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NEW DEVELOPMENT AND TRENDS

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BELGIAN NATIONAL REPORT ON DRUGS 2014 (DATA 2013)

NEW DEVELOPMENT AND TRENDS

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CHAPTER 6.
HEALTH CORRELATES AND CONSEQUENCES

De Ridder K.

- Needle exchange programmes have reduced the number of people reporting to share needles and syringes, but still many injecting drug users keep sharing other injecting equipment such as spoons, filters and water.
- In line with other European countries, a reduction of drug-induced deaths was observed in 2010, especially in the Walloon region.

1. INTRODUCTION

This chapter describes observed health consequences of illicit drug use in Belgium. Regarding drug-related infectious diseases, data from national registers (the HIV/AIDS and tuberculosis register) and from diagnostic testing in drug services (Standard Table 9 to EMCDDA) are summarized (section 2.1 and 2.2). Behavioural data were collected by 'Needle Exchange Flanders' ('Spuitenruil Vlaanderen') and Modus Vivendi (section 2.3). Data from the National Poison Centre were used to provide information on drug-related emergencies (section 3.1). In addition, psychiatric comorbidity is described based on the EuropASI, used as part of the intake interview at treatment centres from 'De Sleutel' (section 3.2). Finally, information on drug-induced deaths was obtained using the General Mortality Register (GMR) (section 4).

2. DRUG-RELATED INFECTIOUS DISEASES

2.1. HIV/AIDS AND VIRAL HEPATITIS

2.1.1. National HIV/AIDS register

The national HIV/AIDS register, hosted by the Scientific Institute of Public Health (WIV-ISP) contains the AIDS- and HIV notifications since 1984-1985 (Sasse and Defraye, 2009). For every confirmed seropositive case, additional information on age, sex, nationality, residence, sexual orientation and probable mode of HIV transmission is collected at the time of HIV diagnosis. For the reported AIDS cases, a follow-up study is conducted each year to collect data on last consultation and possible deaths. The HIV/AIDS register is deemed to be exhaustive.

In 2012 and 2013, respectively 14 and 17 persons newly diagnosed with HIV, reported intravenous drug use as the probable mode of HIV transmission, yielding a percentage of 1.1% and 1.5% of the persons newly diagnosed with HIV being probably attributable to injecting drug use (IDU). For the years 2012 and 2013, respectively 1 (1.1%) and 2 (2.5%) AIDS diagnoses related to IDU were reported. It is clear that the percentage of injecting drug users (IDUs) among persons newly diagnosed with HIV are much lower compared to the beginning of the HIV epidemic in the mid-eighties, but has been on a stable level since 2005. No clear time trends were observed regarding the proportion of IDUs among the newly diagnosed AIDS cases. However, with exception of the onset of the HIV-epidemic, the proportion of IDUs among AIDS-cases was found to be systematically (although not significantly) higher than the proportion of IDUs among the HIV-cases, indicating that IDUs are more rapidly developing aids compared to non-IDUs. It is hypothesized that this is due to the higher hepatitis co-infection rate among IDUs compared to non-IDUs and/or due to differences in treatment compliance.

2.1.2. HIV diagnostic testing among ever-IDUs

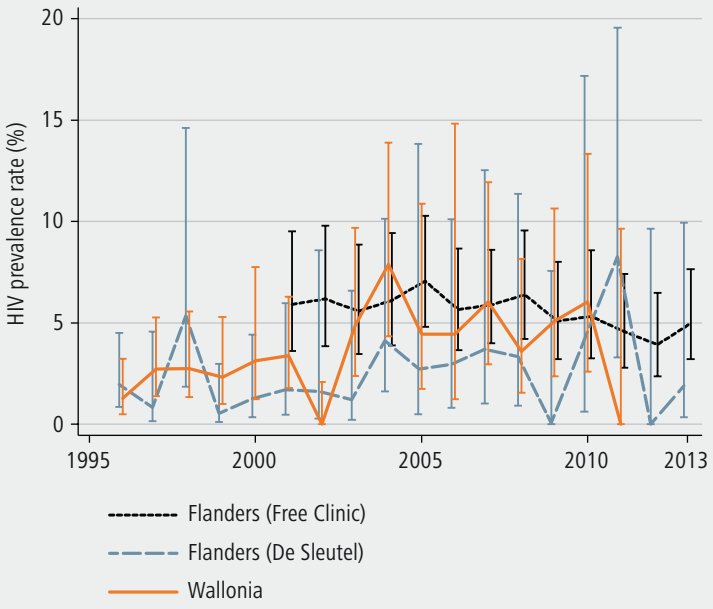
The prevalence rate of HIV-sero-positivity among ever-IDUs at treatment was obtained through serological data. Serological data among ever-IDUs, however, are only available for the Flemish region since 2012. The prevalence estimates are based on test results of blood screening collected through De Sleutel, an institution of several ambulatory and residential treatment centres located throughout the Flemish region, and through Free Clinic, an outpatient clinic located in Antwerp. De Sleutel collects serological information for clients entering treatment. In 2012, there were no new HIV seropositive registrations among ever-IDUs in De Sleutel, but in 2013, one new person (N=53, 1.9%) was registered. In the outpatient treatment centre Free Clinic, 4 to 5% of the tested ever-IDUs were HIV seropositive in 2012 and 2013. An overview of the prevalence rates for the period 2006-2013 is provided in Table 6.1 and illustrated for the period 1995-2013 in Figure 6.1, showing moderately fluctuating prevalence rates without clear time trends.

Table 6.1 | Prevalence rate (%) of HIV-seropositivity among ever-IDUs in treatment in the Flemish region between 2006 and 2012

	De Sleutel		Free Clinic	
Year	N	%	N	%
2006	68	2.9	336	5.7
2007	54	3.7	408	5.9
2008	60	3.3	329	6.4
2009	47	0.0	334	5.1
2010	29	3.4	282	5.3
2011	48	8.3	328	4.6
2012	36	0.0	357	3.9
2013	53	1.9	382	5.0

Source: De Sleutel and Free Clinic

Figure 6.1 | HIV-prevalence rates among injecting drug users and 95% Wilson's confidence intervals by year and source between 1995 and 2013



Sources: Walloon Region: l'Observatoire socio-épidémiologique alcool-drogues (EUROTOX), Flemish region: De Sleutel and Free Clinic

2.1.3. Hepatitis diagnostic testing among ever-IDUs

The prevalence rates of a positive hepatitis test among ever-IDUs at treatment was obtained analogously to the HIV prevalence rate described above and is based on diagnostic serological data from De Sleutel and Free Clinic. Additionally, the four Medical Social Care Centres (MSCC) in the province Flemish-Brabant started in 2014 with providing diagnostic serological data for hepatitis C among ever-IDUs. An overview of the hepatitis B (HBV) and C (HCV) prevalence rates for 2006-2013 is shown in Table 6.2 and Figure 6.2. In case of a viremic infection (either acute hepatitis or chronic carrier status and thus currently infected), HBsAg will test positive. AntiHBc will appear shortly after infection. In case of vaccination, antiHBc will be negative and only antiHBs will be detected. Regarding Hepatitis B, only a few (0 to 2%) of the clients tested positive for the HBV-indicating antigen HbsAg in 2013, while 6 to 48% were positive for antiHBc and 14 to 50% were positive for antiHBs. Regarding Hepatitis C, 7.5%, 22% and 73.4% of the clients in respectively the MSCC Flemish-Brabant, De Sleutel and Free Clinic tested positive for HCVab in 2013. A positive HCVab test is associated to either a (acute or chronic) viremic infection or a no longer viremic, undergone infection. Comparing these results with previous years does not reveal significant time trends.

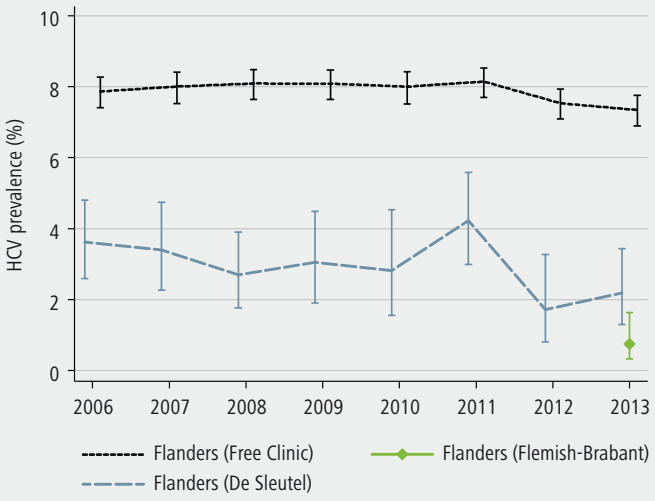
Table 6.2 | Prevalence rate of Hepatitis B among ever-IDUs at treatment and other diagnostic settings in the Flemish Community between 2006 and 2013

Hepatitis B		2006	2007	2008	2009	2010	2011	2012	2013
De Sleutel									
HBsAg	N	63	45	54	44	29	47	36	50
	%	0.0	0.0	1.9	0.0	0.0	4.3	3.0	0
antiHBc	N	38	28	38	28	22	36	28	32
	%	15.8	25.0	2.6	7.1	0.0	16.7	11.0	6.3
antiHBs	N	57	45	49	40	30	47	33	43
	%	12.3	11.1	18.4	25.0	20.0	25.5	33.0	13.9
Free Clinic									
HBsAg	N	334	307	328	336	281	326	386	379
	%	1.5	2.6	4.0	4.2	2.8	3.7	2.6	1.6
antiHBc	N	329	303	323	330	277	323	374	366
	%	55.0	53.5	57.3	56.1	56.3	55.1	49.5	48.1
antiHBs	N	-	-	327	334	279	327	379	371
	%	-	-	50.2	51.8	55.2	52.3	49.9	50.1

N: total number of IDUs who were tested (valid tests only)

Source: De Sleutel and Free Clinic

Figure 6.2 | Prevalence rate of Hepatitis C among ever-IDUs at treatment and other diagnostic settings in the Flemish Community between 2006 and 2013



N: total number of IDUs who were tested (valid tests only)

Source: De Sleutel, Free Clinic and Medical Social Care Centres in Flemish-Brabant

2.2. SYPHILIS AND TUBERCULOSIS

2.2.1. Syphilis diagnostic testing

The prevalence of a positive screening test for syphilis (TPHA) was obtained from Free Clinic. In 2012 and 2013, about 5% of the tested clients had a positive result (2012: 18/342; 2013: 16/339; Source ST9P2_2014_BE). It should be noted that a positive TPHA-test is a strong indication for a syphilis infection, but the test does not distinguish a recent from an old infection, nor an already treated infection.

2.2.2. National tuberculosis register

The Tuberculosis register is hosted by the Belgian Lung and Tuberculosis Association (BELTA), together with the 'Flemish association for respiratory health and tuberculosis control' ('Vlaamse Vereniging voor Respiratoire Gezondheidszorg en Tuberculosebestrijding, VRGT) and the 'Fund of respiratory diseases' in the French Community ('Fonds des Affections Respiratoires', FARES). The notification of tuberculosis cases is compulsory in Belgium. Notifications of both regions are joined and checked for duplicates in the national register.

Since 2001, the national tuberculosis incidence has declined slightly, from 12.8 cases per 100,000 residents in 2001 to 8.8 cases per 100,000 residents in 2013, which is the lowest incidence since 2001. The highest incidences in 2013 were observed for Brussels (26.2/100,000), Liège (21.9/100,000) and Antwerp (18.5/100,000). Of the 981 cases registered in Belgium in 2012, 85% (N=840) had reported a known risk factor of which 1.2% (n=10) was associated with intravenous drug use. However, the registration of the identified risk factors is disputable (Patrick de Smet, personal communication).

2.3. BEHAVIOURAL DATA

2.3.1. Risk behaviour in injecting drug users in contact with syringe exchange in the Flemish region

As described in chapter 4 section 3.1, data on risk behaviour among IDUs who frequent one of the needle exchange programmes (NEP) located in the Flemish Community, have been collected since 2001 (Windelinckx, 2014). Yearly, a sample of IDUs contacting one of the needle exchange programmes is asked to fill out a questionnaire which is based on the Injecting Risk Questionnaire (IRQ) (Stimson et al., 1998). This questionnaire contains additional items on health status, drug use and access to health care. An overview of the responses related to the IRQ is shown in Table 6.3.

In 2013, 264 valid questionnaires have been filled out. Of the participants, the mean age was 35 years and 80% were males (n=210). The majority of the

participants (63%) reported no sharing of injecting equipment with someone else during the last weeks. 34% of the participants shared injecting equipment with one or more persons during the last four weeks. Exchanging needles and/or syringes with sexual partners is less common; 26% and 22% of the participants reported having respectively given or lent needles and/or syringes from a sexual partner. The sharing of other injecting equipment during the last four weeks is more frequently reported: e.g. spoons (receptive/having used: 42%), water (receptive: 40%) and filters (receptive: 36%). These results are in line with those from 2010-2012.

Table 6.3 | Responses to the Injecting Risk Questionnaire (IRQ) within the needle exchange programmes in the Flemish region in 2013

Questions		Answers			
During the last 4 weeks,…	N	0	1	>2	Don't know
How often have you shared injecting equipment?	261	63%	13%	17%	7%
With how many different people have you shared injecting equipment?	263	65%	24%	10%	1%
How often have you given used needle/syringes to a sexual partner?	188	73%	11%	15%	1%
How often have you lent used needle/syringes from a sexual partner?	179	77%	9%	13%	1%
How often have you used a spoon that has already been used by someone else?	263	56%	21%	21%	2%
How often have you used a filter into which someone else had put a used syringe?	262	62%	20%	16%	2%
How often have you used the same water or bleach as someone else for flushing out?	263	56%	21%	19%	4%
How often have you injected with needles/syringes that had already been used by someone else?	261	77%	11%	7%	5%
How often have you filled your syringe from one that already been used by someone else (frontloading/backloading) ?	263	82%	11%	4%	3%
How often have you used old syringes that had been kept in the same container as someone else's old syringes?	263	71%	14%	7%	8%

Source: Spuitenruil Vlaanderen, Windelinckx 2014

Similar to previous years, the percentage of participants who claimed not to have shared needles/syringes is higher compared to the percentage claiming not to have shared other paraphernalia. Although based on these (limited) results, the harm reduction campaigns with a focus on not sharing needles/syringes of previous years, seem to be successful, but there is still too little available time for raising awareness on the risks of sharing paraphernalia (Windelinckx 2014). Drug

users remain not or less aware of the risk associated with sharing paraphernalia, which might explain the very high Hepatitis C prevalence rates among IDUs.

More risky injecting drug behaviour is increasing in comparison with previous years. Injecting at (semi-) public places, which implicates less hygienic and mostly hasty way of use, occurs more and more frequently (45% in 2013 versus 36% in 2011). The most common chosen injecting zones on the body are elbow, legs, arms and hands. Nevertheless, risky body parts as neck, groin, shoulder, penis and armpit are also regularly used. This way of injecting is increasingly mentioned compared to last years and increases the risk of health complications. Skin and soft tissue infections are a common complication of injecting drug use. The infections are caused by a combination of several factors: the injection of drugs into the fatty layer under the skin or by drugs leaking out of the veins, the increased number of bacteria on the skin, and tissue death due to the toxic materials in the drugs. Of the 240 respondents in the survey of Needle Exchange Flanders, about 65% did not experience an injection abscess during the last year, but 24% reported more than one injection abscess (Windelinckx, 2014).

2.3.2. Risk behaviour in injecting drug users recruited at the street in the French Community

Data on risk behaviour among IDUs in the French Community is collected using snowball operations, which have been organised by Modus Vivendi since 1993. The main objective of these snowball operations is peer prevention and targeting hard-to-reach subpopulations (see also chapter 3, section 3.1.3). To this end, volunteering IDUs serve as 'jobiste' and are trained and paid to disseminate information on aids and hepatitis prevention and other harm reduction information among their peers.

The information on risk behaviour collected through surveys administered during these snowball operations, is summarized in Table 6.4 for the years 2006-2013. However, these results are not deemed to be representative for IDUs on the street in the whole French Community. The results are not corrected for their dependence on the social network of the 'jobistes' and the questionnaire is mainly a contact tool for which the completion is not truly standardized. Moreover, the geographic coverage of snowball operations may vary from year to year depending on the supply and demand of harm reduction activities at local level. Nevertheless, the results indicate that injecting risk behaviour remains common among the recruited sample. Up to 44% reported to have shared injecting equipment and nearly 12% even injected with needles/syringes found on the street during the last six months. The time trends of these percentages are difficult to interpret due to the limits exposed above. Although the data do not allow conclusions on the extent and frequency of the risk behaviours, they clearly indicate that extreme injecting risk behaviour is not ruled out.

Table 6.4 | Proportion (%) of injecting risk behaviour among street-recruited injecting drug users in the French Community (Modus Vivendi) between 2006 and 2013

Injecting Risk behaviour	2006	2007	2008	2009	2010	2011	2012	2013
Sample size (N)	**135**	**236**	**228**	**119**	**196**	**63**	**117**	**109**
During the last 6 months, did you…								
inject with needles/syringes that had already been used by someone else?	30.4	42.4	31.1	33.6	13.8	19.0	12.8	34.9
inject with needles/syringes found at the street?	6.7	5.9	5.7	0.8	1.5	1.6	2.6	11.9
use injecting equipment already used by someone else?	47.4	53.8	56.6	29.4	26.0	31.7	21.4	39.4
give or lend used needles/syringes to someone else?	32.6	38.6	35.1	20.2	24.0	17.5	32.5	40.4
give or lend used injecting equipment to someone else?	31.1	25.8	26.3	21.0	35.2	34.9	38.5	44.0
Source: Eurotox, 2007-2014								

3. OTHER DRUG-RELATED HEALTH CORRELATES AND CONSEQUENCES

3.1. NON-FATAL OVERDOSES AND DRUG-RELATED EMERGENCIES

3.1.1. Telephone enquiries related to drug intoxications

Since 1963, the Belgian National Poison Centre receives more than 50,000 telephone enquiries each year related to acute or suspected poisoning by the general public and health professionals. In 2013, 302 of the 53,591 calls were related to substance intoxications among adults (> 14 years old; Dr. Mostin, personal communication). In 58% of the cases (n=176), only one substance was involved. 204 questions were related to illicit substances. An overview is provided in Table 6.5. The majority (22%) of the intoxications were related to cannabis and their derivatives. 15.7% were related to cocaine. The total number of calls related to illicit substances and the proportion in the major groups is similar to the previous years.

Table 6.5 | Proportion of Illicit substances mentioned during telephone enquiries received by the Belgian National Poison Centre in 2013

Substances	N	%
Cannabis	45	22.1
Cocaine	32	15.7
Not specified*	29	14.2
Amphetamine/speed	21	10.3
Ecstasy	18	8.8
GHB/GBL	15	7.4
Poppers	11	5.4
Heroine/Methadone	10	4.9
Mushrooms/hallucinogenic plants	7	3.4
Others**	7	3.4
LSD	4	2.0
Mescaline	3	1.5
Mephedrone	1	0.5
Phencyclidine	1	0.5
Total	**204**	**100**

* Unknown products
** Products about which there is no or little information at the moment of the call (e.g. blue boy, dse, shabu, horse anesthetics, FEZP, N'EYE'ZZZ, 5FPB-22)

Source: National Poison Centre, Mostin, personale communication 2014

3.1.2. Non-fatal overdose in injecting drug users in contact with syringe exchange in the Flemish region

Of the 235 valid responses in Needle Exchange Flanders 2013, 16% of the participants reported to have had at least one drug overdose the last year (Windelinckx, 2014). 7.2% even have had multiple overdoses the last year.

3.2. OTHER TOPICS OF INTEREST

3.2.1. Psychiatric comorbidity in drug users entering treatment in the Flemish region

De Sleutel is an institution consisting of several ambulatory and residential treatment centres located throughout the Flemish Community. As part of the intake interview, the European Addiction Severity Index (EuropASI), is administered to all clients entering treatment in one of the treatment centres of De Sleutel (Raes et al., 2004; Raes and Lombaert, 2004). Based on the data collected through the EuropASI, the prevalence of comorbidity between drug use disorders and other mental illnesses (dual diagnosis) is estimated by cross classifying patients as mild (severity scores 0-3), moderate (severity scores 4-5) and severe

(severity scores 6-9) on the areas 'alcohol and drug use' and 'psychiatric status'. Patients were classified as 'moderate dual diagnosis' when they had moderate problems in both the substance misuse and the psychiatric domain, or when they had severe problems in one domain combined with moderate problems in the other domain. Patients were classified as 'severe dual diagnosis' when they had severe problems in both the substance misuse and psychiatric domains.

Table 6.6 summarizes the prevalence of the psychiatric comorbidity of patients entering treatment facilities of De Sleutel in the Flemish Community for the years 2006-2013. The prevalence of psychiatric comorbidity is very common among illicit substance users (52.1%) and stable during the period 2006-2013. Also the prevalence of a severe dual diagnosis (12.6%) has been stable in this period.

Table 6.6 | Proportion (%) of injecting risk behaviour among street-recruited injecting drug users in the French Community (Modus Vivendi) between 2006 and 2013

Psychiatric comorbidity	2006	2007	2008	2009	2010	2011	2012	2013
Sample size (N)	**631**	**639**	**651**	**814**	**581**	**668**	**670**	**720**
Dual diagnosis (total, %)	51.8	52.9	49.6	50.6	53.8	53.9	48.6	52.1
Severe (%)	13.9	12.1	16.7	13.6	12.7	12.0	11.0	12.6
Moderate (%)	37.9	40.8	32.9	37.0	41.1	41.9	37.6	39.4

Source: De Sleutel, Lombaert, personal communication 2014

3.2.2. Health consequences of synthetic substances

The purity and composition of illicit drugs might result in serious health consequences (see chapter 10). Despite the concerns about the number of newly detected new psychoactive substances (NPS), a significant gap remains in our knowledge on the toxicity of these drugs. Research on the health implications of most NPS is very limited. Moreover, usually only the most serious consequences (drug-related deaths) are documented through the Belgian Early Warning System on Drugs. The MDMA content in ecstasy tablets has been rising to levels with a high risk for toxicity symptoms and even deaths, certainly in combination with dehydration in festivity settings (for more details, see chapter 7, section 2.2.). On the other hand, less 'pure' drugs were reported to be contaminated with potentially life-threatening substances (such as 4-MA in amphetamine samples) (Blanckaert et al., 2013).

4. DRUG-RELATED DEATHS AND MORTALITY OF DRUG USERS

4.1. DRUG-RELATED DEATHS IN THE GENERAL POPULATION

In Belgium, national data on drug-induced deaths is available from the General Mortality Register (GMR). Since 1991, the Federal Public Service Economy (FPS) – Directorate-general Statistics and Economic Information, centralizes the data coming from the death certificates coded by the competent administrations of the Flemish (for both the Flemish and the Brussels-Capital Region) and French (Walloon Region) Community according to the International Classification of Diseases, Injuries and Causes of Death (ICD). The 9th edition (ICD-9) was used until 1997. From 1998 onwards, the 10th edition (ICD-10) is used. The mortality information is registered with residency as a base (*de jure* information) as opposed to the region were the death occurred (*de facto* information). Data on drug-induced deaths among non-residents is available at national and regional level for the years 2003-2010.

Cases of drug-induced deaths were extracted from the 2003-2010 national mortality database using the EMCDDA "Selection B" case definition. According to this definition, cases are selected when the underlying cause of death was drug psychoses, drug dependence, non-dependent drug abuse, accidental poisoning, intentional poisoning and poisoning with undetermined intent due to opiates, cocaine, amphetamines and derivatives, cannabis and hallucinogens. The number of drug-induced deaths in Belgium by year and region are summarized in Table 6.7. In 2010, 87 drug-induced deaths were reported in Belgium of which 49 in the Flemish region, 24 in Brussels and 14 in the Walloon region. The total number of drug-induced deaths in Belgium indicates a remarkable decrease compared to 2007-2009 and abate the level of 2006. This decrease is the largest for the Walloon region. Follow-up data is needed to decide whether it is random variation or a sustainable positive trend. Of the reported drug-induced deaths, 71 persons were between the age of 25-64 years (81%). 6 persons were under the age of 25 years (7%) compared to 17 persons (12%) in 2008 and 14 persons (11%) 2009. On the other hand, we observed in 2010 that 10 persons (12%) were older than 64 years of age compared to 4 persons (3%) in 2009 and 2008.

Table 6.7 | Number of drug-induced deaths (15-64yrs) based on the General Mortality Register (Selection B) between 2004 and 2011

Region	2003*	2004*	2005*	2006*	2007*	2008*	2009*	2010*	2011
Belgium	**97**	**74**	**105**	**86**	**118**	**146**	**132**	**87**	**NA**
Flemish region	43	36	53	39	68	80	73	49	NA
Brussels	24	14	16	25	29	22	19	24	16**
Walloon region	30	24	36	22	21	44	40	14	NA

Sources:
* GMR 2004-2009 (FPS Economy – Directorate-general Statistics and Economic Information)
** Brussels: Observatoire de la Santé et du Social de Bruxelles-Capitale

4.2. DRUG-RELATED DEATHS REGISTERED BY THE BELGIAN EARLY WARNING SYSTEM ON DRUGS

The post-mortem toxicology results reported by the Belgian Early Warning System on Drugs (BEWSD) give some more detailed information on the substances associated with drug-related deaths. It should be mentioned that this is a non-exhaustive list, as post-mortem toxicology is not systematically reported to the BEWSD by all laboratories performing post-mortem analyses.

In 2012, the BEWSD received 13 reports related to a drug-related death. Opioids were detected in seven cases, as well as methadone was detected in all these cases. Heroin was reported in only one case. Stimulants (mainly amphetamine) were detected in 8 cases. In one case, MDMA was detected; 3 cases also contained 4-MA, an amphetamine contaminant which was already responsible for the death of at least 6 people in Belgium in 2011-2012 (Blanckaert et al., 2013).

A total of 40 drug-related deaths were reported to BEWSD in 2013. In half of the cases (n=21) opioids were detected, mainly methadone (n=14) and morphine (n=9), but also one case with fentanyl. Five of the cases were associated with heroin. Stimulants were detected in three quarter of the cases (n=31), mainly amphetamine (n=20) and cocaine (n=16). Other detected products were MDMA (1), PMMA (1) and GHB (1). As the numbers suggest, polydrug use is quite common. 14 drug-related deaths were associated with both opioids and stimulants.

5. CONCLUSIONS

Injecting drug use is and remains an important mechanism for the transmission of blood born infectious diseases, especially the Hepatitis C virus. While harm reduction campaigns with focus on not sharing needles/syringes were successful as observed through a reduction of this injecting risk behaviour, about 40-45% of the injecting drug users still reported the sharing of paraphernalia. A recent cross-sectional study from Scotland showed a high risk for HCV when sharing needles and an increased risk of transmitting HCV when sharing paraphernalia (without sharing needles), especially when sharing filters and containers (Palmateer et al., 2014). A review on interventions to prevent HIV and HCV in people who inject drugs indicated that harm reduction interventions could reduce injecting risk behaviour, with evidence strongest for OST and needle exchange programmes (Macarthur et al., 2014). However, there is comparatively little review-level evidence regarding the effectiveness of these interventions (OST; needle exchange programmes; information, education and counselling) in preventing HCV transmission among injecting drug users. Emerging evidence points out that interventions need to be provided in combination with each other and with a high coverage to prevent the risk of HCV (and HIV) in injecting drug users. Additionally, since HCV transmission happens much easier and at an earlier stage among injecting drug users than HIV, many are already infected with HCV before contacting harm reduction programmes such as OST and needle exchange programmes. This emphasizes the need to develop information, education and counselling programmes that can also reach younger injecting drug users.

An interesting finding is the decrease of drug-induced deaths in 2010, especially for the Walloon region. This trend is also observed in other countries in Europe: an increasing trend between 2003 until 2008/2009, followed by a stabilisation and a decrease thereafter (EMCDDA, 2013). At this moment, an evidence-based explanation for this decrease is not available yet. The most common cause of drug-induced death is a drug overdose with opioids as most commonly involved drug. The majority of high risk opioid users is or has been in contact with health care (EMCDDA, 2014). One reasonable hypothesis might be that it reflects a (late) treatment effect of substitution therapy for opioid users (OST). In Europe, it is observed that the cohort with problematic opioid drug users is aging and about 90% of the reported deaths by overdose are people above 25 years old (EMCDDA, 2014). In Belgium, 93% of the overdose deaths were people above 25 years old and we observe a tendency of an increasing number of drug-induced deaths above the age of 64. A recent study of Degenhardt and colleagues showed that the major cause of death in a cohort with OST still was accidental opioid overdose, especially among younger users (<40 years). As the cohort aged, accidental overdoses are still an important cause of death (but it occurred less frequent), while other causes such as infectious diseases, liver

disease, cardiovascular and respiratory diseases gained importance (Degenhardt et al., 2014). Since its introduction, OST has not resulted in a clear decrease of opioid overdose deaths. On the contrary, it has been observed that there is a raised risk of death in the first month of OST and especially during the first month after ending the treatment, which might negate any protective effect of OST on mortality (Cornish et al., 2010). The authors of this study suggested that prolonged OST might result in this expected protective effect. In Belgium, the organization and use of OST differs between the regions, but at this moment, a detailed OST register is lacking. Such a register could be helpful in studying these statements and in formulating policy recommendations.

In general, the drug related health consequences are substantial, but also mainly sparsely documented. Implementation of interventions with a high coverage, e.g. needle exchange programmes, seems to be effective in reducing certain risky injecting behaviour. However, the effects on health consequences seem to be minimal, as there is no high coverage of a combination of interventions to tackle the different facets of risk behaviours in injecting drug use at the same time.

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