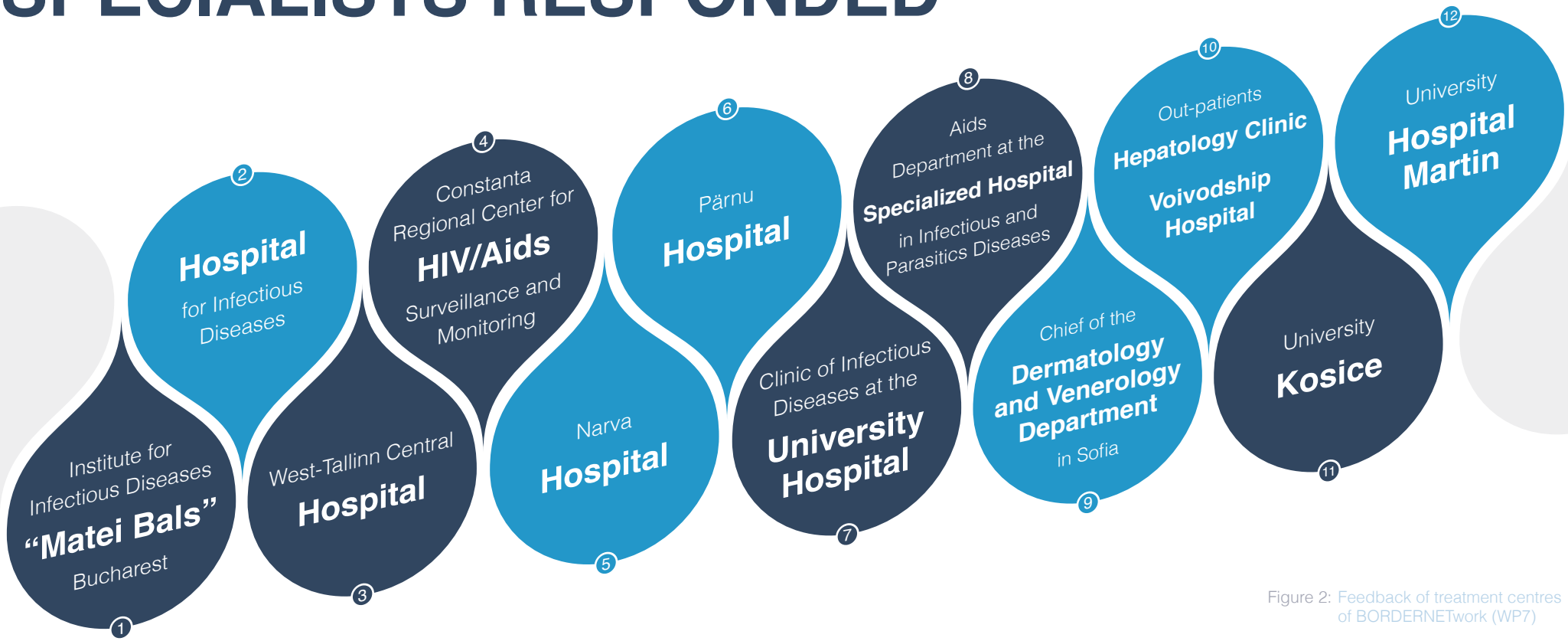


Figure 2: Feedback of treatment centres of BORDERNETwork (WP7)

1 Dr. Adrian Abagiu
Bucharest, Romania

2 Dr. Ramona Delia Ionescu
Brasov, Romania

3 Dr. Kai Zilmer
Tallinn, Estonia

4 Prof. Dr. Sorin Rugina
Constata, Romania

5 Dr. Dmitri Jaaniste
Narva, Estonia

6 Dr. Helve Vestman
Pärnu, Estonia

7 Dr. Vakril Nikolov
Plovdiv, Bulgaria

8 Dr. Toma Tomov
Sofia, Bulgaria

9 Dr. Mariela Hitova
Sofia, Bulgaria

10 Dr. Anita Wnuk
Szczecin, Poland

11 Prof. Dr. Jarcuska
Kosice, Slovakia

12 Dr. Lukas Murajda
Martin, Slovakia

I. HIV / AIDS

A. PREVALENCE

The project BORDERNETwork observes 6 countries from Middle-, East- and South-East-Europe (Bulgaria, Estonia, Germany, Poland, Romania and Slovakia), which are part of the European Union, and one country that is not part of the European Union (Ukraine).

Country	*Population* [1]	*Reported Number of Persons living with HIV/Aids in 2009* [2]	*Estimated Number of Persons living with HIV/Aids in 2009* [3]	*Estimated adult HIV prevalence rate (aged 15-49) in 2009* [4]
Bulgaria	7.497.000	1.109	3.800 [5]	0,1
Estonia	1.339.000	7.320	11.500	1,2
Germany	82.057.000	54.000 [6]	67.000 [7]	0,1
Poland	38.038.000	12.757	27.000 [8] - 100.000	0,1
Romania	21.190.000	16.162	16.000 [8] - 50.000	0,1
Slovak Republic	5.412.000	443 [9]	1.250	< 0,1
Ukraine	45.433.000	161.119	360.000	1,1

Table 1: Overview of the epidemiological situation in selected countries of CEE and SEE

The spread of HIV/Aids and other STIs differs in the observed regions (see Table 3). While countries like Bulgaria, Poland, Germany, Romania and Slovak Republic have a low prevalence rate (0.1), countries like Estonia and Ukraine have a high prevalence rate (>1.0). Analysing the data of the questionnaires and including other data (ECDC, OECD, WHO, UNICEF) makes some differences plainly visible. In comparison with the results of the BORDERNETwork questionnaire the data of the UNICEF especially differs in the cumulative number of persons with HIV in Poland and Romania.

It also illustrates a disparity between reported and estimated values. This might be an indicator of the late establishment of national surveillance and diagnostic systems. In Poland the estimated number of people who are living with HIV and Aids is between two up to nine times (UNICEF / BORDERNETwork) as high as the officially reported number of persons. In Romania the estimated number is the same as the reported number of HIV positive persons (UNICEF) or two times as high (BORDERNETwork questionnaire). In Bulgaria, the Slovak Republic and Ukraine the estimated number is two to three times as high as the reported number of people with HIV/Aids.

1 http://www.un.org/esa/population/publications/population-hiv2010/population-hiv2010chart.pdf (27.02.2011)

2 http://www.unaids.org/en/dataanalysis/monitoringcountryprogress/2010progressreportssubmittedbycountries/ (27.02.2011)

3 Reply of **BORDERNETwork** cooperation partners 2010

4 http://www.unicef.org/infobycountry/ (28.02.2011)

5 ibid.

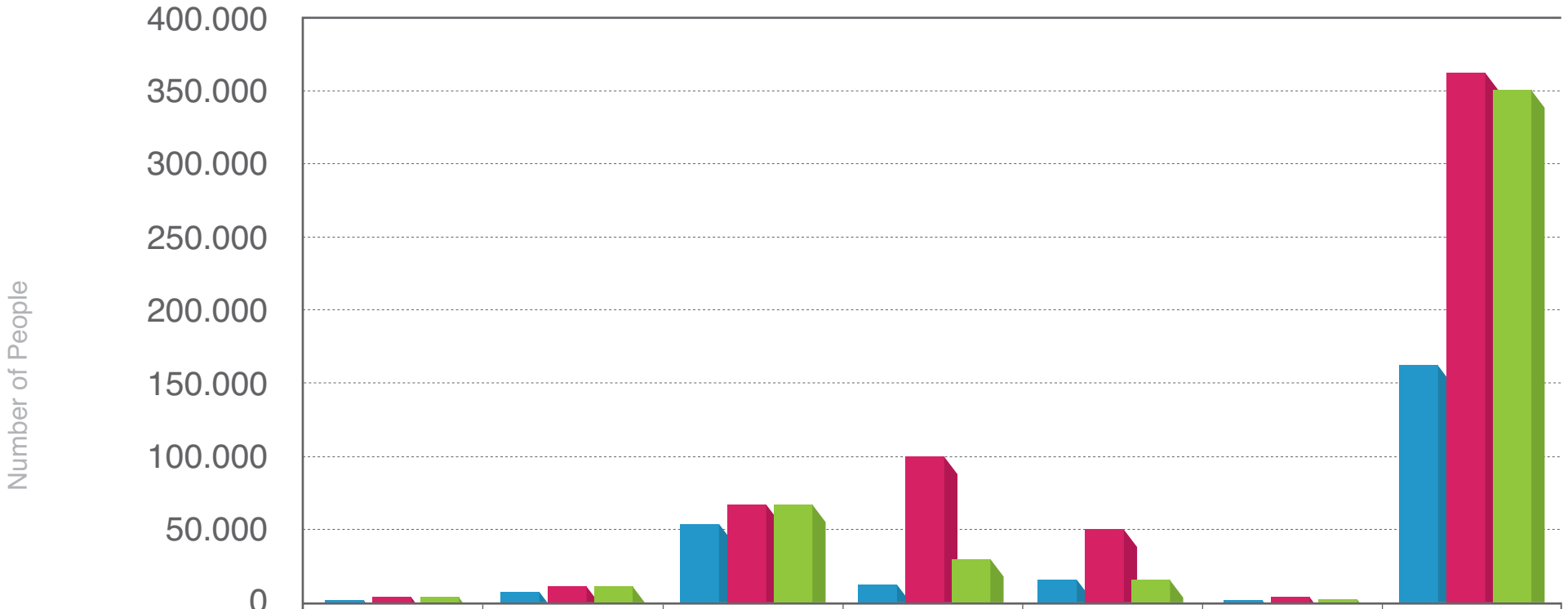
6 Robert Koch-Institut: Epidemiologisches Bulletin 46/2010, p. 458

7 ibid.

8 UNICEF 2009

9 Source: BORDERNETwork Questionnaire for Cooperation Partners

Figure 1: Estimated and reported number of people living with HIV in 2009



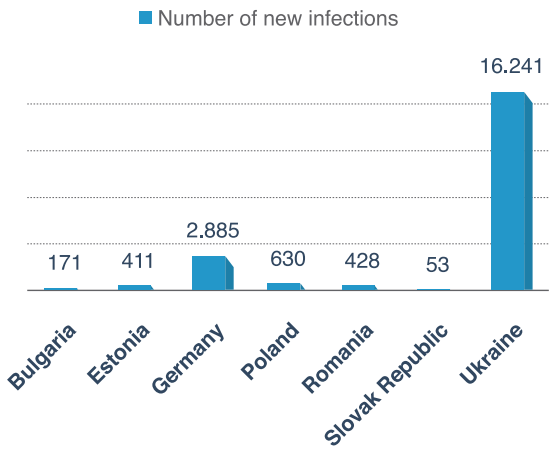
	Bulgaria	Estonia	Germany	Poland	Romania	Slovak Republic	Ukraine
Reported number of people living with HIV (2009); BORDERNETwork questionnaire	1.109	7.320	54.000	12.757	16.162	443	161.119
Estimated number of people living with HIV (2009); BORDERNETwork questionnaire	4.000	11.500	67.000	100.000	50.000	1.250	360.000
Estimated number of people living with HIV (2009); UNICEF 2009	3.800	9.900	67.000	27.000	16.000	500	350.000

I. HIV / AIDS

B. INCIDENCE

At the beginning of the new century the number of diagnosed infections increased rapidly in Europe. Now the number of new infections in the monitored countries is relatively stable.

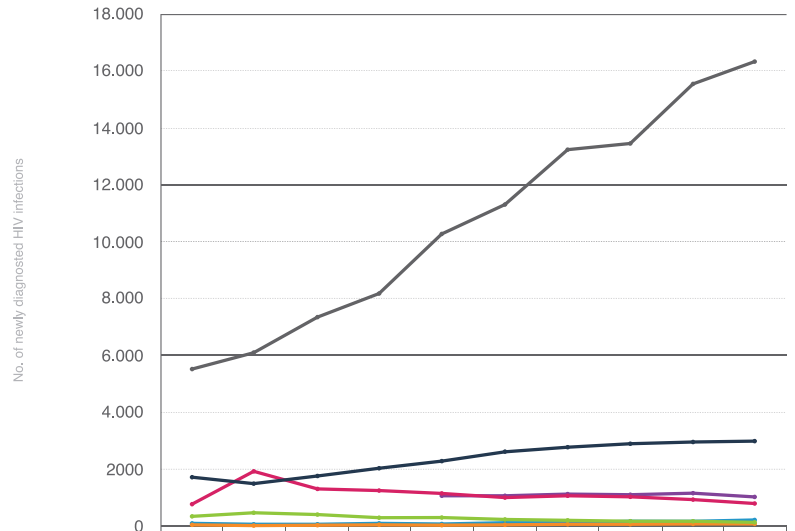
Figure 2: HIV Incidence in 2009



In general, the following observation can be made: The number of new diagnoses stabilized (e.g. Poland and Germany), decreased (e.g. Estonia, Romania) or slightly increased (Bulgaria, Slovak Republic). With 2.885 cases Germany had the highest number of new diagnoses of HIV/Aids in 2009. Poland (630), Romania (428) and Estonia (411) reported under 700 diagnoses. In Bulgaria and the Slovak Republic there were fewer than 200 cases of HIV new infections. However, in both countries the number of diagnoses of HIV/Aids doubled from 2005 (Bulgaria: 83 / Slovakia: 21) to 2009 (Bulgaria: 171 / Slovakia: 53).[1]

It is necessary to mention that the incidence data [2] only marks the year of the diagnosis. The infection often happened years before the diagnosis of HIV/Aids. HIV is often diagnosed too late after the infection, when first Aids-typical diseases developed and the patient's immune system collapses. Therapy is very difficult to conduct in this stage so Aids affected people often do not recover, and die.

Figure 3: Development of Incidence, *Source: ECDC 2010*



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Bulgaria	49	40	43	63	50	83	91	126	123	171
Estonia	390	1.474	899	840	743	621	668	633	545	411
Germany	1.688	1.443	1.719	1.978	2.225	2.508	2.666	2.791	2.841	2.856
Poland					664	663	721	706	753	630
Romania	351	468	402	308	303	237	217	185	179	143
Slovak Republic	19	8	11	13	15	21	27	39	53	53
Ukraine	5.485	6.086	7.385	8.179	10.218	11.272	13.256	13.496	15.671	16.241

1 European Centre for Disease Prevention and Control (ECDC): HIV/Aids surveillance in Europe 2009, Stockholm 2010, p. 24ff.

2 See URL: http://www.ecdc.europa.eu/en/publications/Publications/101129_SUR_HIV_2009.pdf

See URL: http://www.unaids.org/en/dataanalysis/monitoringcountryprogress/2010progressreportssubmittedbycountries/

I. HIV / AIDS

C. INFECTION WITH HIV ACCORDING TO MOST-AT-RISK GROUPS

The spread of HIV is based on transmission ways that are very differently pronounced in every country. It is possible to divide the monitored countries into two different types: first, countries where HIV/Aids is transmitted by intravenuous drug use and the sharing of needles and syringes (Estonia, Poland and Ukraine), and secondly, countries where HIV/Aids is transmitted by sexual intercourse and sexual risk behaviour. In Germany and Slovakia the largest part of the most-at-risk groups are men who have sex with men. In Bulgaria and Romania the number of people who infected themselves by unprotected heterosexual intercourse is very high.

However, a change in the distribution of transmission ways is remarkable. While in countries like Germany and Romania the most-at-risk groups are very stable, these groups' proportions have changed in Bulgaria, Poland and Estonia.

1 BULGARIA

Source:

BORDERNETwork Questionnaire for Treatment Centres;

European Centre for Disease Prevention and Control (ECDC): HIV/Aids surveillance in Europe 2009, Stockholm 2010 , p. 32 ff.

2 ESTONIA

Source:

BORDERNETwork Questionnaire for Treatment Centres;

European Centre for Disease Prevention and Control (ECDC): HIV/Aids surveillance in Europe 2009, Stockholm 2010, p. 32 ff.

3 GERMANY

Source:

BORDERNETwork Questionnaire for Treatment Centres;

European Centre for Disease Prevention and Control (ECDC): HIV/Aids surveillance in Europe 2009, Stockholm 2010 , p. 32 ff.

4 POLAND

Source:

BORDERNETwork Questionnaire for Treatment Centres;

European Centre for Disease Prevention and Control (ECDC): HIV/Aids surveillance in Europe 2009, Stockholm 2010 , p. 32 ff.

5 ROMANIA

Source:

BORDERNETwork Questionnaire for Treatment Centres;

European Centre for Disease Prevention and Control (ECDC): HIV/Aids surveillance in Europe 2009, Stockholm 2010 , p. 32 ff.

6 SLOVAK REPUBLIC

Source:

BORDERNETwork Questionnaire for Treatment Centres;

European Centre for Disease Prevention and Control (ECDC): HIV/Aids surveillance in Europe 2009, Stockholm 2010 , p. 32 ff.

7 UKRAINE

Source:

BORDERNETwork Questionnaire for Treatment Centres;

European Centre for Disease Prevention and Control (ECDC): HIV/Aids surveillance in Europe 2009, Stockholm 2010 , p. 32 ff.

1. BULGARIA [1]

Until 2009 (ECDC 2000 -2009), the majority (65%) of all new infections with HIV/Aids in Bulgaria occured through unprotected heterosexual intercourse. 21% of new infections belonged to the group of intravenuous drug users and 10% belonged to the group of men who have sex with men. It is possible that a large number of people, who were registered as belonging to the group of HIV positive heterosexual persons, infected themselves by using intravenuous drugs or by homosexual contacts. Maybe legislative or moral restrictions are leading these people to hide their risk behaviour. Especially marginalized out-groups of Bulgaria, e.g. the Roma Community, are covering up the way of transmission to avoid punishment by law and social exclusion.

For 2009 the statistic shows a more ambigious picture of the distribution of the different most-at-risk groups. Now the percentage of IDU and heterosexual persons is nearly the same. The number of persons who infected themselves with HIV by intravenuous drug use is only 3% higher (43%) than the infection by unprotected heterosexual intercourse (40%). The rate of MSM increased from 10% (average until 2009) to 16% of all newly diagnosed infections with HIV.

Figure 6 shows the continiuous change in the proportions of the transmission ways and of the most-at-risk groups. It shows how the rate of newly diagnosed HIV infections in relation to unprotected heterosexual intercourse decreased from 2004 (85%) to 2009 (40%). In the same period the number of persons who became infected with HIV by sharing contaminated needles and syringes exploded from nearly 15% (2004) to 43% (2009). Bulgaria is a special case in this comparison because the distribution of transmission ways has changed dramatically.

Figure 4: Bulgaria - Infection with HIV according to most-at-risk groups (2000 - 2009)

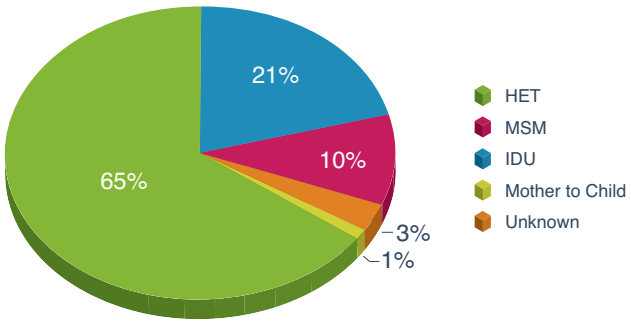


Figure 5: Bulgaria - Newly diagnosed infection with HIV according to most-at-risk groups in 2009

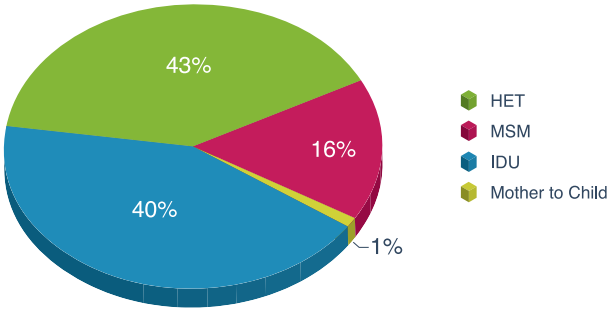
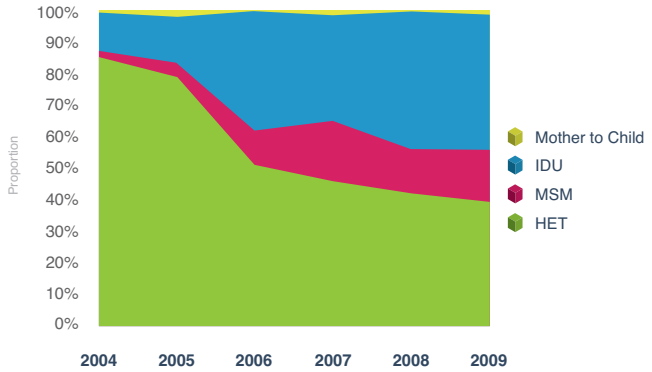


Figure 6: Bulgaria - Development of Incidence according to most-at-risk groups (2004 - 2009)



2. ESTONIA [2]

At a first glance the high number of unknown infection ways attracts the viewer's attention. Nevertheless, the number of IDUs is so high that they emerge with 49% (ECDC: 2000-2009).

In Estonia, as in Poland and Ukraine, the problems of intravenous drug use have the largest impact on the HIV/Aids epidemic.

The data of the ECDC is not clear because of the high number of persons who cannot be ascribed to any risk group. But the data of the Tervise Arengu Institut in Tallinn can give an additional insight, a better understanding of the role of different risk groups in Estonia. In general, the data shows that among newly diagnosed HIV infections about 50% belong to the group of intravenous drug users. In Estonia the percentage of IVDU among diagnosed HIV positive persons decreased and stabilized: 2001: 90%; 2002: 72%; 2003: 66%; 2004: 53%; 2005: 44%; 2006: 48%; 2007: 55%. Among 13.800 IDUs in Estonia the HIV prevalence ranges from 55 – 70% (Source: NIHD). This situation differs from region to region. The HIV prevalence among MSM (1.5 – 2 % in Tallinn) and other risk groups is much lower.

But since 2007 the data shows an interesting trend: The number of persons who got their infection by heterosexual risk behaviour increases. This increase could be indicative of the transmission of HIV/Aids from the fringe of the Estonian society into the general population. Maybe young men and women who injected drugs in the past are now in a phase of high sexual activity and family planning.

Figure 7: **Estonia - Infection with HIV according to most-at-risk groups (2000 - 2009)**

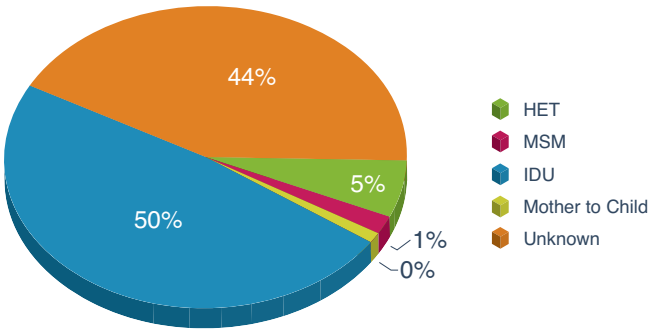


Figure 8: **Estonia - Newly diagnosed infection with HIV according to most-at-risk groups in 2009**

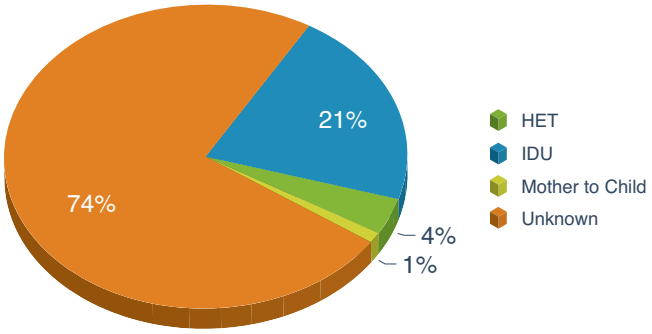
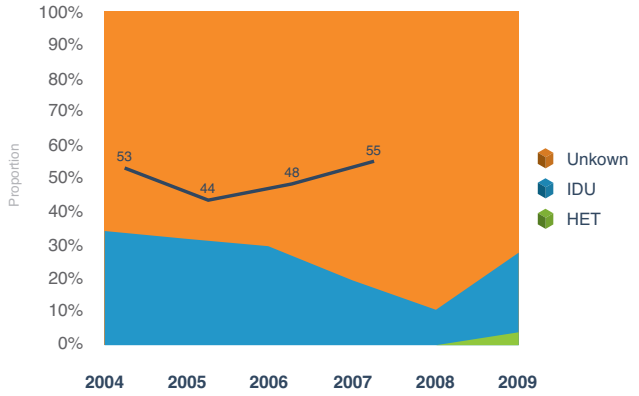


Figure 9: **Estonia - Development of the proportion of most-at-risk groups (2004 - 2009)**

The blue line shows the % of IVDU among people with HIV (2004-2007).
Source: Kristi Rütel/ Tervise Arengu Institut, Tallinn/Estonia



3. GERMANY [3]

In Germany an estimated number of about 67.000 people is living with HIV/Aids. Germany is a country in which the infection with HIV/Aids spreads by unprotected intercourse, especially unprotected intercourse of MSM.

Until 2009, the majority (RKI/ECDC 2000-2009: 54%) of HIV positive people belong to the group of men who have sex with other men. In the same period, the group of persons who got the infection with the HI virus by having unprotected heterosexual intercourse amounts to 33%.

A special issue in Germany is that the group of heterosexual HIV positive persons is composed of heterosexual persons from high prevalence countries (HPL) and heterosexual persons from Germany.

By comparing the most-at-risk groups (2000-2009) with the incidence rate of 2009 it appears that the rate of MSM increased from 54% (average 2000-2009) to 68% (2009).

In the same period the number of persons who belonged to the group of IDUs decreased continuously (from an average [2000-2009] of 10% to 4% in 2009). Also the group of persons who got their infection by unprotected heterosexual intercourse or in their high prevalence home countries decreased from 33% (2000-2009) to 21% in 2009 (17% heterosexual / 4% high prevalence country)

Figure 10: Germany - Infection with HIV according to most-at-risk groups (2000 - 2009)

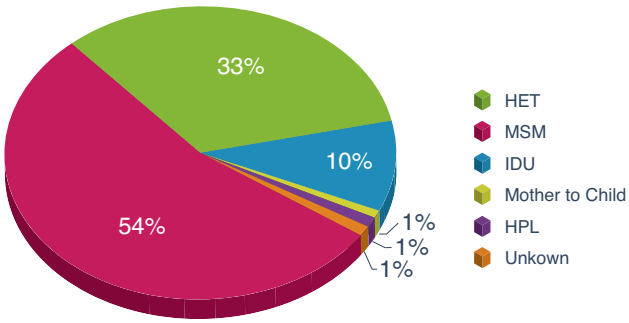


Figure 11: Germany - Newly diagnosed infection with HIV according to most-at-risk groups in 2009

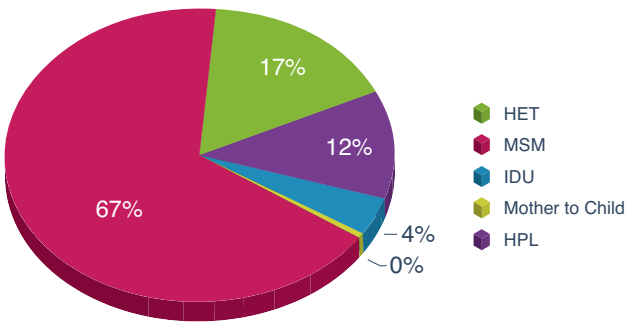
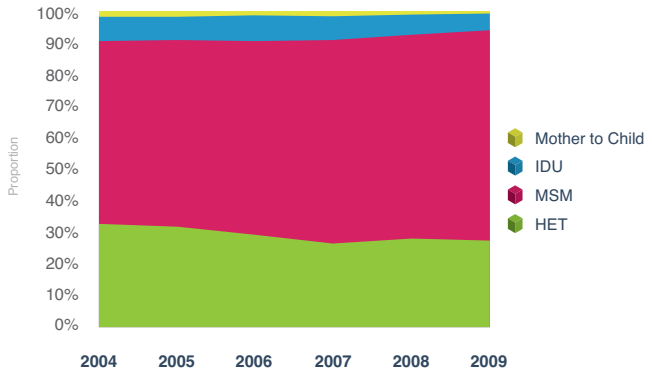


Figure 12: Germany - Development of the proportion of most-at-risk groups (2004 - 2009)



4. POLAND [4]

In Poland the majority of people living with HIV/Aids is belonging to the group of IDUs. Statistically, the number of HIV-infections that are not relatable to a transmission way is very high (40%). In 2009 it was 75%. From 2000 to 2009 only 14% (7% MSM / 7% heterosexual) of newly diagnosed persons stated that the infection with HIV resulted from sexual risk behaviour.

Because of the insufficient data it must be assumed that a high percentage of newly diagnosed HIV cases is a result of intravenous drug use and the use of non-sterile materials. Interestingly though, by erasing the unknown cases (2004-2009) the percentage of infections with HIV through sexual acitivities increases. Without the unknown cases the infections in relation to homosexual (30%) and heterosexual (39%) risk behaviour are playing the most important role as a transmission way.

It must be assumed that the number of persons who got their infection with HIV/Aids by intravenous drug use decreased, while the rate of people who can assign their infection to unprotected sexual intercourse rose.

Figure 13: Poland - Infection with HIV according to most-at-risk groups (2000 - 2009)

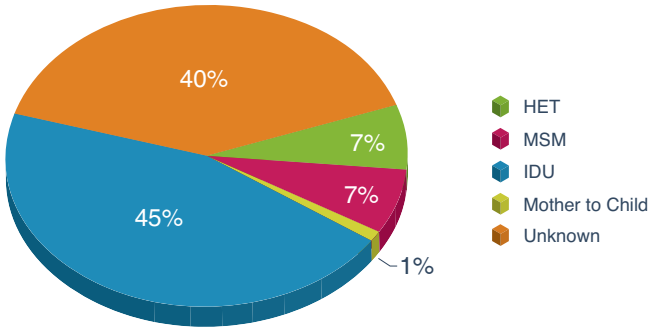


Figure 14: Poland - Newly diagnosed infections with HIV according to most-at-risk groups in 2009

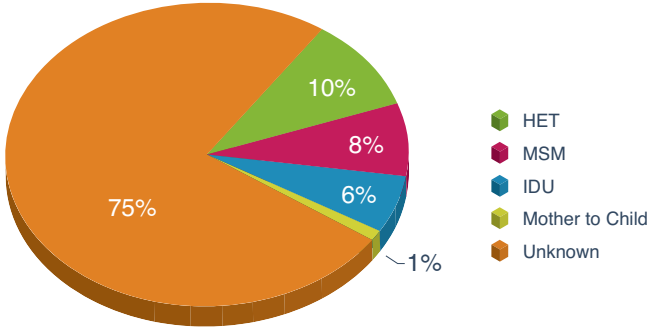


Figure 15: Poland - Development of the proportion of most-at-risk groups (2004 - 2009)

	2004	2005	2006	2007	2008	2009
Unknown	359	376	502	523	656	553
Mother to Child	15	7	23	12	11	9
IDU	201	146	114	81	41	39
MSM	33	41	43	30	52	47
HET	48	84	67	68	48	61

5. ROMANIA [5]

Romania is a special case within the reviewed countries. The number of persons who got their infection with HIV/Aids through a blood transfusion is very high. In the stalinistic Ceauşescu era many young children were infected by blood transfusions. Because the state tried to strengthen physically weak children by transfusing fresh blood. This blood was contaminated with the HI virus. It is believed that about 7.200 children were infected with HIV by contaminated blood.

In the meantime many of the infected children died, but a majority that was infected with HIV is now between 20-30 years old. For this reason the distribution of HIV/Aids among heterosexual persons in 2009 is mostly caused by unprotected heterosexual intercourse (50 – 75%). Figure 18 & Figure 19 are showing the proportion of transmission ways.

Despite of varying data of Matei Bals and ECDC, there are certain tendencies recognizable: The transmission of HIV by unprotected heterosexual (50 – 75%) and homosexual (4 – 8%) intercourse is the dominant way of infection. The vertical transmission from mother to child (2 - 5%) and the transmission by intravenous drug use (1 – 3%) play a minor role in Romania.

Figure 16: Romania - Infection with HIV according to most-at-risk groups (until 2009)

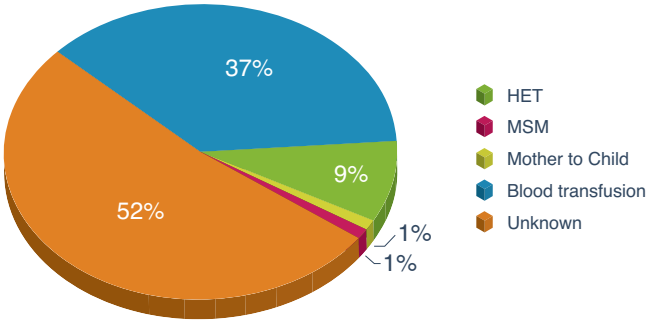


Figure 17: Romania - Newly diagnosed infection with HIV according to most-at-risk groups in 2009

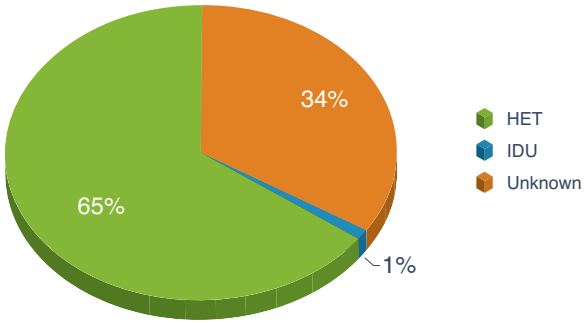
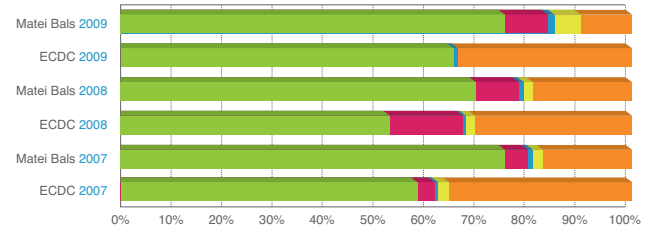
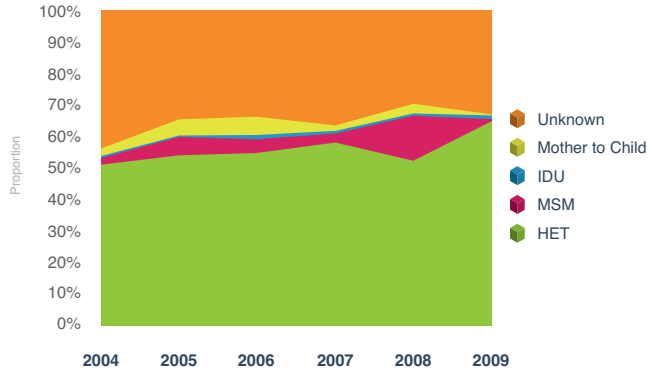


Figure 18: Romania - Transmission way in Romania (Comparison of ECDC and Matei Bals 2007 - 2009)



	ECDC 2007	Matei Bals 2007	ECDC 2008	Matei Bals 2008	ECDC 2009	Matei Bals 2009
HET	106	278	93	302	93	324
MSM	8	14	25	33	0	34
IDU	1	3	1	3	1	5
Mother to Child	4	9	5	12	0	22
Unknown	66	64	55	86	49	43

Figure 19: Romania - Development of the proportion of most-at-risk groups (ECDC: 2004 - 2009)



6. SLOVAK REPUBLIC [6]

The situation in the Slovak Republic is similar to Germany.

Most of the new infections with HIV (at least 66 % in 2009) are related to the group of men who have sex with men. The group of IDUs is irrelevant. Almost every new infection relates to unprotected sexual intercourse, but the number of MSM with a newly diagnosed HIV infection increased continuously.

The number of new infections with HIV doubled from 2006 (27) to 2009 (53) and increased slightly from a low level.

Figure 20: Slovakia - Infection with HIV according to most-at-risk groups (ECDC: 2000 - 2009)

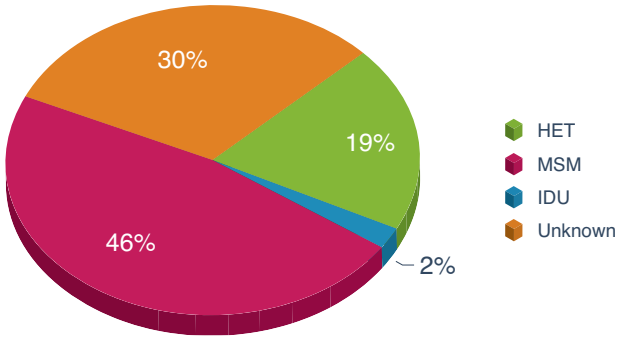


Figure 21: Slovakia - Newly diagnosed infection with HIV according to most-at-risk groups in 2009

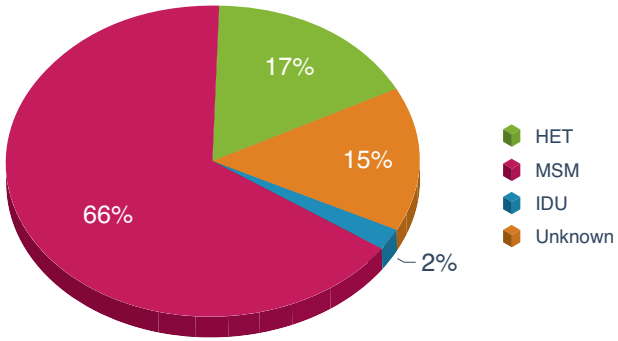
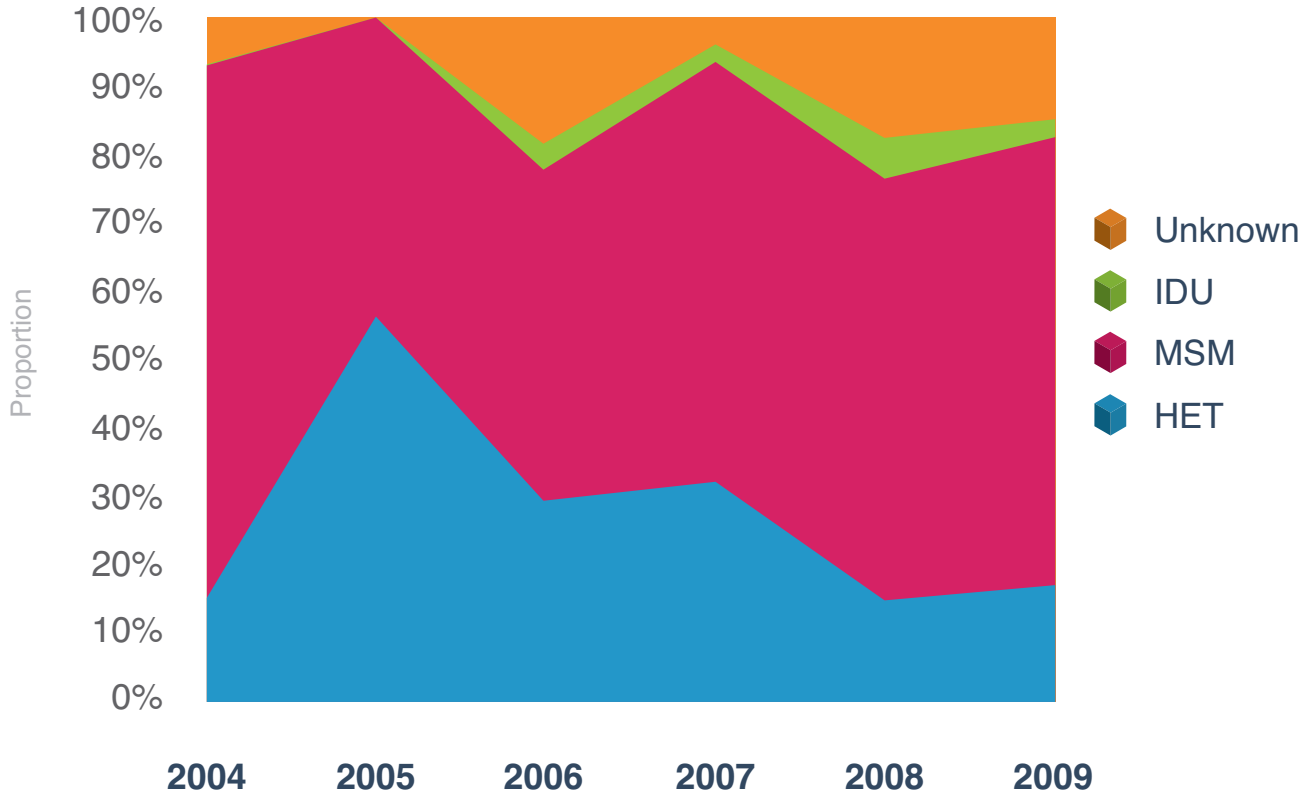


Figure 22: Slovakia - Development of the proportion of most-at-risk groups (2004 - 2009)



7. UKRAINE [7]

Ukraine is most affected by the HIV/Aids epidemic in Europe. 161.119 people are infected with the HI virus.

The results of UNAids, ECDC and of the BORDERNETwork questionnaire are differing in the data on transmission ways (Figure 23). The data on transmission by intravenous drug use and transmission by heterosexual intercourse is varying by about 10 %. But especially the role of mother to child transmission is observed differently by the ECDC, UNAids and the cooperation partner of BORDERNETwork.

While the proportion of mother to child transmission plays only a minimal role for the ECDC, the BORDERNETwork cooperation partner in the Ukraine and UNAids stated that about 19.7 % of all infections with HIV are related to mother to child transmission.

Between 40 - 60% of all infections (until 2009) with HIV can be assigned to the group of people with a drug related background. In addition to this, the number of infections by heterosexual intercourse became more important (2004: 40% / 2009: 53%).

It seems that the epidemic advances into the general population. Intravenous drug users often become sex workers to finance their addiction. As a result the HIV/Aids epidemic reached the general population by the indirect way of prostitution and unprotected sexual intercourse.

This trend seems to emerge slowly, but it will be the next step towards a general HIV/Aids epidemic in the Ukraine. The low number of MSM may be a signal that this risk group is hidden eventually by heterosexual transmission ways.

Figure 23: Ukraine - Transmission way in Ukraine (percentage) Comparison of ECDC 2010 and BORDERNETwork 2010

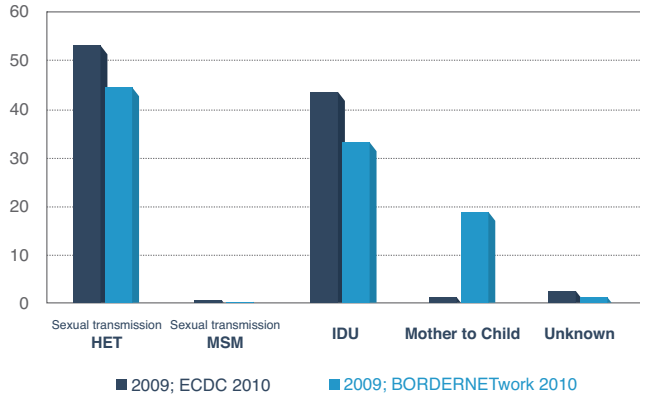


Figure 24: Ukraine - Newly diagnosed infections with HIV according to most-at-risk groups in 2009

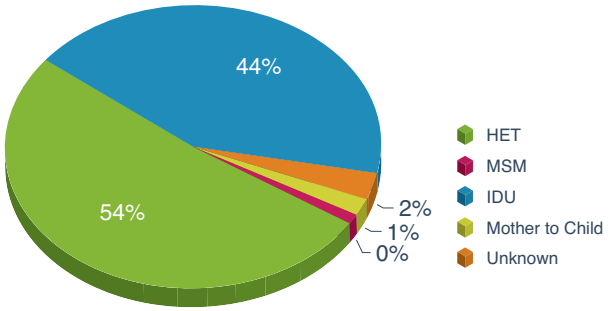
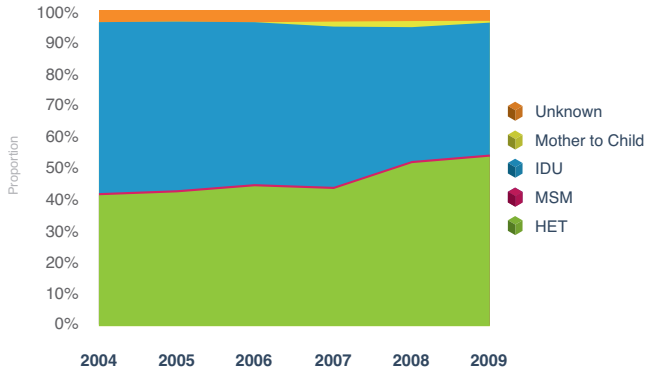


Figure 25: Ukraine - Development of the proportion of most-at-risk groups (2004 - 2009)



I. HIV / AIDS

D. AIDS CASES AND AIDS DEATHS [1]

In Ukraine 37.000 people Ukraine are suffering from Aids. This is the highest rate in the observed countries. Of the examined EU countries Romania is the country that has the most people who have developed Aids. In Romania the majority of people living with HIV is suffering from Aids (two out of three infected people, that means 11.682 of 16.162 people). It is estimated that in Poland (20% of all known cases) and in the Ukraine (up to 10% of the estimated 360.000 HIV positive people) a high number of HIV positive people has reached the advanced stage of Aids.

In the other countries the rate of people who are suffering from Aids is lower. In general the number of people who died of Aids in 2009 was decreasing (Bulgaria: 2, Estonia: 0, Germany: 57, Poland: 34, Romania: 39, Slovakia: 2 and Ukraine: 21).

Country	*Total number of people suffering from Aids estimated*	*Number of people diagnosed with Aids in 2009*	*Number of people who died of Aids in 2009*
Bulgaria	No data	30	2
Estonia	290	38	0
Germany	760	226	57
Poland	2.500	76	34
Romania	11.682	114	39
Slovak Republic	56	4	2
Ukraine	37.000	140	21

Table 4: Aids cases and Aids deaths in 2009. Source ECDC 2010

Since 2000 the yearly number of people who developed the stage of Aids has decreased continuously. Only in Bulgaria the number of Aids affected people doubled (2000: 16 cases / 2009: 30 cases), albeit on a small scale. Germany and Romania reduced the number of Aids cases by 75%. Ukraine also rapidly decreased the number of people suffering from Aids.

1 **Source:**
BORDERNETwork Questionnaire for Treatment Centres;
European Centre for Disease Prevention and Control (ECDC): HIV/Aids surveillance in Europe 2009, Stockholm 2010 , p. 32 ff.

D. AIDS CASES AND AIDS DEATHS

Country	*2000*	*2001*	*2002*	*2003*	*2004*	*2005*	*2006*	*2007*	*2008*	*2009*
Bulgaria	16	14	13	13	22	19	16	22	29	30
Estonia	3	2	6	10	29	29	32	57	61	38
Germany	821	754	711	674	717	683	667	597	486	226
Poland	126	132	124	145	176	152	163	134	160	76
Romania	599	445	370	382	337	328	283	279	224	114
Slovak Republic	5	5	2	2	2	3	4	6	1	4
Ukraine	903	1070	1593	2108	2948	4360	4922	1491	1104	140

Table 5: Aids cases 2000-09. Source ECDC 2010

EPIDEMIOLOGY: CURRENT STATE OF THE EPIDEMIC
I. HIV / AIDS

E. TREATMENT OF HIV/ AIDS [1]

Country	*2009*
Bulgaria	327
Estonia	1.263
Germany	40.000
Poland	4.434
Romania	8.402
Slovak Republic	< 100
Ukraine	21.000

Table 6: Persons getting treatment in 2009

The treatment landscape in the monitored countries differs extremely. While in Germany 74% of people who are infected with the HI virus receive a treatment, only 12% participate in a treatment in Ukraine. With 30% in Bulgaria, 17% in Estonia and 35% in Poland of PLWH who receive an ART, the majority of people infected with HIV receives no treatment. With 52% of PLWH in Romania and with about 50% of PLWH in Slovakia a greater number of infected people is covered by antiretroviral treatment.

1 **Source:**
BORDERNETwork Questionnaire for Cooperation Partners;
United Nations. Department of Economics and Social Affairs / Population Division; UNGASS 2010

EPIDEMIOLOGY: CURRENT STATE OF THE EPIDEMIC

II. HEPATITIS B (HBV) [1]

Hepatitis B is a serious problem in the European Union. The most affected countries are Poland (estimated 1,400,000), Romania (estimated 1,200,000) and Germany (estimated 492,300). Because of the high incidence rate in Bulgaria (9.9 cases per 100,000 between 2006-2008) the number of people who are affected by Hepatitis B is propably much higher. The number of the infections in the period between 2006 and 2008 was the highest in Bulgaria (9.9 cases per 100,000).

With 5.1 cases per 100,000 inhabitants in Romania and 3.5 cases per 100,000 inhabitants in Estonia these countries are in the middle of the reviewed incidence rates. Germany and Slovakia have a low prevalence rate (0.6%). Data on Hepatitis B is unavailable for Ukraine.

Country	*No. of people with chronic HBV estimated*	*Reported no. of people with chronic HBV*	*Prevalence rate*	*Incidence 2006-08, cases per 100.000* [2]	*HBV/HIV Co infection estimated*
Bulgaria	No data	No data	No data	9,9	No data
Estonia	No data	No data		3,5 (NIHD: 2,16 in 2009 / 1,72 in 2010)	No data
Germany	492.300		0,6	1,2	No data
Poland	1.400.000	1.267 in 2009	3,7	1,1	~ 10.000
Romania	1.200.000 - 1.300.000	~20.000	5,6	5,1	~10.000 / 2.400 reported
Slovak Republic	32.474	No data	0,6	2,1	No data
Ukraine	No data	No data	No data	No data	No data

Table 7: HEPATITIS B IN CEE AND SEE

It can also be mentioned that data on Hepatitis B and HIV coinfections is sparsely available. There are only estimated numbers of people with a HBV/HIV coinfection in Poland (10,000 cases) and Romania (10,000 cases). There is no data available on how the Hepatitis B virus emerges, e.g. as chronic HBeAg positive or HBeAg negative Hepatitis with or without zirrhosis, and which transmission ways and risk groups are the dominant factors for the spread of the Hepatitis B infection in the surveyed countries.

1 **Source:**
BORDERNETwork Questionnaire for Cooperation Partners;

URL: http://ecdc.europa.eu/en/publications/Publications/101012_TER_HepBandC_survey.pdf;

URL: http://ecdc.europa.eu/en/publications/Publications/TER_100914_Hep_B_C%20_EU_neighbourhood.pdf

URL: http://www.oecd-ilibrary.org/docserver/download/fulltext/8110161e.pdf?expires=1303822435&id=id&accname=guest&checksum=638F8FE72D3EDB86D3E94A5FC8EB6DDC

2 **Source:**
OECD Health Data 2010;
WHO Europe (2010), Health at a Glance Europe 2010

EPIDEMIOLOGY: CURRENT STATE OF THE EPIDEMIC

III. HEPATITIS C (HCV) [1]

Of the reported European countries where data is available Romania, Germany and Poland have a high number of people with a chronic HCV infection. In Romania estimated 1,000,000 people are infected with Hepatitis C. Almost 5% of the whole population of Romania is infected with Hepatitis C.

Country	*Estimated number of people with chronic HCVt*	*HIV/HCV coinfected in %, end 2006*	*Estimated number of people with HIV/HCV coinfection*
Bulgaria	100.000	10	400
Estonia	12.000 - 27.000 [2]	25	~2.800
Germany	500.000	10 - 15	6.700 - 10.500
Poland	570.00	20	20.000 - 60.000
Romania	1.000.000	5	1.000 - 2.500
Slovak Republic	no data	5	60
Ukraine	no data	70 [3]	No Data

Table 8: Hepatis V in CEE and SEE

The Hepatitis C epidemic in Eastern- and South-Eastern Europe is primarily boosted by intravenous drug use. Table 8 shows this dramatic interaction. In countries with a high number of illicit drug users, like Estonia and Ukraine, the likelihood to suffer from a HIV/HCV coinfection is high. In Estonia at least 25% of all people who are living with HIV/Aids are co-infected with Hepatitis C. In Ukraine at least 70% are HIV/HCV co-infected. Germany and Poland rank in the middle of this development. In Germany approximately 10 – 15% of people with HIV/Aids are coinfected with Hepatitis C, while in Poland 20% of PLWH are HIV/HCV coinfected. While there is a large number of people with a Hepatitis C infection in Bulgaria and Romania, there are only 10% and 5% respectively reported with an HIV/HCV coinfection.

One reason could be that the number of illicit drug users is relatively low (see below), on the other hand data could be underreported, because EuroSida had published the number of 46.9% prevalence of Hepatitis C in the HIV infected population in Eastern Europe in 2005 (Rockstroh et al. J inf Dis 192; 992-1002).

1 **Source:**
BORDERNETwork Questionnaire for Cooperation Partners;

URL: http://ecdc.europa.eu/en/publications/Publications/101012_TER_HepBandC_survey.pdf;

URL: http://ecdc.europa.eu/en/publications/Publications/TER_100914_Hep_B_C%20_EU_neighbourhood.pdf

URL: http://www.oecd-ilibrary.org/docserver/download/fulltext/8110161e.pdf?expires=1303822435&id=id&accname=guest&checksum=638F8FE72D3EDB86D3E94A5FC8EB6DDC

URL: http://www.unaids.ru/files/Hepatitis_and_HIV_Moscow_eng.pdf

2 **Source:**
BORDERNETwork Questionnaire 2010
2% of general population

3 **Source:**
Mauss, S., Berg, T. , Rockstroh J., Sarrazin, C. , Wedemeyer, H.: Short Guide to Hepatitis C 2011. Flying Publisher 2011, p. 88.

DIAGNOSTIC AND TREATMENT

RESULTS OF THE SURVEY

We received responses to our questionnaires mostly from HIV treatment centres:

Three times from Romania, two from Estonia, one from Poland, two from Slovakia, and two from Bulgarian HIV treatment Centres.

The last one from Bulgaria is a Dermatological – Venerological Outpatient Centre.

Centres	*Country*	*Institution*
1	**Romania**	Infectios Diseases Hospital Brasov Rodica Silaghi
2	**Romania**	National Institute for Infectious Diseases, Bucharest Adrian O. Abagiu
3	**Romania**	Ovidius University Constanta, Faculty of Medicine, Constanta Irina Magdalena Dumitru
4	**Estonia**	West-Tallinn Central Hospital Dr. Kai Zilmer, Tallinn
5	**Estonia**	Narva-Hospital, Narva Dr. Dimitri Jaaniste
6	**Poland**	Department of Infectious Diseases, Pomeranian Medical University, Szczecin Dr. Anita Wnuk
7	**Slovakia**	University Kosice Prof. Dr. Jarcuska and Mrs. Mgr Katarina Cároková
8	**Slovakia**	Clinic of Infectiology and Travel Medicine, University Hospital, Martin Dr. Lukas Murajda
9	**Bulgaria**	Department of Infectious Diseases, University Hospital, Plovdiv Dr. Nikolov
10	**Bulgaria**	Hospital for Infectious Diseases, Sofia Dr. Toma Tomov
11	**Bulgaria**	Dermatology and Venerology Out Patient Clinic, Sofia Dr. Mariela Hitova

Table 9: Respondents of BORDERNETwork Questionnaire for Treatment Centres

I. ANALYSIS OF HIV DIAGNOSTIC [1]

First we asked for possibilities in HIV diagnostics (Rapid Test, ELISA, anti-HIV Western blot and HIV PCR-quantity).

The HIV rapid test is not too important; it is used for instance in special situations like voluntary counselling and testing (VCT) or post exposure prophylaxis (PEP), but in many resource limited countries it is still the only diagnostic tool for HIV.

The ELISA is the screening test for HIV antibodies with a very high sensitivity and a good specificity, but every reactive ELISA should be confirmed with the HIV-Western Blot.

The measurement of the viral load with a very sensitive PCR technique is very important and absolutely essential for the treatment success control.

All ten treatment centres are able to diagnose and conform an HIV infection. With the measurement of HIV quantity with PCR they also have one important condition to manage therapy of HIV infection in a good clinical practice.

HIV	*Romania*			*Estonia*		*Poland*	*Slovakia*		*Bulgaria*		
Centres	1	2	3	4	5	6	7	8	9	10	11
Rapid Test	x	•	•	•	x	•	x	•	•	x	x
ELISA	x	x	x	x	x	x	x	x	x	x	x
Western Blot	x	x	x	x	x	x	x	•	x	x	•
PCR quantity	x	x	x	x	x*	x	x	x	?	x	•

* viral load determined by reference laboratory

Table 10: Possibilities for HIV Diagnostics

1 Source:
BORDERNETwork Questionnaire for Treatment Centres

DIAGNOSTIC AND TREATMENT

II. ANALYSIS OF HEPATITIS B DIAGNOSTICS [1]

For the management of Hepatitis B there is a need for the detection of antibodies, like anti-HBc and anti-HBe, and also for the direct detection of parts of the virus, like HBsAg, HBeAg and, most importantly, HBVDNA quantity.

The first criterion for successful therapy is the stop of complete viral replication. In this case HBVDNA decreases below the detection level.

The second criterion for a successful therapy is seroconversion from HBeAg to anti-HBe and from HBsAg to anti-HBs.

All 10 treatment centres can diagnose Hepatitis B infection, and 8 centres fulfill the requirements for managing the treatment, because of their possibility of measurement of HBVDNA.

In 2009 the number of diagnoses ranged between 15 and 180 cases.

The number of co-infections seems to be low with about 1 to 10%.

HBV	*Romania*			*Estonia*		*Poland*	*Slovakia*		*Bulgaria*		
Centres	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
HBs Ag	x	x	x	x	x	x	x	x	x	x	•
Anti HBc	x	x	x	x	•	x	x	x	x	?	•
Hbe Ag	•	x	x	x	x	x	x	•	x	?	•
Anti HBe	•	x	x	x	•	x	x	x	?	x	•
HBV DNA	•	x	x	x	•	x	x	•	x	x	•
Diagnoses in 2009	50	15	92	no data	9	180	25	no data **2010: 6**	56	no data	no data
HIV/HBV coinfections 2009	no data	1	4	no data	1	2	0	no data **2010: 5**	2	no data	no data

Table 11: Possibilities for HBV Diagnostics

1 Source:
BORDERNETwork Questionnaire for Treatment Centres

III. ANALYSIS OF HEPATITIS C DIAGNOSTICS [1]

The diagnosis of Hepatitis starts with antibody detection. Primarily we use the anti-HCV ELISA as a screening test. It is very sensitive but sometimes reacts falsely. Every reactive HCV screening test has to be confirmed with the Immunoblot or Westernblot. The HCV PCR is necessary if the confirmation test is positive. A positive PCR for HCVRNA demonstrates the viral replication in case of acute or chronic Hepatitis C. If the HCV PCR has been positive for more than six months the chronic Hepatitis C is confirmed.

For the management of therapy there is also a need for the examination of the HCV Genotype and the measurement of viral concentration in the blood. The examination of viral load before starting treatment and after 4, 12 and 24 weeks is very import for the decision to continue or to stop treatment with pegylated interferon and ribavirin.

Nine centres can carry out a screening test or confirmation test for the diagnosis of a Hepatitis C infection. Seven Centres can measure the virus directly with PCR, and three centres can measure the Genotype and quantity of the virus, which are necessary conditions for therapy.

The number of diagnoses of HCV infections in 2009 ranges from 15 to 230 cases. There is no data from Romanian centres regarding HIV/HCV co-infections. In other centres the number of co-infections ranges from 1 to 17 cases in 2009.

HCV	*Romania*			*Estonia*		*Poland*	*Slovakia*		*Bulgaria*		
Centres	1	2	3	4	5	6	7	8	9	10	11
Anti HCV ELISA	x	x	x	x	x	x	x	x	x	x	•
Anti HCV Western Blot	•	•	•	x	x	•	x	•	x	no data	•
HCV RNA qualitive	•	no data	•	no data	•	x	x	•	x	no data	•
HCV RNA quantitive	•	x	x	x	•	x	x	•	•	no data	•
HCV Genotype	•	no data	•	x	•	x	x	•	•	no data	•
Diagnoses in 2009	60	25	72	no data	23	230	35	no data **2010: 6**	15	no data	•
HIV/HCV coinfections 2009	no data	no data	0	no data	12	15	1	no data **2010: 1**	17*	no data	•

* not explainable

Table 12: Possibilities for HCV Diagnostics

1 Source:
BORDERNETwork Questionnaire for Treatment Centres

SUMMARY OF TREATMENT POSSIBILITIES

HIV:
All HIV treatment centres are able to treat patients with different classes of HIV drugs regarding to the EACS-recommendations in the first regimen. Nine centres meet the European guidelines regarding to the EACS-recommendations start ART depending on the number of CD4 cells below 350 cells per µl, one Slovakian centre starts with CD4 cells below 300.

HEPATITIS B:
Several medications are approved for the treatment of chronic Hepatitis B virus infection: Interferon alfa, pegylated Interferon alfa-2a, Adefovir, Entecavir, Lamivudin, Telbivudine, and Tenofovir.
In the past many HIV/HBV co infected patients had been treated with Lamivudin as a component of Combivir. The result was a selection of Lamivudin-resistent HBV strains in many patients, because after four years of therapy with Lamivudin about 70% of HBV patients develop a resistance to it. Therefore Lamivudin should not be given as a first choice.

Entecavir is a drug with high antiretroviral activity but can select the mutation M184V in HIV. For this reason it can only be used in coinfected patients if there is an effective antiretroviral therapy with complete HIV suppression. But there are different interactions between Entecavir and antiretroviral drugs. The same applies to Telbivudin. Entecavir and Telbivudin should be used only under special circumstances. The only anti HBV drugs that could be used without interference to HIV are Adefovir and pegylated interferons, but Adefovir has a low viral activity against HBV. The use of pegylated interferon depends on special predictive markers and conditions and is connected to a lot of side effects and has a very low chance of success.

Tenofovir has the greatest antiviral potency in terms of HBVDNA suppression. In HIV treatment it is co-formulated with Emtricitabin as Truvada. Emtricitabin is another drug with activity also against HBV. Therefore Truvada is the preferred drug for HIV/HBV coinfected patients. In summary four of the ten centres have Tenofovir or Truvada. Four centres have Entecavir and two centres have only Lamivudin available.

HEPATITIS C:
Treatment in chronic Hepatitis C with pegylated interferon and Ribavirin is possible in nine out of ten treatment centres. A condition for the management of therapy is the possibility to carry out the complete serological and viral HCV diagnostics, including HCV genotype and HCV quantity, with very sensitive methods. Here we have a difference, which we will discuss with our partners during countryside visits and following workshops.

OUTLOOK:
Chronic infections with Hepatitis B and Hepatitis C represent the most significant cause of liver disease in HIV patients. These coinfections accelerate the clinical course of liver disease; more patients develop cirrhosis and hepatocellular carcinoma in a shorter time. The mortality due to liver disease is distinctly increased in HIV coinfected patients. Therefore the adequate treatment of Hepatitis B and C is now a priority in HIV coinfected patients.

Above all successful management of Hepatitis B and C coinfection depends on a good laboratory diagnosis of all HBV and HCV markers, both viral antibodies and viral antigens. We have succeeded in cooperating with the WHO Collaborating Centre for Quality Assurance and Standardization in Laboratory Medicine for Virology (http:www.instandev.de/en/about-instand-ev/who-collaborating-centre/).

The head of this virological laboratory, Prof. Heinz Zeichhardt, has promised a close cooperation and support for the laboratories in our partner countries. All laboratories can participate free of charge in the EQA-Survey (External – Quality – Assessment – Survey).

During the next meetings, workshops and country site visits we will start to establish these relations.

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STOCKTAKING REPORT

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