LUXEMBOURG Combination disease prevention in prisons: a comprehensive programme in Luxembourg

Strategic Direction 2 | Strategic Direction 3 | Strategic Direction 4 | Strategic Direction 5

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Background

In Luxembourg, 4346 people, approximately 1% of the population, tested positive for anti-HCV during 1990–2013 *(99)*. It is estimated that 77% of them present active infection and most cases of hepatitis C are males with a median age of 37 years.

Injecting drugs is the predominant route for HCV transmission among the general population in Luxembourg. It is also the most important risk factor for the infection in people in prisons *(100)*. In 2015, it was estimated that approximately 1500 PWID resided in Luxembourg *(101)* and that 75% of them would test positive for anti-HCV *(102)*. Therefore, incarceration is an important opportunity to offer prevention, diagnosis and treatment of hepatitis C, among other health services, to underserved population groups such as PWID.

There are 689 people in prison in Luxembourg – most of them are not citizens of the country. The prison population is divided into two state prisons: a closed setting with 615 people (including 320 pre-trial detainees) and a semi-open prison with 74 people. The turnover of the prison population in Luxembourg is high – at an approximate rate of 1000 people per year. About one third of the prison population (228/689) has been incarcerated for drug-related offences and/or has suffered from substance use disorders.

In 2003, the HCV-UD programme (l'hépatite C au sein des usagers de drogues au Luxembourg) was implemented in the two state prisons – providing systematic case-finding of infectious diseases, linkage to care, treatment, immunization and a combination of prevention measures, including NSPs, OST and educational training. This comprehensive approach aimed to prevent communicable diseases in prisons and improve the overall health of PWID with viral hepatitis.

Description of the good practice

Test and treat

Due to the high prevalence of viral hepatitis, HIV and other complications of an infectious nature related to drug use in prisons, a standardized approach was implemented in 2009 to offer diagnosis, linkage to care, treatment, immunization and prevention of infectious diseases in prisons under a specialized medical department (COMATEP) *(103)*.

Two nurses oversee the COMATEP programme in the prison. The work is done in collaboration with the National Service of Infectious Diseases and ensures that all inmates can receive early treatment and care for infectious diseases.

All inmates are systematically offered screening for HIV, hepatitis A virus (HAV), HBV, HCV, TB and syphilis during a consultation with a doctor within 24 hours of arrival in prison. The acceptance rate of the screening protocol is very high (>95%). In the case of a positive test result, a consultation with an infectious diseases specialist is immediately organized in the prison clinic for the initiation of appropriate antiviral therapy, follow-up on viral load, immunization for HAV and HBV, and/or ultrasound tests.

Liver elastography tests (Fibroscan) are performed by one of the nurses. Antiviral treatment for hepatitis C is provided within the prison clinic when the duration of the treatment with DAAs fits with the period of incarceration.

Nurses also organize counselling and make appointments with infectious disease specialists outside the prison and with NGOs upon the discharge of

inmates. They are also responsible for the transcription of medical and blood analysis reports. Educational sessions on infectious diseases are also organized by the nurses for prison staff.

Clinical history and treatment information have been systematically collected since 2003, and in 2017 an epidemiological survey on risk behaviours and patterns of drug use (HCV-UD study) was implemented in prisons *(104)*. All participants provided written informed consent.

Harm reduction

Different harm reduction services have been implemented in prisons since 2005, including OST, NSPs, condom distribution and, more recently, a "safe tattoo" project. The OST is delivered by the psychiatric service and requires full compliance from the patient and a formal contract. Methadone, buprenorphine and naloxone are available only to registered patients.

OST is given as a directly observed therapy (DOT). Since 2014, 15–18% of inmates have received OST – roughly 63 to 80 patients per day, at an average duration of 140–151 days.

The NSP programme was established in 2005. Information is provided at entry by the medical doctor. A contract is signed between the patient and the medical service, with a one to one exchange rule, and counselling is provided by a nurse. By 2018, 427 NSP kits had been distributed and 12 428 syringes had been exchanged by the medical service. Regarding unprotected sex, condoms are readily available in different locations in the prisons. Their provision is generally well accepted but no figures are available on their actual use.

Safe tattoo

Launched in March 2017, this project was initiated by a trainee nurse and Erasmus+. Half the prison population in Luxembourg has tattoos and a third of these tattoos were performed during incarceration – increasing the risk of infectious diseases and complications. Therefore, a safe tattooing room was installed in the prison. Inmates are trained in tattooing, hygiene and infectious diseases. Under the supervision of a nurse, 528 hours of tattooing were performed during 196 appointments up to June 2018. Training was received by 14 tattooists and 120 people got at least one tattoo.

Evidence of impact

Since 2013, 4218 communicable disease tests have been performed, with 737 positive results for anti-HCV (17.47%). HIV infection was found in 103 cases (2.44%) and syphilis in 101 (2.39%). Approximately one third of inmates became aware of their seropositive status for all infections during the screening performed upon arrival at the prison. Due to reincarceration, it is possible that patients were tested more than once and that duplicates could exist.

During 2013–2018, out of 2186 patients, there were 160 consultations with the infectious disease specialist; 1100 liver elastography tests and 769 ultrasounds were performed. Since 2012, 3828 vaccinations against hepatitis A/B have been provided.

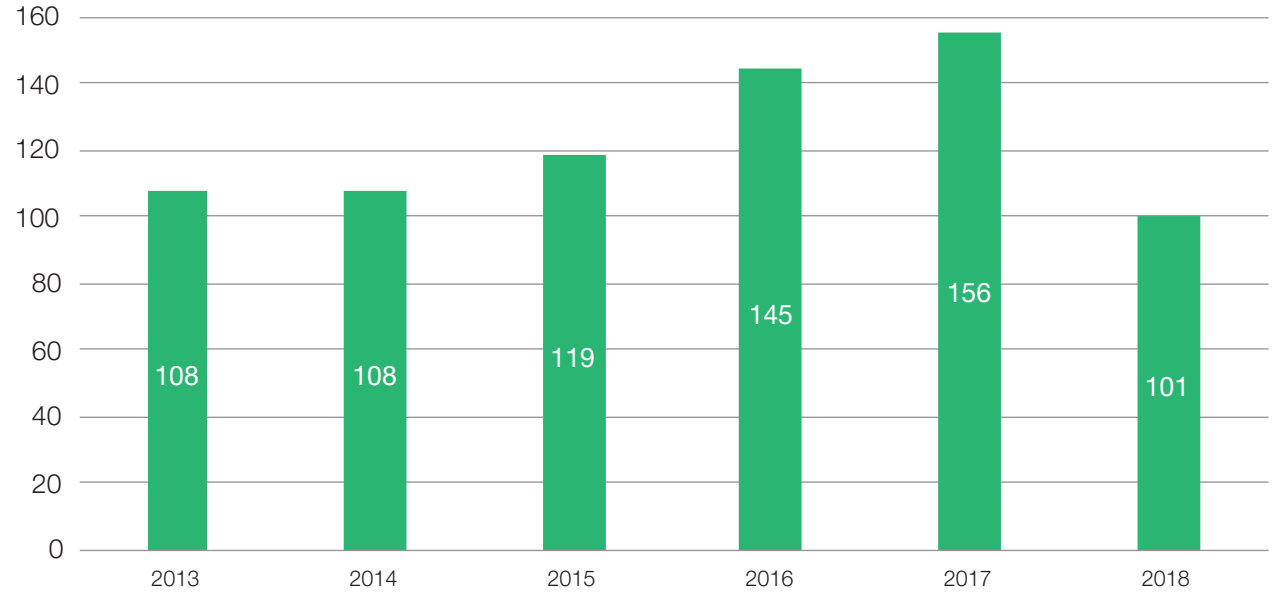
The number of inmates testing anti-HCV positive upon arrival has been stable during the last few years, between 101 and 156 people each year (ranging from 13.3% in 2014 to 14.5% in 2018) while the high turnover of the prison population was sustained (Fig. 19).

We conducted a retrospective study of hepatitis C treatment in prison from 2003 to 2015, when the combination of pegylated interferon and ribavirin was still in use *(105)*. Among 665 inmates tested positive for anti-HCV, 209 received hepatitis C treatment, and 204 received follow-up without antiviral treatment (due to contraindications to pegylated interferon or prioritization of treatment). Although 31.9% of patients (95% confidence interval (CI): 25.85–38.54) were LTFU, the SVR was registered in 136 patients who were followed for a median of 4.4 years (interquartile range = 1.54–6.54) or a total of 429 years at risk. During this period, 32 patients were assumed to be reinfected outside of prison, so the incidence of reinfection was 7.4/100 person-years at risk (95% CI: 5.3–10.3).

Reinfection was confirmed by genotype change in 13 cases (40.6%). The overall reinfection rate was 23.5% (95% CI: 19.50–28.22). The linkage to OST after discharge from prison has been intensified and monitoring of reinfection inside and outside prison after DAA therapy was implemented in 2017.

Since 2012, DAA treatment has been provided in the prison clinic as DOT. Treatment has been offered to 90 patients and 83 finished treatment (92%) during incarceration. Among these patients, 80 achieved an undetectable viral load at EOT (96%),

Fig. 19. Number of positive anti-HCV test results in the prison population (2013–2018)

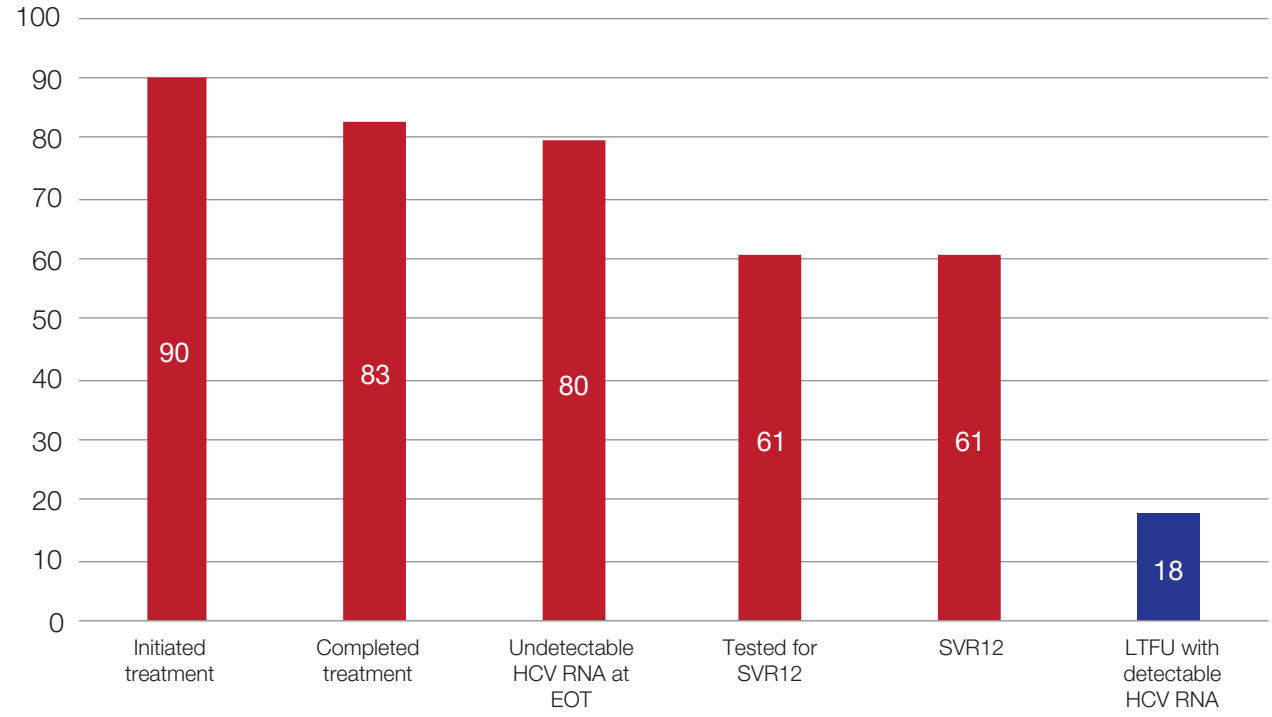


Source: Authors.

61 were submitted to HCV RNA test 12 weeks after EOT, and 61 achieved SVR12 (Fig. 20). In the LTFU group, 18 patients presented detectable HCV RNA, a potential consequence of treatment discontinuation or reinfection. In 2019, only two reinfections were registered, which took place outside the prison. The majority of cured patients were LTFU in 2019.

In conclusion, there is an effective opportunity to test and treat underserved population groups, including PWID, in prisons. Inmates have very limited access to treatment, care and education for prevention and control of infectious diseases and drug use. Combination prevention programmes should include harm reduction services with OST, NSPs, condom distribution, immunization and education.

Fig. 20. Cascade of care for hepatitis C with treatment with DAAs in two state prisons, Luxembourg (January 2012 to June 2019)



Source: Authors.

Following the introduction of DAA treatment in Luxembourg, the screening and treatment of hepatitis C inside and outside of prisons have contributed to a decrease in the overall prevalence of HCV infection among PWID in the country. Since 2015, we have established an interventional programme, HCV-UD, to conduct the screening and the linkage to care of PWID in five harm reduction centres (OST/NSP programmes and one supervised drug consumption facility) in Luxembourg – with excellent results in the enrolment of participants and decrease in prevalence of HCV infection.

Sustainability

The programme, including the safe tattoo project, is funded by the Ministry of Justice as part of the general health care for people in prisons. Various ideas on how to improve the existing system include simplification of the NSP programme in prison, attention to women and their access to harm reduction services, and safe piercing and naloxone projects.

There is a diamorphine project running outside prisons that, once evaluated, could also be introduced in prisons. Any projects inside prisons in Luxembourg should be "living" projects – continuously evaluated and improved when necessary. Prevention of infectious diseases for inmates should be strengthened through peer-support programmes and NGOs, as suitable for the interventions. Social reintegration and housing upon discharge from incarceration are also essential, to sustain the good practice initiated inside prisons.

MALTA A clinical strategy for the elimination of hepatitis C in Malta

Strategic Direction 1 | Strategic Direction 2 | Strategic Direction 5

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Background

A retrospective analysis of the demographics of patients who had tested positive for anti-HCV at the Mater Dei Hospital, the main hospital in Malta, was carried out in 2013 *(106)*. This study estimated that 1000 people are living with hepatitis C in Malta.

Intravenous drug use is the most common mode of transmission of hepatitis C infection in the country.

A national strategy to eliminate HCV infections in Malta was launched in 2018 *(107)*. The aim of the strategy is to treat 200 patients per year over a five-year period. By mid-2019, seven consultants in infectious diseases and gastroenterology had treated the first 200 patients with hepatitis C.

Description of the good practice

A single-tablet combination of sofosbuvir/ledipasvir is used to treat patients with a genotype 1 or 4 HCV infection; while sofosbuvir/velpatasvir is used in patients with a genotype 2 or 3 HCV infection. The duration of DAA treatment is 12 weeks. The endpoint of treatment is defined as undetectable HCV RNA in serum at 24 weeks after the end of treatment (SVR24) – deemed to be consistent with a cure of the hepatitis C infection.

It was decided to prioritize patients with hepatitis C at high risk of complications and/or accelerated disease progression. Patients with hepatitis C and any of the following selection criteria were prioritized for DAA treatment:

- decompensating liver cirrhosis secondary to HCV infection;
- liver cirrhosis secondary to HCV infection;
- rapidly progressive hepatic fibrosis secondary to HCV infection;
- liver transplantation;
- type 2 or 3 essential mixed cryoglobulinaemia with end organ damage secondary to HCV infection;
- significant renal disease secondary to HCV infection;
- HCV infection in the context of immunosuppression.