



ECDC AND EMCDDA **GUIDANCE**

Prevention and control of infectious diseases among people who inject drugs

Guidance in brief

Scope and purpose of this guidance

This evidence-based guidance is designed to inform the development, monitoring and evaluation of national strategies and programmes in countries in Europe in order to reduce and prevent infections among people who inject drugs.

The guidance identifies seven key interventions which, in synergistic combination, have been shown by evidence and experience to be effective in the prevention and control of infectious diseases that affect people who inject drugs (Box 1).

The guidance is in coherence with existing EU-wide policies in the field of drugs and infectious diseases. The guidance does not discuss drug control policies but restricts itself to address the immediate individual and societal harm caused by infections among people who inject drugs. It aims to give a comprehensive overview of the best current knowledge in the field, expanding previous work to include combinations of key interventions. People who inject drugs addressed in this guidance include adult opioid and stimulant injectors.

The guidance is mainly designed to address service provision in community settings, but also has relevance for detention and other closed settings. The guidance relies on a foundation of 'core values' guiding a set of 'principles of prevention and service provision'.

This Guidance in Brief is accompanied by a comprehensive guidance document that examines the rationale of all key interventions, and two technical reports that provide the evidence base for this guidance.

Box 1. Seven recommended key interventions

Injection equipment: Provision of, and legal access to, clean drug injection equipment, including sufficient supply of sterile needles and syringes free of charge, as part of a combined multi-component approach, implemented through harm-reduction, counselling and treatment programmes.

Vaccination: Hepatitis A and B, tetanus, influenza vaccines, and, in particular for HIV-positive individuals, pneumococcal vaccine.

Drug dependence treatment: Opioid substitution treatment and other effective forms of drug treatment.

Testing: Voluntary and confidential testing with informed consent for HIV, hepatitis C (hepatitis B for unvaccinated) and other infections including TB should be routinely offered and linked to referral to treatment.

Infectious disease treatment: Antiviral treatment based on clinical indications for those who are HIV-, hepatitis B- or C-infected. Anti-tuberculosis treatment for active TB cases. TB prophylactic therapy should be considered for latent TB cases. Treatment for other infectious diseases should be offered as clinically indicated.

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Box 1, continued: Key interventions

Health promotion: Health promotion focused on safer injecting behaviour; sexual health including condom use; and disease prevention, testing and treatment.

Targeted delivery of services: Services should be combined and organised and delivered according to user needs and local conditions; this includes the provision of services through outreach and fixed sites offering drug treatment, harm reduction, counselling and testing, and referrals to general primary health and specialist medical services.

Combine these key interventions to enhance prevention synergy and effectiveness!

Box 2. Infections for which people who inject drugs may be at increased risk:

- HIV infection;
- hepatitis A;
- hepatitis B (HBV);
- hepatitis C (HCV);
- hepatitis D;
- tuberculosis (TB);
- skin and soft tissue infections caused by *Staphylococcus aureus* (including methicillin-resistant *Staphylococcus aureus*, MRSA) and streptococcal infections (e.g. endocarditis, necrotising fasciitis);
- severe systemic sepsis (e.g. infections with *Clostridium novyi*, *Bacillus anthracis*);
- STIs other than HIV infection or hepatitis (e.g. chlamydia infection, syphilis and gonorrhoea);
- respiratory infections such as pneumonia, diphtheria and influenza;
- wound botulism;
- tetanus;
- human T-cell lymphotropic virus (HTLV) infections.

Why is this important?

Since the emergence of the HIV epidemic among people who inject drugs in the mid 1980s, many European countries have achieved substantial progress in implementing evidence-based measures to prevent and control infectious diseases among this group.

Still, within Europe, injecting drug use remains a major factor of vulnerability for acquiring blood-borne (e.g. HIV, viral hepatitis) and other infectious diseases, and infections associated with injection drug use remain common (Box 2). Estimates of the number of people who inject drugs suggest that there are significant populations at risk in all countries.

Patterns of injection drug use vary across Europe, with opioid injection prevalent in all countries and a significant proportion of stimulant (mainly amphetamine) injection in the northern and eastern parts of Europe.

The main motivation for the prevention of infections among people who inject drugs is that prevention is feasible and effective, if properly implemented. Addiction to illicit drugs is a medical condition which, on public health and ethical grounds, demands the implementation of effective measures to prevent disease as well as to minimise the harms of the addiction.

Evidence and experience have shown that adopting a pragmatic public health-based prevention approach can reduce the spread of blood-borne infections among people who inject drugs. Prevention of infections among people who inject drugs also reduces the likelihood of further spread of infections to people in the general population who do not inject drugs. Direct morbidity due to severe forms of chronic infections results in high costs of treatment and care among those infected. Also, the loss of quality of life and economic productivity due to severe illness will further increase societal cost.

Target readership

This guidance aims to support decision makers who work in the fields of infectious diseases, general public health, addiction, mental health, social services and drug control in planning adequate and evidence-based public health responses to injecting drug use at national and regional levels.

The guidance may also be of interest to managers of local services, as its aim is to comprehensively list, with available evidence, all components which should be part of a systematic approach to the prevention and control of key infectious diseases among people who inject drugs.

Guidance development

To produce the guidance, scientific evidence was systematically assessed, using a standardised 'review of reviews' method (see full guidance document and technical reports). The most robust scientific evidence available was combined with expert opinion and best practices of prevention within the EU/EEA to identify key interventions for the prevention of infections among people who inject drugs.

Seven recommended key interventions

1. Injection equipment

Recommended intervention

Provision of, and legal access to, clean drug injection equipment, including sufficient supply of sterile needles and syringes free of charge, as part of a combined multi-component approach, implemented through harm-reduction, counselling and treatment programmes.

The main risk factor for acquiring blood-borne infections is the sharing of needles, syringes, and other drug preparation and injection equipment. Even among drug users who report never sharing needles and syringes, it is common to share drug preparation equipment such as drug mixing containers, water for the dissolution of drugs, or drug filters, which can result in the transmission of viral hepatitis (B, C). There is also evidence that people who inject drugs suffer from a large burden of skin, vein and blood infections due to non-sterile injection practices. There are reports of increased injection of prescription drugs crushed from pill into powder form, which increases the risk for pulmonary emboli and endocarditis. Some homemade acidifiers, used to make certain drugs soluble, have been shown to harbour fungus which, when injected, can cause the heart infection endocarditis or an infection of the eyes which can lead to blindness.

Considered judgement: Based on existing evidence, expert opinion and standard healthcare clinical practices of injecting hygiene, a key measure to minimise the spread of HIV and viral hepatitis among people who continue to inject drugs is to provide sterile needle and syringes and other clean injecting equipment (spoons/cookers, filters, water for injection, acidifiers, and dry and alcohol swabs) in sufficient quantities to enable the use of one of each item per injection, free-of-charge, via a mode of distribution that is easily accessible and acceptable to users.

Practice considerations: The return of equipment should be encouraged but not be required; to avoid needle stick injuries provide puncture-proof containers; consider preferences for needle and syringe size and type, as well as drug preparation equipment; provide injection hygiene advice and wound care; coordinate services with law-enforcement.

2. Vaccination

Recommended intervention

Vaccination with hepatitis B and A, tetanus, and influenza vaccines, and, in particular for HIV-infected individuals, the pneumococcal vaccine.

In most settings, people who inject drugs are at increased risk of acquiring hepatitis B, hepatitis A and the bacterial infection tetanus as compared to the general population. Persons infected with hepatitis C (for which no vaccine currently exists) and who are co-infected with hepatitis A or B suffer from accelerated progression of hepatitis C disease and much higher morbidity. Due to lifestyle, age, or HIV-infection, some people who inject drugs might be at greater risk for influenza or pneumonia. However, effective vaccines are available which can prevent each of these infections by providing good clinical protection.

Considered judgement: Based on existing evidence vaccination is among the most effective and cost-effective infectious disease prevention interventions available.

Practice considerations: Use combination vaccines if possible; an accelerated dosing schedule may be advisable in hard-to-reach groups; when unsure of previous vaccination status, err on the side of providing the vaccine; there is limited evidence for the usefulness of BCG vaccination in adults; there are contraindications for the use of live vaccines in immune-deficient individuals.

3. Drug dependence treatment

Recommended intervention

Opioid substitution treatment and other forms of effective drug dependence treatment.

During the past two decades, a massive scaling-up of drug dependence treatment has taken place in many parts of Europe. In many countries, treatment now forms the centrepiece among a range of interventions that aim to reduce injecting risk behaviour and prevent the transmission of blood-borne viruses. Opioid substitution treatment is one of the interventions with the strongest proven effect on reducing HIV incidence among opioid injectors.

Considered judgment: Opioid substitution treatment (OST) and other forms of effective drug dependence treatment should be available and easily accessible, based on expert opinion and – in the case of OST – consistent evidence from multiple robust studies and reviews. While evidence for the effectiveness of psychosocial treatments is lacking, it is recommended based on expert opinion.

Practice considerations: Make available a variety of drug dependence treatment options matched to the needs of different target groups, including stimulant users, with opioid substitution treatment forming the backbone of treatment systems for opioid dependence. Ensure easy access and high quality of drug treatment, also for hard-to-reach groups. Enhance impact on infections by combining interventions, in particular needle and syringe programmes and OST. Guarantee continuity of treatment, including imprisoned drug users. Drug treatment, in particular OST, may also help to increase the adherence to treatment for HIV and/or hepatitis C.

4. Testing

Recommended intervention

Voluntary and confidential testing with informed consent for HIV, HCV (HBV for unvaccinated) and other infections including TB should be routinely offered and linked to referral to treatment.

Considered judgement: Expert opinion and evidence are in favour of voluntary infectious disease diagnostic testing for its potential risk reduction and as a pre-requisite for infectious disease treatment provision. Due to the high risk of infection associated with injecting drug use and the low costs of testing, it is very likely cost-effective in all European settings to test people who inject drugs for HIV, hepatitis B, hepatitis C and other infections including TB*.

Practice considerations: Routinely offer voluntary and confidential testing; pre-test information and post-test counselling of positives should be encouraged; referral pathways should be in place for treatment and confirmation testing; consider both active and latent forms of TB; consider providing tests for sexually transmitted infections as well as screening for acute bacterial skin and soft tissue infections.

5. Infectious disease treatment

Recommended intervention

Antiviral treatment based on clinical indications for those who are HIV, HBV or HCV infected. Anti-tuberculosis treatment for active TB cases. TB prophylactic therapy should be considered for latent TB cases. Treatment for other infectious diseases should be offered as clinically indicated.

Considered judgment: Recent studies have demonstrated clear clinical benefit of antiviral treatment for HIV, HBV and HCV among people who inject drugs. Active drug use should not be an exclusion criterion for disease treatment, as long as other clinical contraindications do not exist, and especially if the drug use can be controlled with opioid substitution treatment and side effects of antiviral treatment can be handled. There is strong evidence for the individual and population-level benefits of TB treatment.

Practice considerations: Strive for universal access to treatment, including access for active injectors; treatment outcomes are generally improved if provided in conjunction with OST; testing should be closely linked to treatment; side effects such as depression should and can be treated; screen for co-infections; infection control measures for TB treatment and contact tracing for TB cases should be in place; prophylactic treatment for HIV-positive individuals exposed to TB should be considered; consider drug interactions, directly observed therapy for TB, promoting adherence to treatment, sexually transmitted infection (STI) treatment.

6. Health promotion

Recommended intervention

Health promotion focused on safer injecting behaviour; sexual health including condom use; and disease prevention, testing and treatment.

Health promotion is the process of enabling people to increase control over, and to improve, their health. Health promotion includes not only giving information and support, but also risk-reduction counselling.

* For details see: European Monitoring Centre for Drugs and Drug Addiction (EMCDDA). Guidelines for testing HIV, viral hepatitis and other infections in injecting drug users. Lisbon: EMCDDA; 2010.

Considered judgment: Health promotion alone is not effective in reducing the risk of HIV among people who inject drugs. However, combined with other prevention measures such as needle and syringe provision and drug treatment, health promotion can be effective. Based on expert opinion, health promotion can provide support for the implementation and social marketing of the other six key interventions. Contents should be guided by user needs.

Practice considerations: Safer infection behaviour (one needle – one syringe – one time, never share needles/syringes or drug preparation equipment, injection hygiene, use filters, overdose prevention); discuss STIs and encourage condom use; discuss how blood-borne infections are transmitted, recognise symptoms and signs of infection, disease progression; provide social support and counselling; consider group sessions; written, visual and interactive tools.

7. Targeted delivery of services

Recommended intervention

Services should be combined and organised and delivered according to user needs and local conditions; this includes the provision of services through outreach and fixed site settings, offering drug treatment, harm reduction, counselling and testing, and referrals to general primary health and specialist medical services.

It is essential to carefully consider how services for people who use drugs are organised and delivered in order to maximise their acceptability to clients and, thereby, service access and uptake. The effectiveness of service programmes depends on their ability to attract, motivate, and retain clients. Therefore, the planning of the services should aim at creating as low a threshold as possible for people who inject drugs, so they can easily attend and use the services provided.

Considered judgment: Evidence and expert opinion support a targeted and combined delivery of services according to user needs and local conditions.

Practice considerations: Main types of service delivery can include fixed low-threshold service sites, general health services, and prison settings. Consider whether higher coverage of services could be achieved through the provision of injection equipment through pharmacies, secondary distribution of syringes, and the use of outreach and/or vending machines. Also, highly-targeted interventions such as providing supervised health facilities to ensure hygienic conditions of injecting may be considered. Successful services ensure: easy and comfortable access and entry, large service mix, discreet environment, protection from (police) harassment, and collaboration or agreement with law enforcement, provision of basic services (food, showers, clothing, internet access), convenient opening hours, adaptation to the local context, and peer involvement.

Achieve synergy – combine key interventions

Evidence suggests that the biggest reduction of HIV, HCV and injection risk behaviour can be achieved by providing both high coverage of needle and syringe programmes and opioid substitution treatment. Offering additional services, such as disease treatment and vaccination in combination with needle and syringe programmes and drug dependence treatment is likely to further prevent disease transmission among people who inject drugs.

Coordinate across sectors

National and intersectoral coordination are prerequisites to the effective delivery of the key interventions. Drug use remains a criminal offence in the majority of European countries. Therefore, not only issues of health should be considered when prevention programmes are designed, but issues of law enforcement also have to be taken into account. Actors in infectious disease prevention, addiction medicine, mental health, social services, law enforcement, judiciary, and narcotics control agencies as well as prison services must be actively engaged in this process. Furthermore, local governments, citizen groups, associations for people who use drugs, as well as other non-governmental or civil society organisations should be included in coordination mechanisms and meetings.

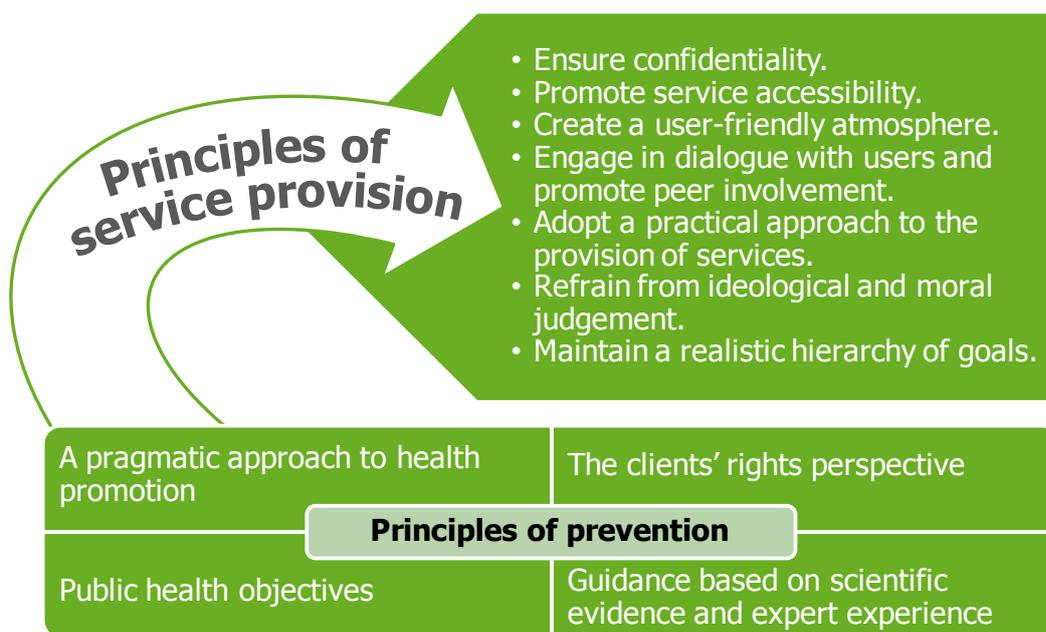
Based on the most robust evidence available, expert opinion, and best practice used within the EU/EEA, the following key intervention components are identified and should be applied; if possible, in combination.

Core values of prevention of infections among people who inject drugs

The core values are based on fundamental principles of public health, service provision, individual and public health ethics, combined with substantial experience in service implementation.

The core values were developed with a public health and human rights perspective and originate from work based in the United Kingdom and the Netherlands in the 1980s (the 'Mersey Harm Reduction Model', a population-based service model)*. They aim at promoting health among people who inject drugs and at reducing the negative consequences of drug use. In this guidance, the core values are presented in two sections: the 'principles of prevention', which guide the 'principles of service provision'.

Figure: Core values of prevention of infections among people who inject drugs



This guidance is based on four simple principles: a pragmatic approach to health promotion, a clients' rights perspective based on basic ethical principles, the resolve to achieve public health objectives, and scientific evidence combined with expert experience.

Principles of prevention

The guidance adopts a **pragmatic health promotion approach**, addressing, as a primary objective, the prevention of the spread of infections among people who inject drugs. Therefore, the approach makes no *a priori* assumptions on conditions related to the implementation of prevention measures, but argues for their independent public and individual health value. To be free of drugs should not be a condition for receiving help to prevent infections. Instead of a rigid approach in which the goal of preventing drug use overshadows other objectives, the pragmatic approach recognises that any health benefit has a value of its own and is worth pursuing, even when the underlying drug use cannot be immediately addressed. All users may not be able to become drug-free, but risky injection practices and disease transmission can be prevented

The client's right perspective in the context of this guidance means that the measures taken for prevention and intervention strictly adhere to the principle of using the client perspective. Measures should be developed based on the individual client's needs. Also, all measures are provided to the client on a voluntary basis and no coercive or mandatory components should be used. Furthermore, the access to prevention is seen as a personal right. Lastly, preventive measures should always benefit the individual and not only society.

* O'Hare P. Merseyside, the first harm reduction conferences, and the early history of harm reduction. *Int J Drug Policy*. 2007 Mar;18(2):141-4.

Buning EC, Coutinho RA, van Brussel GH, van Santen GW, van Zadelhoff AW. Preventing AIDS in drug addicts in Amsterdam. *Lancet*. 1986 Jun 21;1(8495):1435.

The public health objective in the context of this guidance means that although the benefits of the intervention methods should consider individual needs, the comprehensive approach should always strive to achieve societal as well as individual benefits. Intervention methods should include prevention of further transmission, reduction of total healthcare and social costs, improved productivity and reduced mortality and morbidity among the target group, including the prevention of drug use, whenever compatible with the primary objectives.

Guidance based on scientific evidence and expert experience means that the guidance is based on scientific evidence where robust studies for the discussed measures exist. For some of the measures, robust studies demonstrating their efficacy have not been performed, either due to the complexity of the design requirements or due to ethical problems in conducting the studies. Some measures in the guidance are recommended because their application is logical and considered to benefit the individual without incurring any undue risk.

Tailor programmes to national and local situations

The epidemiology of both drug use and infections among drug users can be subject to rapid changes. The dynamics of these changes are complex, multi-factorial and dependent on social and economic situations, drug markets, prevention activities and other societal factors.

To ensure that prevention resources are well spent, infectious disease prevention efforts should be targeted to populations of people who inject drugs and where the risk of transmissions of infections is greatest. Investment in adequate surveillance systems for both drug use and infectious disease is necessary and likely cost-effective.

Monitoring problem drug use and responses

Surveillance of problem and injecting drug use is a necessary component of any national effort to prevent harm caused by drugs. The EMCDDA has issued a set of key indicator protocols and toolkits for the epidemiological monitoring of problem and injecting drug use. The EMCDDA also collects harmonised information about health and social responses to drug use, including harm reduction and infectious disease prevention measures, through a set of standardised monitoring tools (data tables and structured questionnaires).

Surveillance of infections

The epidemiological picture of infections among drug users may change rapidly, especially if prevention is weak. A good infectious disease surveillance system, built on the principle of 'surveillance for action', i.e. with an active link between prevention and surveillance structures, is a necessity if infection risks among people who inject drugs are to be controlled.

Case-based surveillance of all newly reported cases of blood-borne infections, including those that can be transmitted through the sharing of injection equipment, is being coordinated at European level by ECDC. The EMCDDA standard indicator protocols also cover infectious disease prevalence in injecting drug users, and promote the use of standardised methodologies such as bio-behavioural surveys and routine diagnostic testing.

Case-based surveillance is useful for monitoring disease trends, and may be useful in early identification of disease outbreaks if national coverage of the system is good and reporting delay is minimal. The success of outbreak-response interventions are highly dependent on the ability to rapidly identify new outbreaks and having the means to respond appropriately.

Other types of surveillance systems, such as various types of surveys and bio-behavioural studies, have their own advantages. Surveys can provide estimates of prevalence among the target population, which is usually not achievable through case-based surveillance. Bio-behavioural surveys in injecting drug users, such as promoted by the EMCDDA and ECDC, can provide information on both drug use patterns and infectious diseases.

Countries should make decisions on the parameters of their own data collection systems for surveillance based on their own needs. Data collection systems should produce sufficient information to inform the development and monitoring of prevention strategies based on a health needs assessments of the local problem, while being efficient in terms of resources and costs.

Setting targets for intervention coverage

At a population level, coverage is commonly defined as the proportion of the population in need of an intervention that actually received that intervention. There is growing evidence that higher levels of coverage of needle and syringe programmes and opioid substitution treatment are more effective than lower levels of coverage per drug injector.

Unmet demand for needle and syringe exchange services or waiting times for drug treatment indicate an unmet demand for services and are a sign that service coverage needs to be increased.

Links

| Title | Organisation (year) | Link |
|--|---------------------------|---|
| Best practice portal: evidence base, standards and guidelines, and evaluated practice Key epidemiological indicators | EMCDDA | http://www.emcdda.europa.eu/best-practice http://www.emcdda.europa.eu/themes/key-indicators |
| HIV testing: increasing uptake and effectiveness in the European Union | ECDC (2010) | http://ecdc.europa.eu/en/publications/Publications/101129_GUI_HIV_testing.pdf |
| Guidelines for testing HIV, viral hepatitis and other infections in injecting drug users | EMCDDA (2010) | http://www.emcdda.europa.eu/publications/manuals/testing-guidelines |
| Technical guide for countries to set targets for universal access to HIV prevention, treatment and care for injecting drug users | WHO, UNODC, UNAIDS (2009) | http://www.unaids.org/en/media/unaids/contentassets/dataimport/pub/manual/2010/idu_target_setting_guide_en.pdf |

This Guidance in Brief is accompanied by a comprehensive and fully referenced guidance document which examines the rationale behind all key interventions, and a two-part evidence review published in the ECDC Technical Report series (available online).



The European Centre for Disease Prevention and Control (ECDC) is an EU agency tasked with identifying, assessing and communicating threats to human health posed by infectious diseases. It supports the work of public health authorities in the EU and EEA/EFTA Member States.



European Monitoring Centre for Drugs and Drug Addiction

The European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) provides the EU and its Member States with a factual overview of European drug problems and a solid evidence base to support the drugs debate.