MISSION REPORT

HIV in people who inject drugs - Joint technical mission to Luxembourg

19 – 22 March 2018

European Monitoring Centre
for Drugs and Drug Addiction

This mission was conducted by representatives from the European Centre for Disease Prevention and Control (ECDC) and the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA). The report was jointly produced by both agencies.

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Abbreviations

AIDS	Acquired immunodeficiency syndrome
ART	Antiretroviral therapy
CD4	cells subtype of T lymphocytes (T helper cells)
CHL	Centre Hospitalier de Luxembourg
DCR	Drug Consumption Room
ECDC	European Centre for Disease Prevention and Control
EMCDDA	European Monitoring Centre for Drugs and Drug Addiction
EEA	European Economic Area
EU	European Union
HBV	Hepatitis B virus
HCV	Hepatitis C Virus
HIV	Human immunodeficiency virus
IDU	Injecting drug use
LIH	Luxembourg Institute of Health
NGO	Non-governmental organisation
NSP	Needle and syringe programmes
UNODC	United Nations Office on Drugs and Crime
OST	Opioid substitution treatment
PWID	People who inject drugs
PrEP	Pre-exposure prophylaxis
WHO	World Health Organization

Executive summary

The European Centre for Disease Prevention and Control (ECDC) and the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) responded to a request by the Ministry of Health of Luxembourg to conduct a joint country mission to review the observed increase in reported HIV cases among people who inject drugs (PWID) in Luxembourg and to propose key actions.

During a four-day visit to Luxembourg, the mission team visited services for PWID, including needle and syringe exchange (NSP) at mobile and fixed sites, a drug consumption room (DCR), opioid substitution treatment (OST) services, residential drug services, and prison services. The team met with clinicians involved in HIV care for PWID, with teams delivering drug treatment, with representatives responsible for HIV surveillance activities, with the National Drug Coordinator, with staff involved in the provision of services for homeless/socially excluded individuals, and with NGOs engaged in HIV testing, prevention and control.

From 2014 to 2016, there was an increase in the number of new HIV diagnoses attributed to injecting drug use (IDU) (from 10 or fewer to 19-21 new diagnoses per year). New diagnoses due to IDU decreased to 10 in 2017. The majority of these cases were infected between 2012 and 2016 and linked to transmission clusters in Luxembourg City and Esch. A higher proportion of women and cases of younger age at diagnosis were noted in the outbreak-related cases as compared to other EU/EEA cases attributed to IDU. Since 2010, drug services in Luxembourg had observed a pattern of high-risk drug use including cocaine injection and the combined use of cocaine with heroin. In parallel, the number of clean syringes distributed declined in the four years preceding the outbreak. The DCR, a central harm-reduction service for Luxembourg that was opened in 2005, reached and exceeded its capacity.

Several factors were identified that could explain the outbreak. First, the increase in cocaine injecting use is likely to have led to an increased risk of HIV transmission among drug users through more frequent unsafe injections combined with increased social marginalisation. Second, given the relatively high proportion of women among cases and association with cocaine use, unsafe sex could have contributed to disease transmission among PWID.

The response to the outbreak had a strong multi-disciplinary component reflected by the high-quality and well-targeted action plans on drugs and HIV. The following recommendations should be considered as measures that may further strengthen prevention and control of HIV among PWID in Luxembourg. First, encourage greater coordination of services by developing action plans for drugs at the municipal level. Second, scale-up and decentralise drugs harm reduction services and case management (inclusive of cocaine users) by opening additional integrated facilities which offer a range of services including supervised consumption and case management services in Esch and Luxembourg City. Third, expand HIV and HCV testing and linkage to treatment. The ‘treatment as prevention’ approach can be consolidated by expanding the use of rapid HIV tests in mobile services and by providing antiretroviral treatment at locations where HIV positive drug users spend their time and with attention to other basic needs (housing, OST, counselling, psychosocial support). Fourth, adapt the offer of services to meet women’s, young people’s and migrants’ needs and further support prevention of sexual transmission of HIV among drug users. Finally, conduct an epidemiological study to identify risk factors for transmission of infectious diseases among drug users in order to further target interventions and better meet the specific needs of this population.

1. Introduction

Background

Responding to a request of the Ministry of Health of Luxembourg, the European Centre for Disease Prevention and Control (ECDC) and the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) conducted a joint country mission from 19-22nd March 2018 to review the situation of an observed increase in reported HIV cases among people who inject drugs (PWID) in Luxembourg.

Scope and purpose

The objective of the joint technical mission was to

1. Review in detail the epidemiology behind the increased HIV infections in Luxembourg, with a focus on cases detected in PWID
2. Review current HIV testing, prevention, treatment and harm reduction activities for PWID and other target groups
3. Propose key actions for strengthening HIV surveillance, treatment, harm reduction and prevention activities for different target groups in various settings
4. Propose, if necessary, key actions for strengthening drug addiction surveillance, treatment, harm reduction and prevention activities.
5. Identify any priority areas where ECDC and EMCDDA might provide further technical support.

Team

The mission team was composed of 4 experts, one each from ECDC and EMCDDA and external experts from Greece and Scotland. Throughout the mission the team was supported by Luxembourgish colleagues, particularly by representatives of Ministry of Health. A list of the mission team and experts participating in meetings and visits during the mission is presented in **Annex 2**.

Method

The mission was organised around a four-day visit to Luxembourg. Key reports and documents were made available to the team prior to the visits and were used to better understand the context and to prepare a series of key questions that were then raised and investigated during the visit.

The visit started with a half-day seminar held at the premises of the Ministry of Health in Luxembourg City which involved key stakeholders from a range of organisations including government agencies and NGOs to discuss the latest epidemiology and drug-related infections trends. Experts from the team visited key services for PWID in Luxembourg, including state services and NGOs. Visits were made to needle and syringe exchange (NSP) at mobile and fixed sites, a drug consumption room (DCR), opioid substitution treatment (OST) services, residential drug services, and prison services. The mission team also met with clinicians involved in HIV care for PWID, with multidisciplinary teams delivering drug treatment, with representatives responsible for HIV surveillance activities, with the National Drug Coordinator, with the EMCDDA national focal point, staff involved in the provision of services for homeless/socially excluded individuals, and with NGOs engaged in HIV testing, prevention and control. During these site visits and interviews, the team was able to interact with various staff members working in the field and to ask questions regarding programme implementation and challenges.

At the end of the visit, the team met again with core key stakeholders to share the main findings of the mission and to discuss possible recommendations. Full details of the mission programme are provided in **Annex 1**. The documents provided to the mission team are listed in **Annex 3**.

2. HIV epidemiology, treatment and care

HIV epidemiology

HIV surveillance in Luxembourg is conducted by the National Service of Infectious Diseases at the Centre Hospitalier de Luxembourg (CHL). The reporting of newly diagnosed cases by clinicians is voluntary, however due to centralised confirmatory testing at the CHL reference laboratory, underreporting of new HIV diagnoses is likely to be minimal. Diagnosed cases are included in an integrated database at CHL which includes data on epidemiology, virology, and clinical follow-up of patients.

Luxembourg reports HIV data nationally by date of statistics (ie, data of report to the surveillance system) rather than date of HIV diagnosis. Over the last decade, the rate of new HIV diagnoses in Luxembourg has increased from 9.9 to 17 cases notified per 100 000 population[1] (while the EU/EEA rate has declined slightly from 6.8 to 5.7 diagnoses per 100 000 population over the same period). Since the beginning of HIV surveillance in the 1980s, most HIV cases reported in Luxembourg were acquired through heterosexual transmission or sex between men (Figure 1). During the period 2002-2017, there have been sustained increases over time in the number of new HIV diagnoses due to these transmission modes, however 40-50% these cases are likely to have acquired HIV prior to arriving to Luxembourg. The majority of cases with heterosexually acquired HIV originate from sub-Saharan Africa (49%) and Western Europe (29%), while the majority of new diagnoses due to sex between men originate from Western European countries (51%).

Increased transmission among PWID

From 2014 and continuing until 2016, there was an increase in the number of reports of new HIV diagnoses attributed to injecting drug use (from 10 or fewer to 19-21 new diagnoses per year). New diagnoses due to injecting drug use (IDU) decreased to 10 in 2017. Among 77 diagnoses attributed to IDU during 2013-2017, 88% (68) were new infections that were likely to have been acquired in Luxembourg. The majority of persons with IDU-acquired HIV originate from Luxembourg (56% of cases diagnosed 2013-2016) or Western European countries (31%). Among persons diagnosed with HIV due to IDU in Luxembourg between 2013 and 2016, a higher proportion of women (33% in Luxembourg vs. 20% in the rest of the EU/EEA) and of people of younger age at diagnosis (mean age at diagnosis 32.1 Luxembourg vs 36.7 EU/EEA) were noted. These distributions continued among the cases diagnosed in 2017.

Phylogenetic cluster analysis

Phylogenetic analysis performed by the Luxembourg Institute of Health (LIH) concluded that the majority of sequences in IDU cases that were isolated during the outbreak belonged to subtype B (N=39, 73.6%) and CR14_BG (N=9, 17.0%). Overall, 89.7% of the subtype B outbreak sequences fell within a single phylogenetic cluster which showed tight and rapid transmission links; slightly more than half of the cases in that cluster where information about site of test was known were tested at Abrigado needle exchange/drug consumption room in Luxembourg City. A second smaller cluster of 9 IDU transmissions was localised in the city of Esch. Phylogenetic data indicates that the majority of HIV transmission in both clusters took place from 2012-2016, but continues in 2017 with 55% of

[1] In 2017 the population of Luxembourg was 590,667 with approximately 390,000 persons aged between 15 and 64 years of age; 48% of the population does not have Luxembourgish nationality.

newly diagnosed PWID in 2017 within the sub-type B PWID cluster in Luxembourg City. Phylogenetic data indicates that the outbreak strains circulating are Luxembourgish strains.

HIV testing

HIV testing services in Luxembourg are conducted through a mixture of public and private laboratories. The majority of HIV tests in Luxembourg occur in conjunction with surgery, antenatal screening, blood donation or are performed based on clinical indications. Only trained medical doctors are allowed to provide a positive confirmatory result to a patient. Rapid blood testing is performed by trained medical personnel at HIV Berodung two evenings a week. A mobile outreach van is used to target HIV testing at high-risk groups. This is run by HIV Berodung DIMPS and XChange/MOPUD (Mobile Prevention Unit for Drug Users), the latter specifically targeting PWID. This outreach testing occurs on a weekly basis at *Jugend-an Drogenhëllef* (JDH), Abrigado, and at two other sites within Luxembourg City, as well as in Esch and Ettelbrück. A counselling session which includes a two-page questionnaire occurs at the first testing occasion. Upon a positive result, venous blood is drawn to send to the laboratory for confirmatory testing. HCV testing and syphilis testing are also available for rapid testing in the same locations.

HIV treatment and care

Antiretroviral treatment is provided regardless of CD4 count in Luxembourg to all patients with social health insurance. In cases where patients lack social health insurance, HIV Berodung have been able to forge solutions to ensure access to ART. About 90% of HIV-positive patients are followed by the four infectious disease specialists at Centre Hospitalier de Luxembourg, although smaller numbers of patients are followed by infectious disease specialists in Esch and at Hopitaux Robert Schuman. Although some patients receive methadone prescription from their CHL infectious disease specialist, there is little other systematic link between somatic and drug treatment or additional psychiatric care for patients living with HIV.

Luxembourg estimates that nationwide in 2017, 85% of all persons living with HIV had been diagnosed, which is very near the EU/EEA average. High proportions (97.8%) of those diagnosed are retained in care and many retained in care (88.3%) are on ART. Among those on ART, 92.5% are virally supressed.

HIV-positive injecting drug users have lower linkage to and retention in HIV care (65.3% of those ever diagnosed in Luxembourg are retained in care) (Figure 2). Among HIV-positive PWID that are retained in care, many are on ART (92.7%) and 88.7% of these patients are virally suppressed. Among PWID diagnosed since 2013, 73% are retained in care and on ART with undetectable viral load. There is no systematic tracing of patients that are lost to follow-up as part of clinical activities.

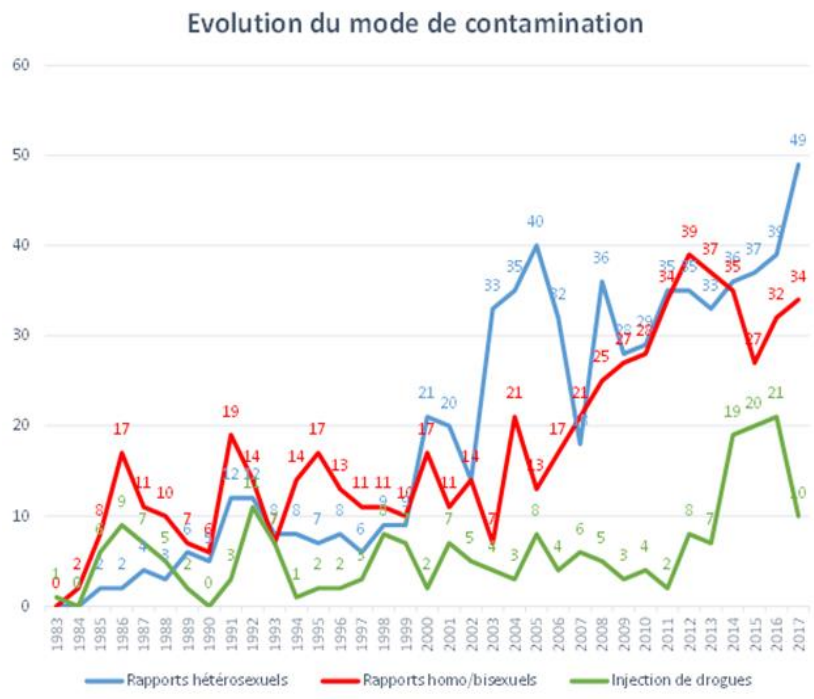
There is a high rate of co-infection with hepatitis C (HCV) among HIV-positive people who inject drugs (85%) in Luxembourg. New direct acting antivirals are provided to treat HCV in the community as well as in prison although the coverage of HCV treatment is not known due to a suspected high undiagnosed fraction of HCV.

Summary:

- An increase in newly reported HIV diagnoses cases attributed to IDU transmission was noted from 2014 to 2016.

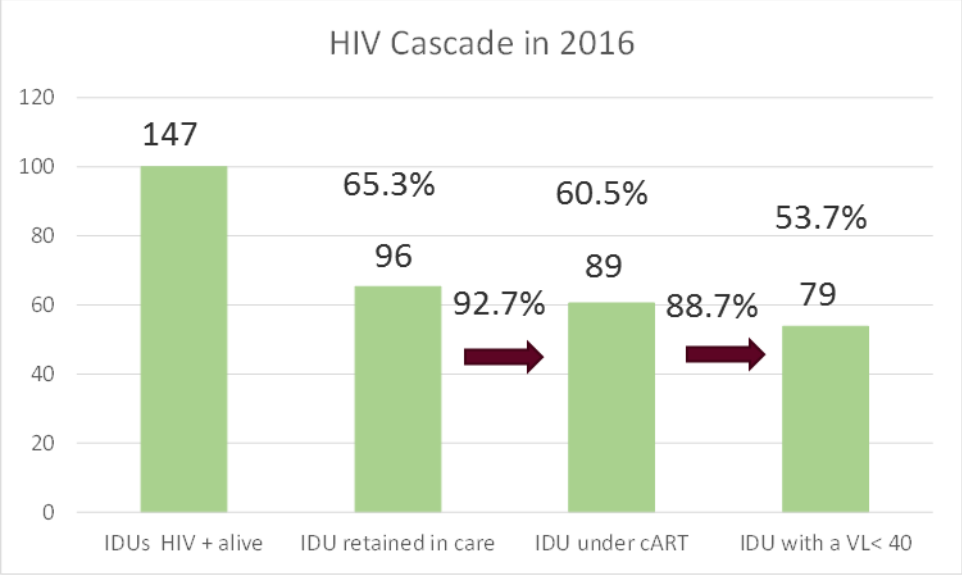
- The majority of these cases were probably infected between 2012 and 2016 and linked to transmission clusters in Luxembourg City and Esch.
- As compared to the EU/EEA average during the same period, there were higher proportions of women and younger people among the IDU cases diagnosed in Luxembourg. However it should be noted that this finding needs to be interpreted in the context of the overall small number of cases reported.
- Only about two in three diagnosed IDU-related cases are retained in HIV care, whereas among all diagnosed PLHIV in Luxembourg, this rate is estimated to be 97.8%. However among those IDU-related cases retained in care, ART coverage and viral suppression are relatively high (92.7% and 88.7%, respectively) and retention in care and viral suppression appears to be a bit higher still among cases diagnosed during the outbreak.
- Newly reported HIV diagnoses attributed to IDU has fallen to 10 in 2017, after reaching a peak of 21 cases in 2016.

Figure 1: New HIV diagnoses in Luxembourg, by transmission mode, 1983-2017



Source: LIH, 2018

Figure 2: HIV continuum of care for people who inject drugs, Luxembourg, 2016



Source: LIH, 2018

3. Problem drug use in Luxembourg

Drug market

Based on data from the Judicial Police, most illicit drugs consumed in Luxembourg come from the Netherlands (cannabis production and transit of other drugs), Belgium (MDMA production and transit of other drugs) and Morocco (cannabis production). Available information suggests that the cocaine sold in the streets of Luxembourg originates from Latin America and transits via Southern Europe before reaching the Netherlands. The retail price of one gram of cocaine ranges from 15 to 100 euros in Luxembourg, while the price of one gram of heroin ranges from 8 to 25 euros. In recent years, the expansion of well-organised and rapidly-adapting distribution networks contributed to a significant increase in cocaine and cannabis availability [1].

Drug use in the general population

Based on the European Health Behaviour Interview Survey (EHIS) conducted among a sample of 4,138 inhabitants in Luxembourg in 2015, the illicit substances most commonly used in the general population after cannabis were cocaine and MDMA. Last 12 month prevalence of use among people aged 15-64 years in Luxembourg was below the EU average at 4.9% for cannabis and 0.4% for cocaine [1].

Problem drug use

The prevalence of problem drug use (high-risk drug use leading to physical, psychological and/or social harms) is measured through indirect statistical methods. The Luxembourgish Information System on Drugs and Drug Addiction (RELIS) was developed and is maintained by the EMCDDA national focal point. It includes data from specialised drug agencies, law enforcement agencies, prisons and psychiatric departments of general hospitals. A series of studies based on the RELIS estimated that in 2015 there were 2,300 high-risk drug users (5.79 per 1,000 aged 15-64 years) among whom 1,500 (3.77 per 1000 aged 15-64 years) were people who currently inject drugs and 1,700 (4.46 per 1000 aged 15-64 years) were high-risk opioid users. The prevalence of high-risk drug use has been decreasing since 2003.

The mean age of high-risk drug users entering drug treatment increased from 31.6 years in 2010 to 34.2 years in 2016. The sex ratio (M/F) is 5.7. Among users reporting an opioid as the primary drug, the proportion who reported injecting the drug decreased from 59% in 2010 to 47% in 2016. The proportion of Luxembourgish nationals among high-risk drug users has decreased from 49% in 2010 to 37% in 2016. While 31% of high-risk drug users reported stable accommodation in 1995, the current proportion has risen to 67%. The unemployment rate is 55% [1].

Based on RELIS data from 2016, the most common pattern of use includes injecting heroin and cocaine associated with poly-drug use. There has been an increase in the combined use of cocaine and heroin (‘speedballing’) based on data from the drug consumption room. In 2016, cocaine reported as the primary drug reached 18% among users reported by RELIS, similar to high levels in the previous two years (19%) (Table 1). This trend is confirmed by reports from the drug consumption room where the proportion of users reporting use of cocaine or mixtures containing cocaine (mainly cocaine with heroin) has been increasing steadily from 5% in 2012 to 33% in 2017.

Table 1 Primary and secondary cocaine use (valid %) in drug users, Luxembourg, 2012-2016

Year	RELIS recorded drug users				
	Primary drug		Secondary drug		Total
	Cocaine IDU[a]	*Cocaine non-IDU*[a]	*Cocaine IDU*[a]	*Cocaine non-IDU*[a]	Cocaine
2012	4	9	18	22	**53**
2013	6	11	13	21	**51**
2014	6	14	22	19	**61**
2015	8	11	20	24	**63**
2016	7	11	18	21	**57**

Source: RELIS

[a]IDU, Injecting Drug Use.

Drug-induced deaths

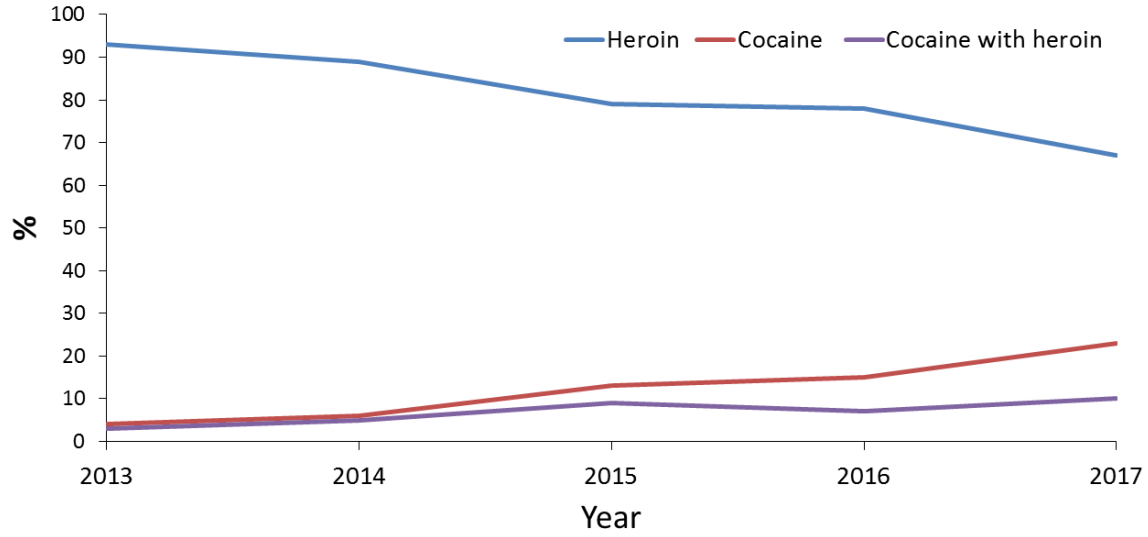
The number of fatal acute overdoses showed a downward trend over the last decade. Twenty-six people died from an acute overdose in 2000. In 2014, 2015 and 2016, there were 8, 12 and 5 fatal overdoses, respectively [1,2]. In 2016, the corresponding fatal overdose rate per 100,000 inhabitants aged 15-64 years was 1.3. The most frequently involved substance in overdoses was heroin, followed by methadone and cocaine. Most victims were male and their mean age has been increasing from 29 years in 2000 to 42 years in 2016.

Harm reduction and treatment

The National Drug and Addiction Strategy and Drug Action Plan (2015-2019) build their harm reduction and drug demand reduction efforts around a network of harm reduction and treatment services. Luxembourg opened its first DCR in the capital city in 2005. The facility is located in a two-story container complex near the main train station. It is an integrated centre providing multiple services for drug users, including a counselling centre, the largest NSP in Luxembourg and a space for supervised drug consumption, both injecting (8 injection tables) and, since 2012, blowing (6 tables). The facility is open 7 days a week and combined with a night shelter for drug users. In 2017, a total 73,154 supervised consumptions (both injecting and smoking) occurred in the DCR, with an average of 204 consumptions per day. Since opening in 2015, over 415,000 consumptions have been supervised. The number of registered users and of supervised consumptions has been steadily increasing since 2005, with a total of 1,717 users registered through 2016. Since its creation, no fatal overdose has occurred within the DCR.

NSP are implemented in several locations (including in prison). In 2016, there were a total of 150,937 contacts registered with low-threshold agencies. In the same year, a total of 423,060 syringes were distributed (corresponding to a return rate of 94% and a number of clean syringes per PWID per year estimated at 240). Outpatient OST is available through the *Jugend-an Drogenhëllef* (JDH) foundation and private licensed medical doctors The number of outpatients receiving prescription of substitution drugs was 1,085 in 2016 [1]. This corresponds to an OST coverage of 62%. In prison, integrated and comprehensive care to drug users, with access to NSP and OST, coupled with psychosocial support is provided by the somatic medical service, the psychiatric service and the TOX programme.

Figure 3: Main types of drugs used (% of yearly contacts) in the supervised drug consumption room, Luxembourg, 2013-2017



Source: CNDS 2018

Summary:

- Cocaine availability has increased in recent years in Luxembourg
- The total estimated number of PWIDs in Luxembourg (2015) was 1,500
- A recent pattern of high-risk drug use includes cocaine use (injected and smoked) and the combined use of cocaine with heroin
- The number of overdose deaths was 5 in 2016 (1.3 per 100,000 population aged 15-64 years)
- The drug action plan supports harm reduction services (NSP, drug consumption room) and access to OST medication.

4. Findings

Coordination

Luxembourg has high-quality and well-targeted national action plans on drugs and HIV [3,4] supported by well-documented annual drug reports with multiple data sources covering all key indicators [1]. The national drugs action plans are externally evaluated at the end of their implementation periods and the results of the evaluation are considered in the framework of the subsequent drugs action plan. The existing coordination structures (the National AIDS Committee and the *Suchtverband Luxembourg* that brings together four low-threshold drug services) meet regularly. There appears to be good communication and collaboration between the actors, although most of this is done on informal grounds rather than via formal mechanisms.

All services visited have excellent infrastructures and their multidisciplinary staff appear highly motivated and open to new ideas. There is the political will to address issues around PWID and Luxembourg has put in place innovative best practices in the field of harm reduction by opening a

drug consumption room in 2005 and by providing integrated health care and harm reduction services in prison. The police are well-informed about harm reduction services and they collaborate constructively with the staff of the drug consumption room. Moreover, the Ministry of Health supports a 'treatment as prevention' approach to prevent transmission of HIV and HCV.

The high level of coordination, formalisation and multi-disciplinarity of care services that was observed in the central prison, was less seen among the care services provided in the community. While the municipality is actively involved in outreach programmes for the homeless, the involvement of the municipality in the planning and delivery of services for drug users is limited; e.g. their teams have few exchanges and coordination with outreach teams from other services reaching drug users (XChange/MOPUD providing NSP and HIV/HCV testing).

Possible factors explaining the outbreak

Cocaine use has been increasing in the last 5 years throughout Luxembourg. This trend is reflected in treatment data, in observations from the drug consumption room and from the police. Cocaine use, and cocaine injection in particular, is likely to be associated with increased risk (both increased frequency of injecting with sharing of material, and unsafe sex) that might have contributed to the outbreak. The association between stimulant use and high-risk behaviours has already been documented during HIV outbreaks in Europe [5,6,7].

Moreover, while syringe provision was highest in 2004, when 435,000 syringes were distributed [1], it declined steadily to less than half this number in 2013, a year before the increase in HIV cases was observed. This decline in clean syringe provision prior to the outbreak is likely to have reflected a decrease in the *demand* for clean injecting material since there was no structural decrease in the *availability* of NSP in Luxembourg at the time. Factors behind this decreasing demand could include increasing cocaine use (from 2010 onwards) and marginalisation that led to more chaotic lifestyle and risk-taking behaviours among drug users. The resulting lower rate of safe injections might have contributed to HIV transmission among PWID. The amount of clean injecting material distributed increased again following the detection of the outbreak and nearly reached the original number (423,000) syringes in 2016 [1].

While the drug use pattern of HIV cases as well as their geographical distribution would require further descriptive analysis, the relatively high number of female drug users among new HIV cases may support the hypothesis that sexual transmission could have contributed to disease transmission. It is difficult to distinguish HIV infection via injecting drug use from HIV infection via sexual transmission in people who inject drugs, and further testing of this hypothesis could be achieved through a dedicated epidemiological study.

Harm reduction services and linkage to drug treatment

The opening of the *Abrigado* facility with integrated drug consumption room in 2005 and the high number of injections that have been supervised since then is likely to have contributed to the reduction in overdose deaths in the community. The facility occupies a central position in the harm reduction response of the city of Luxembourg and nationally. This is reflected by the very intensive use of its services, including the NSP and DCR. Also, the proportion of users choosing smoking rather than injecting as a route of administration has increased among clients of the DCR (users are informed about the higher risks linked to injection and the DCR includes a section for smokers). It remains, to date, the central provider of harm reduction services and the only DCR in Luxembourg

City, which is home to the majority of the estimated 1500 people who inject drugs. As the facility offers other services, including a shelter, and because open drug scenes are not tolerated elsewhere in the city, users gather and inject drugs outside the DCR, often remaining there constantly. Feedback from DCR staff as well as a broad range of stakeholders including the AIDS Committee was that the DCR is over-crowded and has exceeded its service provision capacity. This was also observed by the mission team during a visit to the DCR. Stakeholders also shared the view that the co-location of a night shelter on the premises of the DCR meant that many users remained on the premises constantly and did not get away from the drug scene or to locations where other services were available. There was agreement from a wide range of stakeholders that these factors had led to a concentration of unsafe drug use in a single location.

Total NSP coverage in Luxembourg is high (>200 per PWID per year) and above the EU average – and the return rate is high (94%). NSP is available in fixed services (*Abrigado* DCR, *Kontact 28*, sex worker *DropIn* Luxembourg City, *Contact Esch* in Esch, *Contact Nord* in Ettelbrück) and at 3 automatic dispensers in Luxembourg city. Mobile services are provided by the *Xchange/MOPUD* programme 3 days a week in the capital. Despite this decentralisation of NSP services, the actual provision of clean injecting material remains highly centralised. More than 90% of clean needles and syringes distributed in the country are provided by the *Abrigado* drug consumption room (the DCR has NSP counters inside as well as outside the structure). Whilst there is access to NSP twenty-four hours per day in these 3 cities, availability and accessibility may be an issue for pockets of PWID populations. Women and younger users could be among those with sub-optimal access to clean injecting material. The available NSP has a significant emphasis on needle exchange, often limiting the supply of needles to a small increase over what has been returned.

While high-quality drug treatment services are available, there is little connection to the low-threshold offers, and the high demand for services at Abrigado does not translate into successful referrals to drug treatment (including OST and psychosocial support). Over-crowding at the DCR leaves little time and place for staff to provide dedicated services to individual drug users, such as case management and tailored information and support towards drug treatment entry. Furthermore, an important barrier to entry into residential treatment exists for a considerable group of Abrigado users, as the main point of entry to the residential drug treatment facility (*Syrdall Schlass Manternach*) is at one location in Luxembourg City (*Alternativ Berodungsstell*) and the treatment itself is currently accessible to Luxembourgish or German-speaking patients only. Drug users can also be referred to residential therapy centres abroad and treatment costs are covered by Social Security. Between 100 and 150 patients are treated abroad annually in such residential centres.

Only a small number of OST clients are managed in the multi-component programme at the *Jugend-an drogenhëllef foundation* (JDH), while the main share (90%) of the treatment is delivered by private medical doctors. There are no binding national guidelines for dosage. JDH staff provides a one-day training session to any medical doctor who wants to obtain the licence to prescribe OST, but there is no more active formal network of prescribing doctors to encourage mutual exchange and support in the practice of prescribing and there are few exchanges with JDH after the training. While all OST prescribers with whom the mission team spoke described OST dosing as decided in discussion with the client, examples of average doses provided were often rather low, and the extent to which optimal dosing is occurring could be further assessed.

HIV testing and linkage to ART treatment

The majority of HIV testing that reaches PWID is performed through mobile outreach services in Luxembourg City, Ettelbrück and Esch. While this approach is an effective manner in which to reach some populations of PWID, it may miss those who do not frequent the services or geographical areas targeted by the mobile testing.

The delivery of an HIV-positive test result in Luxembourg must be provided by a medical doctor, and only trained health care staff may perform the rapid testing. These aspects could serve as a barrier to the decentralisation of highly-accessible and regular HIV testing for high-risk groups such as PWID. Furthermore, the 2-page questionnaire conducted as part of pre-testing counselling (for first test) in mobile outreach services may serve as a barrier for some populations of PWID.

There is no systematic approach to infectious diseases testing of persons accessing drug treatment services in Luxembourg. Lack of a routine testing offer is particularly acute among the majority of individuals who access drug treatment services via general practitioners, but could also be further improved in services such as JDH. Yearly health check-ups of people receiving opioid substitution treatment are considered an important best practice and introducing them may serve as a useful opportunity for HIV (and HCV) counselling and testing in Luxembourg [8].

Among those who test HIV-positive, there is no formal system for active linkage to care or systematic tracing of HIV patients that are lost to follow-up, although informal mechanisms for these were described in some instances. HIV linkage to care and treatment is made more difficult when the patient is homeless, which is frequent among PWID - and even more so among undocumented migrants - due to the lack of health insurance.

HIV treatment is available to all irrespective of CD4 count, which is in line with global and regional treatment guidelines [9, 10]. While HIV treatment is formally available only to those with health insurance, informal mechanisms to allow those without health insurance to access antiretroviral treatment on a case-by-case basis were described. There is concern that it will become increasingly difficult for services to subsume these drugs costs within their budgets.

Pre-exposure prophylaxis for HIV (PrEP) is approved for use in Luxembourg and, while guidelines allow all populations at risk to access PrEP, it is so far mainly targeted toward high-risk men who have sex with men. Like ART, access to PrEP is dependent on having health insurance.

There are multiple challenges surrounding many HIV-positive PWID patients' social situations including homelessness, active drug use, mental health needs. Services for such patients are provided in different locations (infectious disease and somatic care in one location, drug treatment elsewhere, social services elsewhere) with no case management of multiple care needs.

Needs of particular groups

It was noted that younger drug users appear more in the drug use statistics than in the service utilisation statistics. This may indicate that harm reduction and drug treatment services are not attracting or retaining younger users.

Larger proportions of women were noted among those infected with HIV than in PWID populations in other EU/EEA settings. Women also appeared less in DCS/LTHSC at Abrigado and the drop-in centre statistics, but appeared to more often access the mobile XChange/MOPUD needle exchange

service which has quite restricted hours. This may indicate that female PWID have different and possibly unmet needs for harm reduction and low-threshold services.

Patients with irregular migration status or otherwise lacking social health insurance are not ensured access to ART, although informal solutions for this have been found on a case-by-case basis. Such patients do not have access to drug treatment or counselling services.

In nearly all services visited, language was listed as a barrier for service to some migrant populations. Russian-speaking clients were listed several times as a relatively new group with whom language contact was difficult.

5. Recommendations

Formalise coordination

- Formalise and improve inter-service coordination of multidisciplinary care and through-care for drug users, including those living with HIV and/or HCV. The newly created '*Suchtverband*' may contribute to further developing communication and synergies between specialised care providers.
- Encourage greater active involvement of the municipality in existing services targeting drug users such as outreach NSP programmes or linkage to addiction treatment services. Information gathered by municipal workers could also be useful to guide outreach activities done by the XChange/MOPUD programme by targeting new areas where vulnerable drug users are known to inject.
- Encourage the development of action plans for drugs at the municipal level.

Scale up and decentralise harm reduction services and case management

- Open additional integrated harm reduction facilities which offer a range of services including supervised consumption and case management services in Esch and Luxembourg City in order to meet the demand. Consider carrying out a new needs assessment of complementary harm reduction services in the Northern region of the country (including the possibility of opening another facility that includes a drug consumption room in Ettelbrück) to decentralise service offers and decrease the pressure on other facilities. In Luxembourg City, consider how to target DCR services to better suit the needs of groups not currently using Abrigado, particularly women.
- Reduce overcrowding at the Luxembourg City DCR by, for example, considering the relocation of the night shelter to another location in order to help reduce overcrowding and to contribute to the stabilisation of clients in another setting.
- Provide more education on risk of HIV and HCV transmission, including sexual transmission, to drug users attending low-threshold services, and provide all necessary risk reduction materials. Always combine NSP with condom and lubricant provision.
- Expand the geographical availability of NSP within and outside of Luxembourg City. Opportunities include expansion of the outreach programme which currently operates on a limited number of evenings or developing links with municipal workers who are in contact with the target population or are able to identify area of need (possibly where municipal workers have identified squats or discarded injecting materials). A broader assessment of need and consideration of tiered NSP services could support wider geographic coverage. Promote needle return but consider loosening the return policy in order to increase syringe provision to active users who do not have syringes to exchange. It is particularly important to consider this in light of the increasing cocaine use which results in higher levels of injection.
- Strengthen the case management approach for clients at low-threshold services, enabling a tailored approach that helps individuals to address the whole range of their problems (social, financial, work, housing, health drug use). Drive demand for drug treatment (including stimulant use) according to needs by providing adequate human resources to low-

threshold services to be able to address counselling and referral to treatment. This offer could be improved through formalisation, coordination and strengthening of these services.

- Address stimulant use by offering effective treatment for cocaine users. There is evidence that psychosocial interventions, medical treatment (disulfiram, antidepressents), contingency management can reduce stimulant use [11, 12, 13, 14]. For those not ready for treatment, re-emphasise harm reduction messages (safe injecting, smoking rather than injecting, safe sexual behaviour) in all harm reduction services.
- Optimise treatment of opioid dependence according to latest evidence (combination of supportive interventions and psychosocial therapy when required, treatment of mental health problems). Revise, adapt and update national quality standards of care according to international guidance and best practice experiences in neighbouring countries. Revive the supervision group of OST-prescribing medical doctors, allowing exchange on current practices in the presence of an external supervisor. Explore the opening of decentralised specialist centres where OST patients would initially be managed and stabilised before being followed up by GPs. Attract and retain multilingual staff in OST clinics through adequate salary schemes.

Expand coverage of HIV and HCV testing and linkage to ART treatment

- Achieve earlier diagnosis of HIV by lowering the threshold for HIV and HCV testing through different steps. First, intensify and decentralise HIV and HCV testing, and expand the use of rapid HIV tests in mobile services (*DIMPS and XChange/MOPUD*) and in fixed sites such as JDH and Kontakt 28. Second, adapt frameworks to allow testing by a wider range of actors. Third, shorten the pre-test counselling that currently includes a 2-page questionnaire. Test policies to systematically offer testing to all higher risk patients (for example, all persons starting OST, at yearly health check-ups for all on OST, all HCV-positive).
- Consider doing an “Aristotle”-like networks study [15] that would incentivize HIV and HCV testing and linkage to care and could identify additional cases, while preventing others.
- Improve linkage to HIV treatment and adherence by providing ART at locations where HIV positive drug users spend their time. Provide ART with attention to other needs (OST, counselling, psychosocial support). Trace HIV patients that are lost to follow-up. Strengthen arrangements to ensure that ART is accessible and available for all that need it.
- Improve HIV/HCV education to a range of service providers to increase understanding about the need to test, the benefits of early treatment for their client, and in the role of treatment as prevention. This includes providers of social services as well as medical services. Provide multidisciplinary addictology training for medical and social staff not familiar with these topics.
- Formalise mechanisms to cover the costs of ART provision for those who do not qualify for social insurance, including in migrant populations, recognising the public health imperative to reduce the community viral load to prevent onward transmission.

Mitigate the risks arising from homelessness

- Support the expansion of programmes such as ‘Housing First’ as an evidence-based way to tackle homelessness and exclusion, thus supporting the stabilisation of this population and addressing a critical social determinant for infection and addiction risk.

Address needs of particular groups

- Consolidate activities to reach women PWID who do not access other services (*Xchange/MOPUD, DCR*) – adapt the offer of services to meet women's needs. Further support prevention of sexual transmission of HIV among women and men using drugs, including assessment regarding the suitability of PrEP for this high-risk population.
- Considering the growing proportion in new HIV infections via heterosexual contacts in recent years, increased attention should be given to sexual HIV transmission in the general population and prevention, through the promotion of condoms and consideration of PrEP, should be scaled up.
- Strengthen adequate early intervention services for young drug users (including non-OST options), such as various offers for youngsters provided by IMPULS – Solidarité-Jeunes.
- Provide translation in harm reduction and treatment services based on needs assessment or language groups that are not effectively reached by services.
- Involve the affected drug using population by consulting them through qualitative studies or informal feedback in the planning of services. Develop and support a peer network.

Address data gaps

- Conduct an epidemiological study (case control, RDS "Aristotle" or "DRUCK"-like networks study [15, 16]) in order to identify risk factors for transmission of infectious diseases among current and former PWID and drug users (cocaine, sexual transmission) and further target interventions. One specific objective of the study could be to differentiate sexual transmission from transmission via injection among PWID and to assess the role of cocaine use on both modes of transmission. Furthermore, it could serve as an opportunity to collect qualitative information from users of health and social services and to continue case-finding. Consider requesting the support of an EPIET fellow to contribute to this work.

Annex 1. Programme of the mission

Monday 19st March

Time	Event	Participants
08:30	Arrival of all participants	
09:00	Welcome Speech	Mrs. Lydia Mutsch, Minister of Health
09:15	Terms of reference and background	ECDC and EMCDDA team
09:20	Tour de table: presentations of the participants (LU key actors involved in drug services and HIV care)	All participants
09:30	Drug use patterns, correlates and national programmatic response to as regards demand and harm reduction	Dr. Alain Origer, National Drug Coordinator
10:00	Update of HIV and Hepatitis epidemiology	Dr. Carole Devaux, Deputy Head Infectious Diseases Research Unit, Luxembourg Institute of Health, President of the national AIDS, Hepatitis and STI surveillance committee (NAHSSC)
10:30	Presentation of the drug consumption room ABRIGADO	M. Patrick Klein, Director in charge
11:00	Interview with the members of the NAHSSC	Committee members
12:30	Lunch	
14:00	Visit of the drug consumption room ABRIGADO Interviews with the staff of the drug consumption room ABRIGADO	Staff members of the drug consumption room ABRIGADO
16:30	Visit of the HIV Berodung of the Luxembourg Red Cross / Interviews with the staff of the HIV Berodung	Staff members of the HIV Berodung / DIMPS
18:00	Closure of the first day of the country visit	

19:30	Dinner

Tuesday 20th March

08:30	Visit and Interviews Jugend- an Drogenhëllef (JDH) and Kontakt 28 Interviews with the staff of DIMPS/MOPUD Exchange	Staff members of JDH,Kontakt 28, DIMPS, MOPUD/Exchange
12:00	Lunch	
14:00	Visit of the Prison of Luxembourg (medical department, psychiatric service and Programme TOX), Schrassig	Staff members
16:00	Interviews / Round table Centre Hospitalier de Luxembourg Addictology Hôpitaux Robert Schuman – Zitha	Medical staff
	Interviews homeless people Foyer Ulysse Luxembourg Abrisud Esch-Alzette	Staff members
17 :00	Interview Suchtverband Luxembourg	M. Jean-Nico Pierre
	Interview National Drug Coordinator	Dr Alain Origer
18 :00	Closure of the interviews	

Evening	Visit of Dropin (Sexworkers)	Staff members of the project

Wednesday 21st March

08:30	Departure to the therapeutical center of Manternach	
09:00	Visit of the therapeutical center of Manternach Interviews with staff members of the therapeutical center of Manternach	Staff members of the therapeutical center of Manternach
12:00	Lunch	
13:30	Interviews Police City of Luxembourg	Responsible persons of the police and the City of Luxembourg
15 :00	First conclusions of the visit	ECDC and EMCCDA team
17 :00	Closure of third day of the country visit	

Thursday 22nd March

09:30	Feedback session: final reflections and discussions	Ministry of Health/ECDC/EMCDDA
11:00	Closure of the country visit	
11:30	Visit of DG SANTE premises	John Ryan, Director

Annex 2. List of participants

ECDC-EMCDDA mission team

Anastasia Pharris, ECDC
Thomas Seyler, EMCDDA
Meni Malliori, Athens Medical University
Catriona Milosevic, National Health Service Scotland

Participants from Luxembourg

Lydia Mutsch, Minister of Health
Anne Calteux, Ministry of Health
Patrick Hoffmann, Ministry of Health
Dr. Alain Origer, National Drug Coordinator, Ministry of Health
Carole Devaux, Luxembourg Institute of Health
Dr. Vic Arendt, Service National des Maladies infectieuses, Centre Hospitalier de Luxembourg
Laurence Mortier, HIV Berodung
Sandy Kubaj, HIV Berodung
Patrick Klein, Abrigado
Günter Biwersi, Jugend- an drogenhëllef (JDH)
Peggy Ruwet, Jugend- an drogenhëllef (JDH)
Jean-Nico Pierre, Jugend- an drogenhëllef (JDH)/ Suchtverband Luxembourg
Martina Kap, Kontakt 28, Jugend- an drogenhëllef (JDH)
Dr. Jean-Marc Cloos, Medical Director of Psychiatry, Hopitaux Robert Schuman
Jean-Luc Roncari, Administration des douanes et accises
Ralph Kohn, Service de Police Judiciaire
Philippe Schrantz, Police Grand-ducale
Maureen Lanners, Abridsud, Ville d'Esch
Michel Ledoux, Centre de Prévention des Toxicomanies
Nadine Berndt, EMCDDA national focal point, Ministry of Health
Rita Cardoso, EMCDDA national focal point, Ministry of Health
Nicole Kögler, Centre Pénitentiaire de Luxembourg, Programme TOX
Hugo Leite, Centre Pénitentiaire de Luxembourg, Programme TOX
Marie-Laure Foulon, Centre Pénitentiaire de Luxembourg
Paul Bäumler, Centre Pénitentiaire de Luxembourg
Christof Mann, Direction des Affaires Sociales, Service Jeunesse et Intervention Sociale
Carmen Kronshagen, Dropin
Ute Heinz, Centre Thérapeutique Manternach and Alternativ Berodungsstell
Stéphanie Sorvillo, Service d'urgence Caritas Accueil et Solidarité
Jocelyne Roberty, Head nurse, Centre Pénitentiaire de Luxembourg
Dr. Martine Mergen, Centre Pénitentiaire de Luxembourg, Chambre des Députés
Dr. Ferdi Kasel, Centre Thérapeutique Manternach and Alternativ Berodungsstell
Stephan Gogolin, Centre Thérapeutique Manternach and Alternativ Berodungsstell
Christelle Toscon, Centre Thérapeutique Manternach and Alternativ Berodungsstell
Dr. Esther Weber, Jugend- an Drogenhëllef (JDH)
Jean-Claude Schlim, NAHSSC

Annex 3. Bibliography

PowerPoint presentations given or made available during the visit:

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Devaux, C. Analysis of the AIDS committee regarding Abrigado (August 2017)

Devaux, C. Epidemiology of HIV and HCV infections in Luxembourg.

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Klein, P. Reduction of risks, prevention of harm: Abrigado low threshold centre for drug addicts as part of a national strategy.

Origer, A. Drug use patterns, correlates and national programmatic response to as regards demand and harm reduction

Opioid Substitution Programme, Penitentiary Psychiatric Medical Department

Programme Tox en milieu pénitentiare

THE DIMPS: A mobile unit to offer counseling and rapid HIV and HCV testing in vulnerable and more at risk population in Luxembourg country

Other background documents

2017 National report on the state of the drugs phenomenon "Grand Duchy of Luxembourg": new developments, trends and in-depth information on selected issues.

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