Title

Challenges and opportunities in managing infectious diseases in prison: evidence-based guidance from the European Union

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Abstract

People in prison have multiple complex health and social care needs. These are likely to be the result of a combination of overlapping, and sometimes interlinked, risk factors for infection, ill-health, and incarceration, such as problem drug use. Incarceration may represent a unique opportunity to make high-quality health care available to people in prison and to target socially deprived groups who are often medically underserved when living in the community. In recent years, international and European institutions have increasingly acknowledged the importance of treating prison health as an inseparable component of public health. However, a number of challenges hampers the successful implementation of such concept, including the need for evidence-based decision making, intersectoral partnerships and better monitoring systems. New initiatives are currently ongoing in the European Union that may contribute to bring about positive changes, such as the recent publication of the first evidence-based public health guidance on prevention and control of communicable diseases in prison settings.

A health equity approach

"Prisoners are the community. They come from the community, they return to it. Protection of prisoners is protection of our communities."(1)

People in prison have multiple complex health and social care needs, including a higher prevalence of communicable diseases than in the general population.(2) These are likely to be the result of a combination of overlapping, and sometimes interlinked, risk factors for infection, ill-health, and incarceration, such as problem drug use.(3–5)

Taking these challenges into consideration, incarceration may represent a unique opportunity to make high-quality health care available to people in prison(6) and to target socially deprived groups who are often medically underserved when living in the community.(7) In recent years, international and European institutions have increasingly acknowledged the importance of treating prison health as an inseparable component of public health(4,8,9). At the European Union (EU) level, growing importance is being attached to Member States ensuring common minimum standards in prisons and exchanging best practices(4,9). This is also a reflection of an increasing awareness of the principle of equivalence of care between community and prison (Box 1), which is an internationally agreed standard[8] enshrined in European and international prison rules(9,10)

A public health approach to health protection in prisons: focus on population, burden of disease, environment, and partnership

According to the latest data from 2016, about 590 000 people are held in prison on any given day in the 28 Member States of the EU. There are considerable differences between countries in the number of prisoners per 100 000 population(11), with rates varying from 51 in the Netherlands to over 200 in the Czech Republic, Estonia, Latvia, and Lithuania. The median age of the prison population ranges from 31 years in Denmark to 46 years in Latvia. The EU prison population has a complex sociodemographic composition, with 19% of prisoners not nationals of the country of detention, and is characterised by a high turnover, with a median detention of 8.8 months(11).
It is widely recognised that imprisonment and turnover of prison population play an important role in the mechanism of disease concentration and increased risk of transmission(3,12). Yet, evidence on the infectious disease burden in the prison population remains limited. According to recent systematic reviews, prevalence estimates of viral hepatitis in prison are available from just over a

third of EU countries, and reported a much higher proportion of infected individuals than among the general population, ranging from 0.3% to 25.2% for hepatitis B (HBV) and from 4.3% to 86.3% for hepatitis C (HCV)(13). Similarly, for human immunodeficiency virus (HIV), prevalence estimates were available for half of the EU countries, ranging from 0.2% to 15.8%(14). Currently, systematic EU-wide reporting on new diagnoses in prison settings is available only for active tuberculosis (TB). The most recently reported rate, in 2016, was 158.9 per 100 000 people in detention in the EU, with wide variations between countries(15). Overall, the relative risk of detecting active TB in prison is ten times higher than in a community setting(15,16). In addition, data from single EU country studies indicated a higher prevalence of latent TB infection among the prison population(15–17). Findings from a systematic review suggest that the risk of LTBI is also considerably higher in prisons than in the general population(16). Despite the likelihood of a sizeable disease burden from sexually transmitted infections (STIs), influenza, and other outbreak-prone diseases in prison settings, the authors could not retrieve EU-representative information on these. In the context of an aging prison population in many EU/EEA countries(11), such a high underlying prevalence of communicable diseases is of further concern for its potential to exacerbate non-communicable diseases course and clinical outcome in growing numbers of polymorbid patients(2,4,18).Drug use disorders (i.e. substance abuse and/or dependence) are also disproportionally prevalent in prison, with a recent review estimating that 30% of incarcerated men and 51% of incarcerated women are affected(19). Available data for people who inject drugs (PWID) show an association between infection with HIV and HCV and prison history, with longer incarceration linked to higher prevalence(20,21). Yet when harm reduction and treatment services, such as opioid substitution, are introduced in prisons they tend to have a considerable time lag(22), and only some EU countries attain a level of coverage in prisons comparable with that available in the community(23).

In addition, poor infrastructure, overcrowding, inadequate health-care facilities, and delayed diagnoses are recognised risk factors for communicable disease transmission in prison settings(24), as are the challenges of delivering health care in this environment(25). However, although security is the primary concern of prison systems, there is increasing recognition of the role of health-care services in supporting safe and effective incarceration regimes and of the formal partnership work required to deliver a high-quality health system in prisons(26).

The case for targeting prison populations and the “community dividend”

Delivering health protection and harm reduction public health programmes in prisons not only benefits the prison population but can reduce the risk of transmission of some infectious diseases in the community by targeting “high transmission networks” within or linked to prison populations, as well as by intervening earlier in the natural history of some diseases. This benefit of prison-based interventions for wider public health is referred to as the “community dividend”(27), an approach well validated for diseases such as TB, historically considered a challenge in prison settings, or treatment of substance dependence, and with high potential for HCV, for which prevention and control interventions have seen a rapid development in recent years.

The call for viral hepatitis to be eliminated as a public health threat by 2030 has created global momentum(28). Prisons are an obvious target for micro-elimination initiatives, yet a very poorly explored one. Recent initiatives in countries such as the United Kingdom(29) highlight the potential for HCV case detection when universal active case finding is performed on admission. The advent of directly active antiviral (DAA) regimens has provided new opportunities to treat more patients with

fewer clinical restrictions and limited side effects and in a much shorter time(30), so that a treatment course may now be completed during the average prison stay. Accumulating evidence proves that the use of interferon-free, DAA-based treatment regimens in prison settings is feasible and well tolerated(31), building on previous findings demonstrating the equivalence of clinical outcomes between prison- and community-based pre-DAA treatment(32). In a scenario of increasing HCV treatment provision and declining cost of drugs, recent modelling studies have consistently predicted a decline in HCV incidence and prevalence in the general population following a scaling up of case finding and DAA-based HCV treatment in prison settings, making it an increasingly more attractive and financially sustainable intervention(33–35).

A similar trajectory has been reported for another disease disproportionally affecting prison populations: hepatitis B. According to a study from Scotland, intensifying the offer of HBV vaccination to people in prisons has resulted in an increased uptake and has been mirrored in increased coverage among PWID in the community(36).

Despite the opportunities prison health care offers, limited attention is given to it, which is reflected in the low priority it repeatedly receives in public health agendas(14). At a national level this is also implicit in the lack of standardised monitoring of health interventions in prison compared with that in the community, in insufficient sharing of available data on access to and coverage of core interventions for the prevention and control of communicable diseases, and in the lack of exchange of good practice across the EU. In this context, the European Centre for Disease Prevention and Control (ECDC) and the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) have joined forces to produce the first European evidence-based public health guidance focusing on the prevention and control of communicable diseases in prison settings, with the aim of supporting EU countries in planning and implementing effective national strategies and programmes in this field.

The European public health guidance and the need for evidence-based decision making for prison health

In recent decades, the recognition of the value of evidence-based decision making in areas such as public health has resulted in this approach becoming mainstream. However, prison health has been at the margins of this transformation, not least because of the lack of related research.

The European guidance development followed the evidence-based medicine approach and several systematic literature reviews were conducted to collate and appraise the evidence(17,31,37–39). The findings were critically assessed by a multisectoral group of European prison experts, taking into account population subgroups, implementation challenges, and existing service delivery models in EU countries. The whole process was framed by the broader principles of health equity and human rights protection of people in prison, essential attributes of any intervention in prison settings to counterpoise the limited agency of people in prison(8,9). Taking inspiration from the five principles defined by the World Health Organization for HIV testing services (*consent, confidentiality, counselling, correct results, and connection*)(40), a “7 Cs” framework was developed, covering two additional specific aspects of prison-delivered health care: *continuity* of care after incarceration and post release, and a supportive *culture* in the prison system. The resulting public health guidance was published in 2018 (41,42), and main conclusions are summarised in Box 2.

However, the guidance development process was hampered by the shortage of published data. The retrieved evidence base was largely of low quality, with very few comparative studies, and

substantially reliant on grey literature sources. Prisons are probably one of the most challenging environments for conducting scientific research because of access problems for external researchers, and other discouraging factors affecting research planning and management, including ethical issues, a shortage of staff trained in conducting research, and competing pressures in the responsible institution(s)(4).

To fill existing knowledge gaps, more research conducted in EU countries is needed. The recently launched Worldwide Prison Health Research & Engagement Network may contribute to catalyse this process, not only in Europe, but globally (Box 3).

Prison health in practice: the need for intersectoral partnerships

A solid evidence base would certainly promote change but may not solve all of the challenges. Providing high-quality health-care services requires synergic efforts from several actors and at different levels.

First, prisons and prison health-care services are highly interdependent, as the latter cannot deliver high-quality health care in prisons without cooperation from the correctional system, and the former cannot deliver prison services that meet international standards without good health-care services(43). The WHO has published guidance for policy makers advocating that managing and coordinating all relevant agencies and resources that contribute to the health and well-being of prisoners is a whole-of-government responsibility and that ministries of health should provide, and be accountable for, prison health-care services(44). A unique momentum for change has been building since the end of the 1990s, as governance of prison health in several large European countries, such as Finland, France, Italy, Norway and UK(45), has moved into the remit of the relevant ministries of health. Where occurred, such transition resulted in improved resources and funding for key prison health issues, enhanced performance of the health services and the inclusion of prisoners in major public health initiative(44). In the UK, a recent review found that since 2006, when commissioning of prison health services was transferred to the National Health Service, the quality of prison health care improved(46). Independence of health care services from prison administration and penitentiary staff is considered an enabling factor for patient's confidentiality and the respect of patient-doctor relationship as well as a further guarantee of medical standards and ethics and an essential requirement to prevent conflicts related to dual loyalty for health professionals(4,44,47).

Transition care, or throughcare, is perhaps the most significant example of the need for partnership working in delivering health care in prison. It has long been identified as the weakest link in the effective management of admitting individuals with drug use disorders or special health needs (e.g. chronic diseases, HIV infection, TB treatment, mental disorders) into prison, transferring them between prisons, and their re-entry into the community(4). Although many factors may hinder a smooth transition, perhaps the most relevant are the separate spheres of influence and institutional responsibility and the challenges of intersectoral cooperation. These are aggravated by operational and individual issues, such as lack of integrated health information systems that allow sharing of individual's clinical data between prison and community health services, and by reliance on the self-agency of the patient to access community services post-release, which in reality is often missing/absent (37).

Institutional partnerships would need to trickle down to operational level and promote integration of practices and collaboration between professionals working in prisons. In a recent example from the Czech Republic, successful coordination between health and correctional services led to the introduction of a condom distribution programme in one prison(48).

Monitoring: an essential tool for improving prison health

Supporting quality improvement in prison health care and addressing equivalence of care requires transparency, high-quality data collection, and performance monitoring(46). To achieve this, prison health would ideally be integrated into the overarching national health-monitoring system, yet this is seldom the case in EU countries.

Actively monitoring all elements of prison health and health-care provision using standardised data collection tools would not only contribute to better estimating the disease burden and correlated health needs, but also create the basis for adequate resource allocation. Ultimately, epidemiological and programmatic data from the prison system could be integrated into national and international data collection and inform comprehensive public health policy and planning.

Developmental work in this direction is ongoing at the European level, with the design of common tools for prison health data collection that build on existing data and information sources (Box 3). These unique regional initiatives may hopefully serve as a catalyst for similar activities elsewhere, to advance global exchange of experiences and benchmarking.

Conclusions: prison health is public health

The international standard of equivalence and continuity of care between prisons and the community(8) is a “silver thread” connecting the 2003 WHO “Moscow Declaration”, which recognised the essential need for integration between public health services and prison health(49), with the conclusions of the most recent European prison health meeting in Lisbon(50), organised by the WHO, the EMCDDA, and Public Health England, which highlighted the value of evidence-based interventions. Despite many remarkable improvements in equivalence of care during the 15 years between these events, much work remains to be done to ensure that prison health is truly seen as part of wider public health. It is also evident that there has never been a more compelling case for integration to protect the health of people who live or work in prisons, and that of the wider community, from communicable diseases, or a clearer need for better data and evidence to inform policy and practice.

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Conflict of interest

We declare that we have no conflicts of interest. **Authors' contribution**

LT conceived the idea of the manuscript. All authors equally contributed to the drafting. All authors reviewed and approved the final version.

References

1. Joint United Nations Programme on HIV/AIDS. Statement by UNAIDS to the UN Commission on Human Rights. In Geneva: UNAIDS; 1996.

2. Dolan K, Wirtz AL, Moazen B, Ndeffo-mbah M, Galvani A, Kinner SA, et al. Global burden of HIV, viral hepatitis, and tuberculosis in prisoners and detainees. Lancet [Internet]. 2016;388(10049):1089–102. Available from: http://www.embase.com/search/results?subaction=viewrecord&from=export&id=L612115315

3. Kamarulzaman A, Reid SE, Schwitters A, Wiessing L, El-Bassel N, Dolan K, et al. Prevention of transmission of HIV, hepatitis B virus, hepatitis C virus, and tuberculosis in prisoners. Lancet [Internet]. 2016;388(10049):1115–26. Available from: http://www.embase.com/search/results?subaction=viewrecord&from=export&id=L612115325

4. World Health Organization Europe Office. Prisons and health. Copenhagen: WHO Regional Office for Europe; 2014.

5. Moazen B, Saeedi Moghaddam S, Silbernagl MA, Lotfizadeh M, Bosworth RJ, Alammehrjerdi Z, et al. Prevalence of Drug Injection, Sexual Activity, Tattooing, and Piercing Among Prison Inmates. Epidemiol Rev [Internet]. 2018 Apr 20 [cited 2018 May 22]; Available from: https://academic.oup.com/epirev/advance-article/doi/10.1093/epirev/mxy002/4979520

6. Baybutt M, Chemlal K. Health-promoting prisons: theory to practice. Glob Health Promot [Internet]. 2016 [cited 2018 Apr 19];23(1_suppl):66–74. Available from: https://doi.org/10.1177/1757975915614182

7. Dumont DM, Brockmann B, Dickman S, Alexander N, Rich JD. Public health and the epidemic of incarceration. Annu Rev Public Health. 2012 Apr;33:325–39.

8. United Nation General Assembly. The United Nations Standard Minimum Rules for the Treatment of Prisoners (the Nelson Mandela Rules) [Internet]. 2015 [cited 2018 Oct 11]. Available from: https://www.unodc.org/documents/justice-and-prison-reform/GA-RESOLUTION/E_ebook.pdf

9. Council of Europe. European Prison Rules. Strasbourg: Editions du Conseil de l'Europe; 2006.

10. European Court of Human Rights. Factsheet – Prisoners' health-related rights [Internet]. [cited 2018 Apr 19]. Available from: https://www.echr.coe.int/Documents/FS_Prisoners_health_ENG.pdf

11. Aebi MF, Tiago MM, Berger-Kolopp L, Burkhardt C. SPACE I – Council of Europe Annual Penal Statistics: Prison populations. Survey 2016. [Internet]. Strasbourg, France; 2017. Available from: http://wp.unil.ch/space/files/2018/03/SPACE-I-2016-Final-Report-180315.pdf

12. Ndeffo-Mbah ML, Vigliotti VS, Skrip LA, Dolan K, Galvani AP. Dynamic Models of Infectious Disease Transmission in Prisons and the General Population. Epidemiol Rev [Internet]. 2018 Mar 16 [cited 2018 May 22]; Available from: https://academic.oup.com/epirev/advance-article/doi/10.1093/epirev/mxx014/4939385

13. Falla AM, Hofstraat SHI, Duffell E, Hahné SJM, Tavoschi L, Veldhuijzen IK. Hepatitis B/C in the countries of the EU/EEA: a systematic review of the prevalence among at-risk groups. BMC Infect Dis. 2018;18(1):79.

14. European Centre for Disease Prevention and Control. Thematic report, prisoners: monitoring implementation of the Dublin Declaration on Partnership to Fight HIV/AIDS in Europe and Central Asia: 2014 progress report. [Internet]. Stockholm; 2015 [cited 2018 Apr 19]. Available from: http://dx.publications.europa.eu/10.2900/979305

15. European Centre for Disease Prevention and Control. Tuberculosis surveillance and monitoring in Europe 2017. Stockholm: ECDC; 2018.

16. Baussano I, Williams BG, Nunn P, Beggiato M, Fedeli U, Scano F. Tuberculosis Incidence in Prisons: A Systematic Review. Menzies D, editor. PLoS Med [Internet]. 2010 Dec 21 [cited 2018 Oct 22];7(12):e1000381. Available from: http://www.ncbi.nlm.nih.gov/pubmed/21203587

17. European Centre for Disease Prevention and Control. Systematic review on the diagnosis, treatment, care and prevention of tuberculosis in prison settings. Stockholm; 2017.

18. Gates ML, Hunter EG, Dicks V, Jessa PN, Walker V, Yoo W. Multimorbidity patterns and associations with functional limitations among an aging population in prison. Arch Gerontol Geriatr [Internet]. 2018 Jul [cited 2018 Oct 22];77:115–23. Available from: http://www.ncbi.nlm.nih.gov/pubmed/29738900

19. Fazel S, Yoon IA, Hayes AJ. Substance use disorders in prisoners: an updated systematic review and meta-regression analysis in recently incarcerated men and women. Addiction [Internet]. 2017;112(10):1725–39. Available from: https://www.ncbi.nlm.nih.gov/pubmed/28543749

20. Wenz B, Nielsen S, Gassowski M, Santos-Hovener C, Cai W, Ross RS, et al. High variability of HIV and HCV seroprevalence and risk behaviours among people who inject drugs: results from a cross-sectional study using respondent-driven sampling in eight German cities (2011-14). BMC Public Health [Internet]. 2016/09/07. 2016;16:927. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5011883/pdf/12889_2016_Article_3545.pdf

21. Stone J, Fraser H, Lim A, Walker J, Ward Z, MacGregor L, et al. Incarceration history and risk of HIV and hepatitis C virus acquisition among people who inject drugs: a systematic review and meta-analysis. Lancet Infect Dis. 2018;3099(18):1–13.

22. Hedrich D, Alves P, Farrell M, Stöver H, Møller L, Mayet S. The effectiveness of opioid maintenance treatment in prison settings: a systematic review. Addiction [Internet]. 2012;107(3):501–17. Available from: http://www.embase.com/search/results?subaction=viewrecord&from=export&id=L364698833

23. European Monitoring Office for Drugs and Drug Addiction. Health and social responses to

drug problems: a European guide. EMCDDA, editor. Luxembourg: Publications Office of the European Union; 2017. 181 p.

24. Hayton P, van den Bergh B, Moller L. Health protection in prisons: the Madrid Recommendation. Public Health [Internet]. 2010 Nov 1 [cited 2018 May 25];124(11):635–6. Available from: https://www.sciencedirect.com/science/article/pii/S0033350610002738?via%3Dihub

25. Ginn S. Prison environment and health. BMJ [Internet]. 2012 Sep 17 [cited 2018 May 25];345:e5921. Available from: http://www.ncbi.nlm.nih.gov/pubmed/22988305

26. HM Government. National Partnership Agreement for Prison Healthcare in England. 2018; Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/697130/moj-national-health-partnership-2018-2021.pdf

27. Public Health England, Revolving Doors Agency, Home Office. Rebalancing Act: A resource for Directors of Public Health, Police and Crime Commissioners and other health and justice commissioners, service providers and users. 2017; Available from: http://www.revolving-doors.org.uk/file/2049/download?token=4WZPsE8I

28. World Health Organization. Combating Hepatitis B and C To Reach Elimination By 2030 May 2016 Advocacy Brief. 2016;(May). Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/697130/moj-national-health-partnership-2018-2021.pdf

29. Public Health England. BBV bulletin: Special Edition Quarterly update report of the introduction of opt-out BBV testing in prisons from PHE, NHS England and HMPPS. 2017.

30. Pawlotsky J-M, Negro F, Aghemo A, Berenguer M, Dalgard O, Dusheiko G, et al. EASL Recommendations on Treatment of Hepatitis C 2018. J Hepatol [Internet]. 2018 Apr 9 [cited 2018 May 25]; Available from: http://www.ncbi.nlm.nih.gov/pubmed/29650333

31. Vroling H, Oordt-Speets AM, Madeddu G, Babudieri S, Monarca R, O'Moore E, et al. A systematic review on models of care effectiveness and barriers to Hepatitis C treatment in prison settings in the EU/EEA. J Viral Hepat. 2018;

32. Aspinall EJ, Mitchell W, Schofield J, Cairns A, Lamond S, Bramley P, et al. A matched comparison study of hepatitis C treatment outcomes in the prison and community setting, and an analysis of the impact of prison release or transfer during therapy. J Viral Hepat. 2016;23(12):1009–16.

33. Stone J, Martin NK, Hickman M, Hutchinson SJ, Aspinall E, Taylor A, et al. Modelling the impact of incarceration and prison-based hepatitis C virus (HCV) treatment on HCV transmission among people who inject drugs in Scotland. Addiction. 2017 Jul;112(7):1302–14.

34. He T, Li K, Roberts MS, Spaulding AC, Ayer T, Grefenstette JJ, et al. Prevention of Hepatitis C by Screening and Treatment in U.S. Prisons. Ann Intern Med. 2016 Jan;164(2):84–92.

35. Martin NK, Vickerman P, Brew IF, Williamson J, Miners A, Irving WL, et al. Is increased hepatitis C virus case-finding combined with current or 8-week to 12-week direct-acting antiviral therapy cost-effective in UK prisons? A prevention benefit analysis. Hepatology [Internet]. 2016;63(6):1796–808. Available from: http://www.embase.com/search/results?subaction=viewrecord&from=export&id=L611238165

36. Palmateer NE, Goldberg DJ, Munro A, Taylor A, Yeung A, Wallace LA, et al. Association

between universal hepatitis {B} prison vaccination, vaccine uptake and hepatitis {B} infection among people who inject drugs. Addiction. 2018;113(1):80–90.

37. European Centre for Disease Prevention and Control, European Monitoring Office for Drugs and Drug Addiction. Systematic review on the prevention and control of blood-borne viruses in prison settings [Internet]. 2018 [cited 2018 Oct 9]. Available from: https://ecdc.europa.eu/sites/portal/files/documents/Prevention-control-BBV-prison-settings-systemativ-review.pdf

38. European Centre for Disease Prevention and Control, t and he European Monitoring Centre for and Drugs. Systematic review on active case finding of communicable diseases in prison settings [Internet]. Stockholm; 2017 [cited 2018 Apr 19]. Available from: https://ecdc.europa.eu/sites/portal/files/documents/Systematic-review-on-communicable-diseases-in-prison-settings-final-report.pdf

39. Tavoschi L, Vroling H, Madeddu G, Babudieri S, Monarca R, Vonk Noordegraaf-Schouten M, et al. Active Case Finding for Communicable Diseases in Prison Settings: Increasing Testing Coverage and Uptake Among the Prison Population in the European Union/European Economic Area. Epidemiol Rev. 2018 Jun;40(1):105–20.

40. World Health Organization. Consolidated guidelines on HIV testing services. WHO, editor. Geneva: WHO; 2015.

41. European Centre for Disease Prevention and Control, European Monitoring Office for Drugs and Drug Addiction. Public health guidance on prevention and control of blood-borne viruses in prison settings [Internet]. 2018 [cited 2018 Oct 9]. Available from: https://ecdc.europa.eu/sites/portal/files/documents/Guidance-on-BBV-in-prisons.pdf

42. European Centre for Disease Prevention and Control, European Monitoring Office for Drugs and Drug Addiction. Public health guidance on active case finding of communicable diseases in prison settings [Internet]. ECDC, editor. Stockholm, Sweden: ECDC; 2018. Available from: https://ecdc.europa.eu/sites/portal/files/documents/Active-case-finding-communicable-diseases-in-prisons.pdf

43. European Committee for the Prevention of Torture and Inhuman or Degrading Treatment or Punishment. Developments concerning CPT standards in respect of imprisonment [Internet]. 2001. Available from: https://rm.coe.int/16806cd24c

44. World Health Organization Regional Office for Europe. Good governance for prison health in the 21st century. 2013;1-9,15-19.

45. World Health Organization Europe Office. GHO | Health in Prisons European Database (HIPED) | Prison health care oversight [Internet]. WHO. World Health Organization; [cited 2018 Oct 22]. Available from: http://apps.who.int/gho/data/node.prisons.Prison_Health_Care_Oversight?lang=en

46. Leaman J, Richards AA, Emslie L, O'Moore EJ. Improving health in prisons - from evidence to policy to implementation - experiences from the UK. Int J Prison Health. 2017;13(3–4):139–67.

47. Pont J, Enggist S, Stöver H, Williams B, Greifinger R, Wolff H. Prison Health Care Governance: Guaranteeing Clinical Independence. Am J Public Health [Internet]. 2018;108(4):472–6. Available from: http://ajph.aphapublications.org/doi/10.2105/AJPH.2017.304248

48. Mravčìk V. Pilot condom distribution in a Czech prison. In: Lisbon Addictions 2017 [Internet]. Lisbon; 2017. Available from: https://harmreduction.eu/HA-REACT-Czech-condom-

distribution.pdf

49. World Health Organization Regional Office for Europe. Declaration on Prison Health as Part of Public Health (adopted in Moscow on 24 October 2003) [Internet]. 2003. Available from: http://www.euro.who.int/__data/assets/pdf_file/0007/98971/E94242.pdf

50. World Health Organization Europe Office. Conclusions of the WHO international meeting on prisons and health. In Lisbon; 2017 [cited 2018 May 3]. Available from: https://rm.coe.int/final-version-lisbon-conclusions/16807af4b1

51. European Monitoring Office for Drugs and Drug Addiction, European Centre for Disease Prevention and Control. Prevention and control of blood-borne viruses in prison settings: selected findings from ECDC and EMCDDA scientific guidance. [Internet]. Luxembourg; 2018 [cited 2018 Nov 7]. Available from: http://www.emcdda.europa.eu/system/files/publications/9104/TD0318053ENN_final.pdf

Box 1: Equivalence of care

"Under the 'principle of equivalence', people in prison shall have access to the health services available in the country, without discrimination on the grounds of their legal situation; the prison health staff shall have adequate training and be able to identify mental health problems; and those in need of specialised treatment not available in prison shall be transferred to external institutions.

"Health and wellbeing of people in prisons are the responsibility of the State under its legal and human rights obligations. Considering the poorer general health of people in prison, this may require a higher level of care compared to their peers in the community and more services and expenditure per capita to deliver the same health outcome".[8]

Box 2: Key conclusions from the European guidance on prevention of infectious diseases in prison settings

KEY CONCLUSIONS **European guidance on prevention of infectious diseases in prison settings***
Active case finding in prison settings(42,51) **BBVs** Actively offer testing for HBV, HCV, and HIV to all people in prison upon admission and throughout the time in prison ✓ Evidence shows that pro-active provision leads to higher uptake; health promotion and peer education have shown to increase HIV testing uptake **STIs** Several testing approaches may be considered, including risk-based, age-based or universal testing ✓ Evidence shows that active testing offer leads to higher uptake than client-initiated testing **TB (active and latent)** Actively offer universal provider-initiated testing for active TB at prison intake Offering latent TB infection (LTBI) testing may be considered, at least for individuals at high risk of disease progression, depending on local epidemiology and the availability of resources
Blood-borne virus prevention and control in prison settings(41,51) **Prevention** Offer a comprehensive package of preventive measures to people in prison that meets the same national standards as that recommended for community settings ✓ Evidence shows that condoms and behavioural interventions promote safer sex; ✓ Evidence shows that opioid substitution treatment reduces illicit opioid use and risks related to equipment sharing and, when continued on release, provides protection from death caused by overdose; ✓ Evidence shows that the provision of clean drug injection equipment is possible in prison settings and can successfully contribute to a comprehensive programme to reduce BBV transmission **HBV vaccination** Offer HBV vaccination to people in prison with unknown or negative serology ✓ Evidence shows that using rapid schedules may result in a higher completion rate **HIV and viral hepatitis treatment** Offer appropriate treatment to individuals diagnosed with HIV, HBV or HCV in prison settings, in line with national and/or international guidelines; provision meeting the same standards as in the community ✓ Evidence shows that treatment of BBV infections is feasible and effective in prison

Continuity of care

Actively support and ensure continuity of care between prison and community

- ✓ Evidence shows that release from prison is a key barrier to drug and infectious diseases treatment continuity and adherence
- ✓ Evidence shows that collaboration and partnership between prison and community health-care services promote and facilitate uninterrupted care
- ✓ Evidence shows that active referral to external services improves treatment adherence

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Box 3: Resources for quality improvement in prison health care

Resources for quality improvement in prison health care

1. WEPHREN: Public Health England, in partnership with The Global Health Network and the WHO Regional Office for Europe, recently launched an initiative to substantially catalyse this process: the Worldwide Prison Health Research & Engagement Network (WEPHREN) is an open access international collaborative forum aiming to improve the health of people in prison through developing the evidence base, disseminating important research findings, fostering effective collaborative networks, and capacity building and professional development initiatives. It is open for participation from prison health policy makers, planners, and researchers. Find out more at https://wephren.tghn.org

2. EMCDDA: The EMCDDA is a specialised EU agency in charge of monitoring the drug situation in Europe. Data on drug use and related health problems in prison, as well as on responses to drug use in prison in the 28 EU Member States, Norway, and Turkey, are reported annually in "European drug report: trends and developments" and the Statistical Bulletin, and every 3 years in "European guide on health and social responses to drug problems". Based on a common monitoring framework, and in synergy with other tools, a European Questionnaire on Drug Use among Prisoners (EQDP) for cross-sectional prison surveys is available and a tool for standardised data collection on drug-related interventions in prison is in development. For an overview, see http://www.emcdda.europa.eu/topics/prison_en

3. HIPED: As the only WHO prison programme anywhere in the world, the Partnership for Health in the Criminal Justice System at the WHO Regional Office for Europe is a first-of-its-kind platform for information dissemination, networking, and good practice sharing in the area of prison health. With contributions from partners representing the main areas of the field, the platform provides resources for policy makers, researchers, and members of the public interested in prison health. This includes the recently launched minimum public health dataset, the Health in Prisons European Database (HIPED), which covers data on the main areas of prison health, including prison health systems; the prison environment; risk factors for diseases; and the screening, prevention, treatment, and prevalence of communicable and non-communicable diseases. For more information see http://apps.who.int/gho/data/node.prisons