

Schriftenreihe „Gesundheitsförderung im Justizvollzug“ – „Health Promotion in Prisons“

Herausgegeben von Heino Stöver und Jutta Jacob

„Gesundheitsförderung zielt auf einen Prozess, allen Menschen ein höheres Maß an Selbstbestimmung über ihre Gesundheit zu ermöglichen und sie damit zur Stärkung ihrer Gesundheit zu befähigen. Um ein angemessenes körperliches und seelisches Wohlbefinden zu erlangen, ihre Wünsche und Hoffnungen wahrnehmen und verwirklichen, sowie ihre Umwelt meistern bzw. sie verändern zu können.“ Diese Gedanken leiten die Ottawa-Charta zur Gesundheitsförderung ein, die 1986 von einer internationalen Konferenz verabschiedet wurde. Versucht man den Leitgedanken der Ottawa-Charta, die Stärkung der Selbstbestimmung über die Gesundheit, auf den Strafvollzug zu beziehen, stößt man schnell an Grenzen der Übertragbarkeit: Äußere Beschränkungen, Fremdbestimmungen, eingeschränkte Rechte prägen das Leben und die gesundheitliche Lage der Gefangenen.

Mit der Schriftenreihe „Gesundheitsförderung im Justizvollzug“ wollen wir Beiträge veröffentlichen, die innovative gesundheitspolitische Anregungen für den Justizvollzug geben und gesundheitsfördernde Praxisformen des Vollzugsalltags vorstellen.

Außerhalb des Vollzugs bewährte Präventionsangebote und Versorgungsstrukturen werden auf ihre Relevanz zur Verbesserung der gesundheitlichen Situation Inhaftierter hin überprüft und auf die Bedingungen des Justizvollzugs bezogen.

Letztendlich kann nur eine größere Transparenz und Durchlässigkeit des Systems „Justizvollzug“ dazu beitragen, individuelle gesundheitsorientierte Potenziale Gefangener anzuregen und zu fördern.

Die HerausgeberInnen

Michael Levy · Heino Stöver

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Abbreviations

AIDS – Acquired Immune Deficiency Syndrome

ADHD – Attention Deficit Hyperactivity Disorder

bd – twice daily medication dosing

BMI – Body Mass Index

CDC – Centers for Disease Control and Prevention

CBT- Cognitive Behavioural Treatment

CPT – European Committee for the Prevention of Torture and Inhuman or Degrading Treatment or Punishment

DOT – Directly Observed Treatment

DSM – Diagnostic and Statistical Manual of Mental Disorders

EASL – European Association for Study of the Liver

EMCDDA – European Monitoring Centre for Drugs and Drug Addiction

HAART – Highly active anti-retroviral treatment

HAV – Hepatitis A virus

HBV – Hepatitis B virus

HCV – Hepatitis C virus

HIV – Human immunodeficiency virus

ICCPR – International Covenant on Civil and Political Rights

ICESCR – International Covenant on Economic, Social and Cultural Rights

MDRTB – Multi-drug resistance tuberculosis

NNRTI – Non-nucleoside transcriptase inhibitor

NSAID – Non-steroidal anti-inflammatory drug

NSP – Needle and syringe programme
NUC – nucleoside / nucleotide
PTSD – Post-traumatic stress disorder
OST– Opioid substitution treatment
RCGP – Royal College of General Practitioners (UK)
RPS – Royal Pharmaceutical Society (UK)
STI – Sexually transmitted infections
TB – Tuberculosis
tds – three times daily medication dosing
TST – tuberculin skin test, also purified protein derivative (PPD)
UK – United Kingdom
UNAIDS – United Nations Agency on AIDS
UNODC – United Nations Office on Drugs and Crime
USA – United States of America
WHO – World Health Organization

Foreword

Michael Levy, Heino Stöver

Worldwide, more than 10 million people were held in penal institutions in 2011, representing a global prison population rate of 146 per 100,000 adults. Prisoners are sicker than their civilian counterparts, with higher levels of addictions, mental illness, infectious diseases and dental disease. They are intense users of prescribed medications – at least while they are in custodial care.

This publication brings together the experiences of 18 health professionals. Each has some experience in working with prisoner populations and each has a particular perspective on the impacts that the custodial environment has on professional practice.

The authors' primary work is in seven advanced-economy countries, but the pooled experience is from a far broader range of prison systems than may be at first evident.

Perhaps, a future publication will be written from the perspective of more stressed prison health services, and also from the perspective of the prisoner-patient.

If this publication opens opportunities for a broader appreciation of safer prescribing of medications, then we the editors and authors are pleased with our efforts, to date.

Finally, a note on the editorial philosophy we have applied to this publication. Compiling contributions from a diverse range of practitioners, each with their nuanced appreciation of the evolving discipline of custodial healthcare, brings with it a range of philosophies, a range of jargon and a range of appreciation of English as a second or third language. We have tried to bring a degree of consistency to this publication without over-editing the contribu-

tions. We hope that this is appreciated, and accepted as a strength of the resulting contributions.

Canberra, Australia and Frankfurt am Main, Germany – November 2013

Overview – Why is this Topic Important?

Michael Levy, Heino Stöver

Introduction

Every prison health service has to assess its prescribing competence in light of conflicting forces:

1. Professional standards, first and foremost – what is the community practice?
2. Population needs and behaviours, as they may impact prescribing practices, including compliance and diversion of medications – within the prison, from the community into the prison, and from the prison into the community.
3. Environmental and institutional forces that support safe prescribing, and their limitations which bring professional practice into disrepute.

Prescribed medications are a major component of clinical practice within prisons. Medications are the central point of contact between the patient and medical staff – acknowledging that most prison health services have developed primary care models with nurse-lead health services. It has been estimated that approximately 15% of a prison health service budget is spent on prescribed medications.¹

Yet, in 1980–2011 there were only 24 peer-reviewed articles vaguely on the issue of “prison” and “prescribing”; and these included issues such as:

- Prescribing experience of individual practitioners
- Non-prescribing – tales of caution
- Non-prescribing – prisoners are less eligible
- Interactions with custodial authorities, and
- Community – prison comparison of prescribing (only one article).

The human rights conventions concerning standards of imprisonment pay little attention to prescribed medications, or the competence of medical and

1 University of Massachusetts Medical School. Clinical Pharmacy Services: Correctional Health.

nursing staff to prescribe and dispense medications. Rule 43 of the United Nations Standard Minimum Rules (Retention of Prisoners Property) states at (4):

*If a prisoner brings in any drugs or medicine, the medical officer shall decide what use shall be made of them.*²

As simple as this statement is, it does provide support to the health service in assessing the ongoing health needs of the client – importantly it is not the custodial authority that assesses clinical needs.

The European Committee for the Prevention of Torture and Inhuman or Degrading Treatment or Punishment (CPT) Standards³ focus in a limited manner on the issues of prescribed medications – under “Equivalence of Care”, i) general medicine:

38. A prison health care service should be able to provide medical treatment and nursing care, as well as appropriate diets, physiotherapy, rehabilitation or any other necessary special facility, in conditions comparable to those enjoyed by patients in the outside community.

Provision in terms of medical, nursing and technical staff, as well as premises, installations and equipment, should be geared accordingly.

There should be appropriate supervision of the pharmacy and of the distribution of medicines. Further, the preparation of medicines should always be entrusted to qualified staff (pharmacist/nurse, etc.).

41. In comparison with the general population, there is a high incidence of psychiatric symptoms among prisoners. Consequently, a doctor qualified in psychiatry should be attached to the health care service of each prison, and some of the nurses employed there should have had training in this field.

The provision of medical and nursing staff, as well as the layout of prisons, should be such as to enable regular pharmacological, psychotherapeutic and occupational therapy programmes to be carried out.

2 The United Nations Standard Minimum Rules for the Treatment of Prisoners <http://www2.ohchr.org/english/law/treatmentprisoners.htm> (Accessed 13 April 2012)

3 European Committee for the Prevention of Torture and Inhuman or Degrading Treatment or Punishment (CPT). The CPT Standards. Strasbourg 2010. <http://www.cpt.coe.int/en/documents/eng-standards.pdf> (Accessed 13 April 2012)

44. A mentally disturbed and violent patient should be treated through close supervision and nursing support, combined, if considered appropriate, with sedatives. Resort to instruments of physical restraint shall only very rarely be justified and must always be either expressly ordered by a medical doctor or immediately brought to the attention of such a doctor with a view to seeking his approval. Instruments of physical restraint should be removed at the earliest possible opportunity. They should never be applied, or their application prolonged, as a punishment.

In an important, but non-binding, document, *Monitoring Places of Detention – a practical guide*⁴, three questions are posed to an official reviewing a prison health service:

1. *How appropriate is the storage of medication?*
2. *How are drugs ordered?*
3. *How is control exercised over stock?*

These are important questions, but leave the complex area of prescribed medications essentially blind in the process of monitoring places of detention.

Exactly how much prescribed medications, and the nuances of patient-care, are supported by a scanty body of documents available in the public domain. Perhaps this is because so much that supports the care of prisoners is excluded from public scrutiny, or because of generalised fears of disclosure of ‘in confidence’ information. This is unhelpful and impedes peer-review and leaves a substantial void in this important area of primary care.

The Royal College of General Practitioners (RCGP) and the Royal Pharmaceutical Society (RPS) has produced a detailed set of guidelines *Safer Prescribing in Prisons: guidance for clinicians*.⁵ The main messages of the guidelines are that there is a standard of safe prescribing, and that the restrictions on prescribing some medications in most circumstances are those limitations that would be followed in the community.

Trauma (psychological, neuropathic pain; also dependence), mental illness, drug dependence and oral (dental and gingival) disease – are all prevalent in prisoner populations, and contribute a large component of drug seeking

4 http://www.apr.ch/content/files_res/monitoring-guide-en.pdf (accessed 2 July 2013)

5 *Safer Prescribing in Prisons: guidance for clinicians*. Nottingham Healthcare 2011. http://www.rcgp.org.uk/pdf/Safer_Prescribing_in_Prison.pdf (accessed 30 November 2011)

behaviours. The skilled practitioner will need to navigate these obstacles, and always act in the best interests of the patient.

Lifetime poor sleep patterns and an environment that is conducive to disturbed sleep mean that hypnotic medications are much sought after, posing a risk to clinical practice and patient. Prescribing of hypnotics, even for short periods, is to be undertaken with great caution. Perhaps more than any other related issue, it is these considerations that will test the principle of equivalence of health care in the prison setting.

Prison is an environment where drugs – licit and illicit are marketed – the nature of that market is opportunistic and variable; even long-term patients can experience acute withdrawal when the supply of illicit drugs is interrupted – this needs to be addressed in a compassionate and non-judgemental way, and never disclosing the circumstances to custodial authorities.

Clinicians who choose to work within prison should also be familiar with the requirement of mandatory testing of prisoners for drugs and they should consider whether their prescriptions could mask illicit drug use, particularly with regard to the prescribing of opiates. This is a *scenario* where the interests of the coercive custodial regime impede the safer engagement with ethical prescribing. The detrimental health consequences of these testing regimes have been highlighted by Gore and Bird in Scotland.⁶

There is sometimes external pressure to prescribe liquid, crushed or slow-release formulations because of a belief that diversion of medications is reduced. The evidence for this assumption is missing and would be worthy of critical examination. Compliance with these requests should only be pursued if there is no potential detrimental consequence.

Lest we forget, diversion of prescribed medications is prevalent in the community⁷; as is non-compliance with prescribed regimes.⁸ Like so much of the custodial experience, prison is a mere reflection of community practices.

6 Gore SM, Bird AG. Cost implications of random mandatory drugs tests in prisons. *Lancet* 1996; 348: 1124–1127.

7 Roberts MB, Keith MR. Implementing a performance evaluation system in a correctional managed care pharmacy. *Am J Health Syst Pharm* 2002; 59: 1097–1104.

8 Cooke C. Pharmacy on the ‘inside’. <http://www.thepharmacist.co.uk/pharmacy-practice/pharmacy-inside> (accessed 30 November, 2011)

Risk mitigation to licit drug misuse helps create a safe environment, to protect some prisoners from misguided attempts to over medicate existing or imaginary health conditions, and to protect the prescriber. But, unbalanced by compassion, professional standards and tailoring to individual needs can lapse into a degree of complicity with the custodial enterprise.

Fishman wrote in 2006:

*Drug abuse and under treated pain are both public health crises, but the solution to one need not undermine the other. While it is critically important to respond aggressively and appropriately to the prescription drug abuse crisis, substantial harm to millions of patients can occur when we draw conclusions from an inadequate quantum of evidence, impose solutions that are insensitive to their collateral damages, and displace the regulation of medicine from government agencies responsible for health to those focusing on law enforcement.*⁹

Bernice Elger and colleagues, in a landmark article, compared prescribing practices in the Geneva prison with community prescribing. That was in 2004, and remains the sole comparative study.¹⁰ They reported that the most often non-psychotropic drugs at the Geneva prison were analgesics (NSAIDs and paracetamol), dermatological medications, antibiotics and drugs for the gastrointestinal system; and for most types of non-psychotropic drugs the frequency of prescription as well as the prescribing patterns were similar in the prison ambulatory service and the urban poly-clinic.

Australian prisoners in 2010 received prescribed medications at a prodigious rate:

- 40% were prescribed medications; on average 2.3 drugs per person;
- female prisoners were more likely to be medicated than male prisoners (47% v 39%);
- anti-depressants and mood stabilisers accounted for 18% of repeat prescriptions, while anti-inflammatory drugs accounted for 12% of repeat prescriptions.¹¹

9 Fishman SM. Prescription drug abuse and safe pain management. *Pharmacoepidemiology and drug safety* 2006; 15: 628–631.

10 Elger BS, Bindschedler M, Goehring C, Revaz SA. Evaluation of drug prescription at the Geneva prison's outpatient service in comparison to an urban outpatient medical service. *Pharmacoepidemiology and Drug Safety* 2004; 13: 633–644

11 Australian Institute of Health and Welfare. *The health of Australia's prisoners 2010*. Canberra 2011. <http://aihw.gov.au/publication-detail/?id=1073742011>

The differences between community prescribing and prison prescribing is starkest in the availability of methadone and buprenorphine. Only 30 countries in the world allow, in at least some part, access to this potentially life saving medication to opiate dependent prisoner-patients¹², and then inconsistently across the country.¹³

Clinical pharmacy in the custodial setting is becoming a recognised specialist area – in both custodial medicine and in the discipline of pharmacy. There are special considerations in devising a pharmacopeia for prisoner-patients; while tradability and divert-ability of prescribed medications should not overbear on a clinical decision to prescribe, these issues must not be ignored. Of critical importance, is that these sensitive decisions are made by clinicians acting in the best interests of their patients, and not on the imposition of custodial authorities.

The involvement of a pharmacist experienced in secure environment practice can be promoted, so as to optimise the use of the most appropriate medication. This simple message deserves greater attention, and a stronger evidence-base.^{14 15} The utility of these professionals include:

- Poly-pharmacy advice
- Prescriber education
- Clinical guideline development
- Monitoring of adherence

A specialist pharmacy is uniquely placed to offer patients while in detention and in the release period, with product information; so important because side effects are amplified in an environment of poly-pharmacy.

12 Betteridge G, Jurgens R. Opioid substitution therapy in prisons: reviewing the evidence. Canadian HIV / AIDS Legal Network. Ottawa 2008. www.aidslaw.ca/prisons

13 Nunn A, Zaller N, Dickman S, Trimbur C, Nijhawan A, Rich JD. Methadone and buprenorphine prescribing and referral practices in US prison systems: results from a nationwide survey. *Drug and Alcohol Dependence* 2009; 105: 83-88

14 Kaye S, Darke S. The diversion and misuse of pharmaceutical stimulants: what do we know and why should we care? *Addiction*. 2012; 107: 467-477

15 Defulio A, Silverman K. The use of incentives to reinforce medication adherence. *Prev Med*. 2012

The Health-Custodial Relationship – The Right to Equivalent Health Care

Andrew Coyle

Introduction

Those who are imprisoned retain their fundamental right to enjoy good health, both physical and mental, and retain their entitlement to a standard of health care that is at least the equivalent of that provided in the wider community.

Throughout the course of the 19th and early 20th centuries there was a legal and philosophical debate about the extent to which people who were in prison were to be regarded as “outlaws”, that is, people who were not entitled to the normal safeguards of the law. Were they, as some would have had it, “slaves of the state” and “civilly dead”, people who had forfeited all of what we would now call their rights as human beings? Or were they to be regarded as citizens, some of whose rights were forfeited by the fact that they had been deprived of their liberty for a period of time? From the point of view of the persons who were in prison, this was not merely a legal and philosophical matter. It also had far-reaching practical implications, since the answer to these questions immediately affected their daily lives and how they were treated while in prison.

In respect of the principle, this debate has been resolved long since on the basis of the international human rights covenants and standards which have been ratified by the community of nations. In regard to prisoners, the most fundamental principle is articulated in the International Covenant on Civil and Political Rights (ICCPR), Article 10:

All persons deprived of their liberty shall be treated with humanity and respect for the inherent dignity of the human person.

Those persons who are in prison do not lose the inherent rights and safeguards which come with their humanity. At the same time, it is undoubtedly

true that such persons have some limits placed on their rights. For example, since they are legally detained, there are significant limits to their freedom of movement. Similarly, the fact of their detention means that there will be limitations to the exercise of their right to family life. This chapter considers the application of these principles to the health care of prisoners.

The general right to health is defined in the International Covenant on Economic, Social and Cultural Rights (ICESCR), which is the sister covenant to the ICCPR. Article 12(1) of the ICESCR states that:

The States Parties to the present Covenant recognize the right of everyone to the enjoyment of the highest attainable standard of physical and mental health.

This principle, which is legally binding on all states which have ratified the ICESCR, refers to the right of everyone and in so doing does not exclude those who are in any form of custody from the right to the “highest attainable standard” of health.

The international covenants, which are hard law, are reinforced by the soft law of other international human rights standards. One of the most important of these is the Body of Principles for the Treatment of Prisoners. Principle 9 states:

Prisoners shall have access to the health services available in the country without discrimination on the grounds of their legal situation.

The mere fact that people are in prison does not mean that they have any reduced right to appropriate health care. Indeed, the opposite is the case. When a state deprives people of their liberty, it takes on a responsibility to look after their health in terms both of the conditions under which it detains them and of the individual treatment that they may require. Those responsible for prison administrations have a responsibility not only to provide health care but also to establish conditions that promote the well-being of both prisoners and prison staff. To express this in another way, persons should not leave prison in a worse condition than when they entered.

The role of health care staff

In many countries health care staff, including doctors, who work in prisons are employed by the prison administration and not by the health service of the country. Where this is the case, these staff sometimes face ethical dilem-

mas about their professional priorities, particularly when prison managers seek to involve them in management matters, either throughout the prison or in respect of individual prisoners. Health care staff who work in prisons must always remember that their first duty to any prisoner who is their patient should be based on clinical considerations. This is underlined in the first of the United Nations (1982) *Principles of Medical Ethics relevant to the Role of Health Personnel, particularly Physicians, in the Protection of Prisoners and Detainees against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment*, which states:

Health personnel, particularly physicians, charged with the medical care of prisoners and detainees have a duty to provide them with protection of their physical and mental health and treatment of disease of the same quality and standard as is afforded to those who are not imprisoned or detained.

The International Council of Prison Medical Services confirmed this principle when it agreed on the Oath of Athens (Prison Health Care Practitioners 1979):

We, the health professionals who are working in prison settings, meeting in Athens on September 10, 1979, hereby pledge, in keeping with the spirit of the Oath of Hippocrates, that we shall endeavour to provide the best possible health care for those who are incarcerated in prisons for whatever reasons, without prejudice and within our respective professional ethics.

This principle is particularly important for doctors. In some countries, doctors can spend their whole career working in the prison environment. It is virtually inevitable in such situations that these physicians will form a close relationship with prison management and indeed may be members of the senior management team of the prison. One consequence of this may be that the director of the prison will occasionally expect the physician to assist in managing prisoners who are causing difficulty. A doctor may be asked to sedate prisoners who are violent towards themselves, to other prisoners or to staff. In some jurisdictions, prison administrations may demand that physicians provide them with confidential information about a person's HIV status. Medical staff should never lose sight of the fact that their relationship with every prisoner should be first and foremost that between physician and patient. A doctor should never do anything to patients or cause anything to be done to patients that are not in their best clinical interests. Similarly, as with all other patients, physicians should always seek consent from the patient

before taking any clinical action, unless the patient is not competent on clinical grounds to give this consent.

This over-riding duty to deal with prisoners as patients applies equally to other health care staff. In many countries nurses carry out many basic health care functions. These may include carrying out preliminary health assessments of newly admitted prisoners, issuing medicines or applying treatments prescribed by a physician or being the first point of contact for prisoners concerned about their health. The nurses who carry out these duties should be properly qualified for what they do and should treat people primarily as patients rather than as prisoners when carrying out their duties.

It should also be acknowledged that the prison environment has its own peculiarities and that these may affect the way that health care staff carry out their duties. Prisons are generally single sex institutions. They can be places of brutality and violence, with intimidation of the many by the few. Prisoners have limited contact with the outside world and this can mean that access to goods and facilities which might be common outside prison is severely restricted in prison; for example, alcohol will be prohibited completely and use of tobacco may be limited. This means that when these substances become available, legally or otherwise, they represent a currency which far exceeds their value in normal life. The same is likely to be true of drugs and other medications.

Many prisoners will have misused drugs before they came to prison. Some of them will do everything in their power to access drugs while in prison. Short of prohibiting all human contact between prisoners, staff, visitors and the outside world, it is impossible to eradicate completely the possibility that illicit drugs will enter a prison, although the authorities are likely to take every step possible to minimise the risk of this happening. If illicit drugs do circulate inside the prison then there will be a high possibility that prisoners will share the equipment which they need to administer drugs. An obvious example would be a hypodermic syringe. Given that these are not permitted by the authorities, they are likely to be in short supply, with the consequent likelihood that they will be passed from one prisoner to another. This is not in itself a matter for health care staff but the fact that needles are not properly sterilised poses an additional health risk and that is a health matter. The cross over between prison security and health care is obvious. Health care staff have a responsibility to ensure that prisoners are aware of the health risk of sharing needles and other drug equipment. Health staff should also ensure

that prison authorities are aware of the dangers involved and should assist them to develop policies which will minimise the risk. In acknowledging the fact that illicit syringes are present in the prison one such policy might be to have a system for controlled distribution of clean needles. This is a very problematic matter for a number of reasons. Health care staff should at least ensure that all the arguments are properly understood by all parties.

A further example of the cross over between security and health care considerations is the manner of distribution of prescribed medication. There may be security dangers in allowing some prisoners to have amounts of prescribed medication in their possession for personal consumption. This may be to do with the prisoner's personal condition and the danger that he or she will forget to take the medication, or may take it as an overdose, or may try to sell it to other prisoners. There may also be a danger that other prisoners will put pressure on a prisoner to hand over personal medication so that others can take it illegally. These dangers are real and need to be considered when health staff decide whether a particular individual should be allowed to have possession of a limited amount of prescribed medication. However, the risk that some prisoners may abuse this arrangement should not result in a blanket refusal to give any prisoner his or her own medication. As with other features of prison life there has to be proportionality and rigorous individual assessment of risk.

The organisation of prison health care

The UN Basic Principles for the Treatment of Prisoners indicate how the entitlement of prisoners to the highest attainable standard of health care should be delivered:

Prisoners shall have access to the health services available in the country without discrimination on the grounds of their legal situation. (Principle 9)

There are a number of ways of ensuring that prisoners have this access. One is by ensuring that prison administered health services have links that are as close as possible with public health. A number of countries are moving towards such closer relationship between the prison health service and public health. Many prison and public health reformers argue, however, that it is not sufficient to have a close relationship. They have maintained that prison health should be part of the general health services of the country rather than a specialist service under the government ministry responsible for prisons.

The correct delivery of health services in prisons has a wider significance than the care of the individual people who are detained, important though that is. There is also a clear public health interest in good prison health care linked closely to the provision of health services in the community as a whole. The vast majority of prisoners will one day return to civil society, often to the communities from which they originally came. Many of them will be in prison for relatively short periods. When they are released, it is important for the good of society that they do so in good health, rather than needing more support from the public health services, or bringing infectious diseases with them. Continuity of care between the prison and the community is a public health imperative. Many other people go into and come out of prison on a daily basis, staff, lawyers, officials and other visitors, and prisons cannot be seen as separate health sites from other institutions in society.

For all of these reasons bodies such as the World Health Organization (WHO) have strongly recommended that prison and public health care should be closely linked. In October 2003 the WHO's Health in Prisons Project agreed the Moscow Declaration on Prison Health as a part of Public Health. This Declaration elaborated on some of the reasons why close working relationships with public health authorities are so important.

- Penitentiary populations contain an overrepresentation of members of the most marginalised groups in society, people with poor health and chronic untreated conditions, drug users, vulnerable people and those who engage in risky activities such as injecting drugs and commercial sex work.
- The movement of people already infected with or at high risk of disease to penitentiary institutions and back into civil society without effective treatment and follow-up gives rise to the risk of the spread of communicable diseases both within and beyond the penitentiary system. Prevention and treatment responses must be based on scientific evidence and on sound public health principles, with the involvement of the private sector, nongovernmental organizations and the affected population.
- The living conditions in most prisons of the world are unhealthy. Overcrowding, violence, lack of light, fresh air and clean water, poor food and infection-spreading activities such as tattooing are common. Rates of infection with tuberculosis, HIV and hepatitis are much higher than in the general population.

The Declaration made a series of recommendations which would constitute the basis for improving the health care of all detained people, for protecting the health of prison personnel and for contributing to more general public health goals:

- Member States are recommended to develop close working links between the health ministry and the ministry responsible for the penitentiary system to ensure high standards of treatment for detainees, protection for personnel, joint training of professionals in modern standards of disease control, high levels of professionalism among penitentiary health care personnel, continuity of treatment between the penitentiary and outside society and unification of statistics.
- Member States are recommended to ensure that all necessary health care is provided to people deprived of their liberty free of charge.
- Public and penitentiary health systems are recommended to work together to ensure that harm reduction becomes the guiding principle of policy on preventing the transmission of HIV and hepatitis in penitentiary systems.
- Public and penitentiary health systems are recommended to work together to ensure that tuberculosis is detected early and is promptly and adequately treated and that transmission is prevented in penitentiary systems.
- State authorities, civil and penitentiary medical services, international organisations and the mass media are recommended to consolidate their efforts to develop and implement a complex approach to tackling the dual infection of tuberculosis and HIV.
- Governmental organisations, civil and penitentiary medical services and international organisations are recommended to promote their activities and consolidate their efforts to improve the quality of the psychological and psychiatric treatment provided to people who are imprisoned.
- Member States are recommended to work to improve prison conditions so that the minimum health requirements for light, air, space and nutrition are met.

Implications for prison management

The arguments so far in this chapter have related to the principles within which health care should be delivered in prison and the implications which this arrangement will have for health care staff and the delivery of health care. There is a further argument for having the best possible arrangements for delivering health care inside prisons. This is the potential benefit which it brings for prison management at different levels. Put simply, “a healthy prison is a safe prison”.

At an institutional level, the description ‘healthy prison’ will mean that the physical conditions in which prisoners are held are decent; that the living areas are not overcrowded, that the environment is clean; that there is sufficient air and light. These are factors which will contribute to a healthy environment in which prisoners can live and staff can work.

There will also be implications at an operational level in terms of improved security and safety. Most prisoners accept the fact of their imprisonment, albeit reluctantly, and get on with serving their sentence. However, there are a number of key issues which they will value highly and are likely to affect the way that they behave for better or for worse. One of these, for example, is the contact which they have with their close family. Another will invariably be a concern for their health. The health profile of prisoners is generally poor as a result of the life style which many prisoners may have lived before coming to prison. This condition is likely to be exacerbated by the nature of their imprisonment. Paradoxically, many will regard the time that they spend in prison as an opportunity to deal with chronic health problems. They will value highly the access which they have to medical, nursing and other health care staff. To a large extent health care is regarded as ‘neutral territory’, an area in which the personal humanity of prisoners is recognised and respected. The manner in which health care is administered becomes something of a touchstone for measuring decency. If prisoners consider that their health care needs are being properly met in an appropriate manner they are likely to be more amenable to the other restrictions of prison life. That is something which is in the interests of everyone concerned.

The Patient - Doctor Relationship and Medication

Catherine Ritter

Introduction

This chapter reflects on the place and role that medication can take during life in a closed setting. These multiple aspects (practical, ethical, sociological) are personal thoughts issued from experience. They have been at the centre of former daily practice as a prison doctor prescribing medication. They do not pretend to be the one truth, but to bring some insights into the largely unexplored issue in prison, even if medication constitutes a predominant part in their functioning and existence.

Some elements of this discussion are not limited to prisons. They are part of a general trend in medicine and the place that medication occupies in our economically developed societies, when one has to face personal difficulties or illness in life. Prisons are included in this broader reflection, since some of those aspects have to be consciously in the mind of prescribers, in order to avoid possible deviances that medication can signify in closed settings.

The power of prescription

Prescribing medication is one major and powerful act that remains largely reserved to doctors. Treatment is a main component of the medical practice, together with taking history, investigating symptoms and making diagnosis.

Medication is based on individual needs, and this has to remain. In prisons, rules in general apply uniformly to all, with little space for exceptions or individual adaptations. People are submitted to the same organisational functioning and structures that hardly tolerate exceptions (Goffman 1961). From the medical point of view, a prescription is made to relieve symptoms or cure a specific disease, following protocols that are adapted to the individuals' characteristics, such as co-medication, age and weight. Some conditions require fine-tuning to be exactly adapted to the personal needs, i.e.

diabetic treatment or oral substitution treatment for opioid dependence. In that sense, prescription can (and has to if it is indicated) contribute to some form of diversity in an environment that is rather depersonalising. Those differences in prescriptions, when known to detainees, have to be clearly explained, since they can sometimes be sources of misunderstandings and conflicts.

Delivering medication and protecting patients' interests

Traditionally, the medication that doctors prescribed is handed over by nurses in hospitals, in institutional care, and in prisons. However, mostly due to lack of qualified health staff, resources to finance them, or too small institutions to justify affording their proper health staff, this act is not uncommonly taken over by prison staff, even in high level income countries. This raises controversial and key issues in prison settings such as confidentiality of medical care, responsibility in case of accidents or mistakes in delivery, and absence of training of prison staff in health matters. Few institutions look closely and honestly at those aspects that are driven by field reality, although it is obvious that delivering medication relies legally on duly qualified health staff. The Academy of Swiss Medical Sciences has recently listed some conditions to be respected in the context of medication delivered by prison staff. In particular, the medicines have to be prescribed by doctors, and are delivered in a neutral form that respects patients' confidentiality. Prison staff has to ensure to deliver the medication to the correct person (some practical hint is to put a photograph of the detainee / patient figures on the medication disposal), and in case of doubt, has to refer to the doctor or the pharmacist in charge (ASSM 2012).

A safe delegated delivery includes trainings addressing issues such as types of medication, first aid procedures and common side effects or interactions. Well capacitated prison staff can be very helpful in detecting overdoses or serious side effects. Once more, one would prefer that health staff provides all services related to health, but in the field and keeping in mind the surveillance that prison staff ensures, the latter is usually in the first line. It is therefore justified to clarify the responsibilities and ensure a legally acceptable cooperation, give the means to staff to work in a safe environment, and to users to be provided with a service that protects them efficiently. A frequent question is: should prison staff be aware of what drug he is handing out to detainees? Understanding the pharmacokinetics, the interaction and additive

effect of substitution treatments and hypnotic medications such as benzodiazepine can only bring benefits, for example: identify intoxication or postpone a delivery of medicine that might intoxicate a person. Complete ignorance of medication delivered to the patients by prison staff is not without dangers, even if it respects medical confidentiality. It is more protective when the patients, prison staff and health professionals find ways to work together in a respectful attitude. This has to be defined according to patient's approval in the frame of institutional regulation, after a clear definition of responsibility and tasks of the various staff involved.

“Over the counter” access to medication

Access to medication itself is of importance in the prison environment. People in freedom have the possibility to purchase various drugs over the counter, a situation almost inexistent in prisons. This gives a high value to medicines, and prisoners have to get over various steps to get them. Either they pass through medical prescriptions, although some prisons have implemented models of first aid pharmacy that are handled by prison nurses or prison staff. In either case, they have to justify the importance of their complaint, of their symptoms to get hold of the medication. This dependence can be one reason why some detainees are hoarding tablets, in case they would need them one day, by feeling a common headache for example. This simple gesture is sometimes made difficult by the absence of privacy in cells shared by numerous prisoners, or prohibited by prisons' regulation. According to the proposed standards for patients' safety that have been defined for the prison environment, the medication possessed by detainees has to be clearly labelled with prescriber, medication name, strength, dose, frequency, number of pills or time frame, lot number, date dispensed, and expiration date (Stern et al. 2010).

First aid pharmacy is intended to alleviate medical delivery of drugs and accelerate this procedure. This is one model of delegating first aid care to prison staff who, in the best situations, are trained for a safe delivery of basic medication relieving pain. This needs clarification of the respective functions and responsibilities of the professionals involved, and a precise definition of the procedure.

Autonomy or control

A common thought in prison, is that prisoners are different patients than people in freedom, even though non-adherence to treatments is a constant preoccupation in the general community since it is a core subject to many chronic diseases (Centers for Disease Control and Prevention 2012). Non- or partial adherence can have negative consequences on individuals (in conditions such as diabetes, cardiovascular disease or asthma for example), but also collectively, and public health consequences with regards to infectious or communicable diseases, such as HIV or tuberculosis (e.g. non-adherence can increase the risk of transmission, induce resistance with further difficulties in the treatments, etc.).

Prisons can improve medication adherence, in particular in well-staffed services where the patient take their medication consistently. This improvement in the regular absorption can even have some adverse effect that put the patient at risk. For example in drug users taking methadone maintenance treatment, the fact that adherence is often partial before the incarceration implies a reduction of dosages, to protect them from potential toxicity (Westra et al. 2009).

Detainees are qualified with negative preconceived ideas such as lower adherence or diversion of their treatment. Often, prison health staff responds to this by increasing controlling, either by supervising the administration of the medication or by searching its metabolite in urine. The need for protecting from erroneous administration is real, but this security is justifying a whole procedure of close controlling (Goffman 1961), that is impeding people to develop their own responsible care. This health competency, part of the broader aim of empowerment in health care can and must be trained, as it is necessary to health promotion in general, and prepares the detainee for life in freedom (Ritter 2006). In some institutions, a the thorough controlling of medications produces dependence, and lack of responsibility by patients – even referred to as “infantilisation” (Jaeger and Monceau 1996). This approach should be considered carefully, and when possible, avoided. The aim should rather be to tailor services that favour the empowerment for individual needs. Such an approach raises dilemmas and is limited by the necessity to serve a mass of people (lack of time, need for cost-effective ways to serve most users) or the need for strong control to avoid overdoses or diversion of treatment for example (Frank and Bjerger 2011). At least, the control has to be progressively relieved, and the means for empowerment imple-

mented when people are approaching freedom, in order for them to prepare to take over again the responsibility regarding health that is theirs, but that staff has assumed in a greater proportion during incarceration.

Prisons are generally not recognised as environments that favour responsibility and behavioural changes, by their structures and functioning. They create a form of passivity, which is at the other end of the individual move towards changing. Detainees are viewed as people who give up the responsibility of care to medical staff and expecting medication from them, as one nurse said in the context of a qualitative component of a study addressing tobacco use in Swiss prisons in 2010:

It is just a pity that here inside they so tightly tend to give up their responsibilities, thus: "I need a drug and then you make sure that I no longer smoke."

The way of asking help is described in the following sentence: "They seek help as in the sense of: "turn that off me."..."You make sure now, to take that away from me."...With drugs."

The attitude of "handing over" the responsibility has been reported to be favoured by the institution:

"In institutions such as this, where so much personal responsibility of the people is taken away...in this narrow environment, the self-determination of the masses is cut back, and they may at some time come to the point to give up the self-determination, self-responsibility."

In that context, one can make the hypotheses that medication takes a further value; it is invested with hope or even magical thoughts, added to the proper effect of the medication.

Medication as mediator between illness, doctor and patient

Sickness is a way to ask for help in the form of an individual expression. The corresponding prescription should remain part of a broad follow-up of patients, and not become the single act of caring of people. In any case, the medication has to be adapted specifically to the needs of the person.

Medication itself can be considered under its proper pharmacological effect, but it is usually presenting further functions, i.e. "*latent functions*" that can symbolise (among others) the illness of the patient, his needs for attention or the power of medicine (Helman 2007). Furthermore, medication is taking different senses depending on the cultural background of the patient. Those can

sometimes be difficult to clarify in particular when health staff does not master the language and translation is unavailable. This aspect is considered in the proposed standards for patients' safety in the prison environment that states that written information on medication should be available also to non English-speaking detainees (Stern et al. 2010).

Function of medication: symptom relief

When one hears a patient complaining or presenting a specific symptom, one wishes to relieve it. First, this is not always possible. Then one has to ask if it has to be automatically that way? Must symptoms that patients present systematically and always be released? Symptoms are usually not agreeable, but they are not necessarily related to a disease that needs curing. They might be ways to translate a situation in a form that cannot be said in another language.

Doctors must listen to what might be told behind the symptom. This is the opportunity to allow an individual to get a better knowledge of himself, of defining the sense of his suffering or disease along with his personal history of life (Gori and Del Vogo 2009).

Such an approach is more difficult than prescribing medication, it requires human resources, time and psychotherapeutic competences. It has been reported to be more expensive (Jaeger and Monceau 1996).

On the other hand, one still common belief or expectation on patient's side is that the medication alone will cure. Some patients are reluctant to discuss other aspects of their life than their proper demand for medication, such as sleeping tablets or painkillers. Nevertheless, doctors should neither follow, nor encourage this "magical" thought blindly. Rather they should help patients to understand what this symptom might reveal about themselves.

When faced with a disease or health behaviour known to be damaging on the more or less long term (i.e. smoking, unprotected sexual relations), people should have a large choice of ways to avoid the negative consequences of their behaviour or make decisions towards changes. Among those choices, some will mobilise more energy, will involve deeper changes than taking medication. At the same time, the latter itself cannot be qualified as simple since some medications are due to be taken on the long term with further questioning on adherence.

When one individual is suffering (physically or psychologically), various ways are usually available to relieve it, but in prisons an important part of the intervention relies on medication, even though it is known that occupational activities or psychotherapy would be of great benefit. To face stress related symptoms or insomnia for example, doctors cannot work isolated on their side and prescribe solely medication. They need to be part of a broader team reflecting and developing health promotion in prisons.

Treating individual people and the institution

It is a general duty to concentrate efforts toward equivalency and equity of care in prisons. And unfortunately the aims in that sense have still not reached their goals so far, even for diseases where treatments are paramount and should be accessible without restraint (i.e. tuberculosis, HIV, hepatitis C, diabetes, drug dependency). For those medications the aim is to increase access and safe delivery in an ethical frame of care. The functions of other medications need however further questioning, in particular that of psychotropic drugs.

Psychotropic medication

Again, faced with complaints of insomnia or anxiety, and nervousness, the doctor is inclined to relief the symptoms. Various points have to be considered along that procedure, since prescription of hypnotic drugs is more frequent among prisoners than a comparable group of patients in the general community (Elger et al. 2002).

The long term consequences for short-term relief

A recent study has shown that the prescription of hypnotic drugs for sleep disturbance was associated with an increased incidence of cancer and risk of mortality (Kripke et al. 2012). On the other hand, no evidence justifying a complete absence of prescribing benzodiazepines in prisons for insomnia has been reported (Elger 2008).

The increase of occasions for human contact in general medicine

More frequent consultations and brief interventions can reduce chronic use of benzodiazepines (Cormack et al. 1994, Bashir et al. 1994, Strang et al. 2012).

Psychotropic medication is influenced by and has consequences on the environment

Prescribing medication to individuals is supporting the existence of the whole prison system, since hypnotic medication represents a support for imprisonment, as it has been described in France. Some structural components of closed settings can increase their demand (i.e. overcrowding, bad news, uncertainty related to the penal situation), or on the contrary decrease it (occupational and working possibilities, intensive physical activity) (Jaeger and Monceau 1996).

Neuro-enhancement

Psychotropic medication can also adopt a form of neuro-enhancement (non-therapeutic use of psychotropic medications) (Steering Group Challenge of Addiction 2010) to increase one's mental wellbeing that results in a greater capacity to 'survive' the period of incarceration.

Influence on social relationships

Psychotropic drugs have been described as a way to control social relationships. The behaviour is modified in order to conform to social norms (Helman 2007). This is of particular importance in the environment of prisons, where people frequently have come because of some degree of lack or inappropriateness in those norms.

Finding a right balance

If one considers that the human being can improve through personal difficulties in life (and the incarceration in that particular context), then he has to be supported and accompanied in that sense, since being confronted to personal difficulties and anxiety might be too traumatising also. Medication might be necessary, but prevailing that people are not "driven away" from themselves. This must be openly discussed with the patient, in order to facilitate the decision of prescribing or not a medication. There is a delicate balance to find between providing adequate access to care and relief of individual suffering that at the same time is letting the people having enough energy and creativity to go through that experience of imprisonment. For this, there is a need of time, well capacitated professionals with various competences and structural changes in the institution, that allow to handle suffering with other means than medication only. By prescribing medication in an isolated way, and not

providing other means of solving personal problems, or not encouraging people to get along with those other means, doctors and prisons reinforce the model of dealing with difficulties that is taking drugs without being confronted to oneself of ones' personal problems (Helman 2007). A common image during the medical consultation around hypnotic drug prescription is that of a "crutches": they are necessary to relieve pain and support the walking process after a fracture or accident, but after some time, individuals have to learn to live without them, in order to be free and able to run again...health staff should promote the development of those competences, not reinforce the one of taking medication only.

Conclusion

Those various elements related here show how complex and central the place medication is occupying in the prison environment. Thus, pharmaceutical response occupies an important part in issues that could be dealt with differently, in particular by developing much more human based approaches such as careful listening in a general medical consultation with reasonable time for it, psychotherapy and structural modifications to the environment. In closed settings, even more than outside, when faced with difficulties created by social and structural factors or personal history, one expects resolution from medication. It is however no more than palliative. Other ways, complementary or substituting medication have to be thought about, with the source causing the need for medication being tackled as such also. Then, empathy does not rely solely on health staff; this human richness should be a common attitude of prison staff as a whole.

Imprisonment is a particular experience of life in a human being's life and his family. Health staff is involved in accompanying this process, and this can be done in different ways, depending on health professional's background, training and possibilities to develop in institutions where they are sometimes hardly tolerated. Health staff should have other means than prescribing medication to support their patients, and as in the society as a whole, the response cannot come from the medical science in isolated and rational ways.

References

- ASSM 2012. Annexe aux directives médico-éthiques «Exercice de la médecine auprès de personnes détenues» Conseils pratiques relatifs à l'application des directives. <http://www.samw.ch/fr/Ethique/Directives/actualite.html>. Accessed 5. March 2012
- Bashir, K., King, M. & Ashworth, M. 1994. Controlled evaluation of brief intervention by general practitioners to reduce chronic use of benzodiazepines. *Br J Gen Pract*, 44, 408-12.
- Centers for Disease Control and Prevention 2012. Living Well with Chronic Illness: A Call for Public Health Action. *MMWR*, 61(17), 312.
- Cormack, M. A., Sweeney, K. G., Hughes-Jones, H. & Foot, G. A. 1994. Evaluation of an easy, cost-effective strategy for cutting benzodiazepine use in general practice. *Br J Gen Pract*, 44, 5-8.
- Elger, B. S. 2008. Prisoners' insomnia: to treat or not to treat? Medical decision-making in places of detention. *Med Sci Law*, 48, 307-16.
- Elger, B. S., Goehring, C., Revaz, S. A. & Morabia, A. 2002. Prescription of hypnotics and tranquilisers at the Geneva prison's outpatient service in comparison to an urban outpatient medical service. *Soz Präventivmed*, 47, 39-43.
- Frank, V. A. & Bjerge, B. 2011. Empowerment in drug treatment: Dilemmas in implementing policy in welfare institutions. *Social Science and Medicine*, 73, 201-208.
- Goffman, E. 1961. *Asylums*, Garden City, NY: Anchor Books.
- Gori, R. & Del Vogo, M. 2009. *La santé totalitaire Essai sur la médicalisation de l'existence*. Flammarion "Champs". ISBN: 978-2-0812-2488-9.
- Helman, C. G. 2007. *Culture, health and illness*, London : Hodder Arnold, 2007.
- Jaeger, M. & Monceau, M. 1996. *La consommation des médicaments psychotropes en prison*. Erès. ISBN: 2-86586-407-3
- Kripke, D. F., Langer, R. D. & Kline, L. E. 2012. Hypnotics' association with mortality or cancer: a matched cohort study. *BMJ Open*, 2, e000850. Epub Date 2012/03/01
- Ritter, C. 2006. L'apport de l'éducation pour la santé à la promotion de la santé en milieu carcéral : description d'un modèle pédagogique. In:

- Bertrand, D. & Niveau, G. (eds.) *Médecine, santé et prison*. Geneva: Médecine & Hygiène.
- Steering Group Challenge of Addiction 2010. The Challenge of Addiction – Long version. Foundations for a Future Oriented Policy on Addiction in Switzerland. Available at <http://www.bag.admin.ch/shop/00010/00506/index.html?lang=en>. Accessed 31. July 2012
- Stern, M. F., Greifinger, R. B. & Mellow, J. 2010. Patient safety: moving the bar in prison health care standards. *Am J Public Health*, 100, 2103-10.
- Strang, J., Babor, T., Caulkins, J., Fischer, B., Foxcroft, D. & Humphreys, K. 2012. Drug policy and the public good: evidence for effective interventions. *Lancet*, 379, 71-83.
- Westra, M., De Haan, H. A., Arends, M. T., van Everdingen, J. J. & Klazinga, N. S. 2009. Guideline 'Medicinal care for drug addicts in penal institutions'. *Nederlands tijdschrift voor geneeskunde*, 153, A726.

The Doctor - Patient Relationship – Ethical Prescribing

Hans Wolff, Alejandra Casillas, Jean-Pierre Rieder, Laurent Gétaz

Introduction

A trusting doctor-patient relationship is central in clinical medicine. The partnership is particularly important when caring for vulnerable populations. It is critical not only to the patient, but also to the physician and his/her management goals, and especially important for the public health of the community as a whole. The doctor-patient relationship is put under pressure within the detention setting; mutual understanding between patient and physician is made challenging secondary to language and cultural barriers with allophone patients (without knowledge of the local language), conflicts of dual loyalty and administrative and financial restrictions of health care providers – all of which may contribute to low quality health care in prison.

This chapter reviews medical management and drug prescription by health providers for patients in custody, in the light of the following biomedical ethics principles:

1. autonomy
2. non-maleficence
3. beneficence, and
4. justice.

These parameters are then incorporated into the seven fundamental principles of prison health care which we discuss here:

1. access to a doctor
2. equivalence of care
3. patient consent and confidentiality
4. preventive health care
5. humanitarian assistance
6. professional independence, and
7. professional competencies.

Non-adherence to these principles is a barrier to a good doctor-patient relationship and leads to low quality health care in this setting. Unfortunately, most detention centres do not totally abide by these fundamental principles, even when these should be incorporated into national policies, and international professional practice instruments.

Prison detainees represent an underserved, vulnerable population. They frequently have limited access to healthcare due to social and economic disadvantages, family dysfunction, high rates of school exclusion, and lack of appropriate support in the early years of life. (Binswanger, Krueger, & Steiner 2009; Condon, Gill, & Harris 2007; Harris, Hek, & Condon 2007; Watson, Stimpson, & Hostick 2004) The accumulation of these negative social determinants of health explains in part why detainees have such a high burden of disease. (Binswanger, Krueger, & Steiner 2009; Fazel & Baillargeon 2011; Marmot 2006; Wolff et al. 2011; World Health Organization (WHO) 2003) This disadvantage continues even after release into the community. One study found that the risk of death among former inmates was 12.7 times higher than that of non-incarcerated residents during the first two weeks after release, with a markedly elevated relative risk of death from drug overdose. (Binswanger et al. 2007)

The detention setting has been identified as a significant opportunity to address the health needs of vulnerable groups. Modern prison health services should aim to reduce inequalities by providing a range and quality of health care equivalent to that available in the community, according to the principles outlined by the Council of Europe. (Council of Europe 1998)

Doctor-patient relationship in custody

Physicians must aim “to help and do no harm”; this was Hippocrates’s essential message when he developed the theory around the inevitable link between clinical care and ethical duty in the 3rd century BC. The Hippocratic work *On the Physician* recommends that physicians always be “well-kempt, honest, calm, understanding, and serious”. (Wikipedia 2012)

Until the second half of the twentieth century, the doctor-patient relationship was dominated by a paternalistic model of health care delivery, comparable to an adult-child relationship in which doctors decide what they think is best for the patient. (Goold & Lipkin 1999) Today, a model of shared decision making is predominant, meaning that the physician provides the necessary

information, allowing the patient to make his/her own decision and thus achieve autonomy in the management of his/her own health. (Goold & Lipkin 1999)

The doctor-patient relationship is always a delicate balance, particularly if the physician and the patient are of different ages, sexes or come from different socio-cultural backgrounds. All these factors may render communication more challenging. (Strous, Ulman, & Kotler 2006) The relationship, which ideally consists of two partners meeting at the same level, may develop into one where one partner possesses the medical knowledge (doctor) and the other (patient) feels incompetent and obeys whatever the knowledge-holder wants. This is particularly true in the context of institutionalization or, as described by Goffman: a “total institution”. (Goffman 1961) Prisons are considered as total institutions because they disrupt the barriers that usually separate the main spheres of life (sleep, eat, play and work). As well, the total institution (prison) organizes all detailed aspects of daily living for its inmates, generally in a bureaucratic manner, and carried out in the company of a large group of individuals, companions who were not chosen by the inmate. (Goffman 1961) Such settings may seriously harm the personality of the inmates and lead to the loss of self-identity and the feeling that time spent in custody is wasted time.

Within such a difficult context, health services play an even more important role for these patients. A trusting doctor-patient relationship is critical not only for the patient, but also for the satisfaction of the treating physician, and even for the community as a whole. In the custodial setting, this relationship is under pressure for several reasons. For example, in pre-trial environments where many detainees are of foreign origin, mutual understanding is complicated by language and cultural barriers. Furthermore, conflicts of dual loyalty as well as administrative and financial restrictions worsen quality of health care in custody. (Pont, Stover, & Wolff 2012; Strous, Ulman, & Kotler 2006) Providers of health care within these vulnerable contexts need to integrate elements of ethical reflection and questioning into their daily work, specifically in relation to drug prescription and medical management.

Principles of biomedical ethics and treatment in custody

Four key ethical principles are generally used to guide bioethical decision-making. (Beauchamp & Childress 2008):

Autonomy

Abiding by the principle of autonomy is a cornerstone in medical decision-making. (Gillon 2003) As a minimum this requires the ability of the patient to make decisions independent of outside pressures, and to understand the indications and risks of treatment, in order to make the most meaningful choice. A prerequisite for autonomous decision making is for the individual to display the capacity to receive, retain and repeat the information that is given to them. The information must be complete and communicated in a manner in which they can understand. An autonomous decision should never be overruled by a health care provider.

Beneficence

The term beneficence connotes an act of mercy, kindness or charity, and is understood to include all forms of action intended to benefit or promote the good of other persons. The duty to do “good” is central to the role of health care professionals. It is the health care professionals who actively seek out the most appropriate treatment for the patient and need to update their medical knowledge in order to find the most effective therapy for the patient.

Non-maleficence

Primum non nocere – “first do no harm”, encompasses the principle of non-maleficence. Medications can have dangerous side effects, and for some patients, these effects may prove fatal. A careful risk-benefit analysis needs to be developed for every prescription. Each prescriber should thoughtfully consider the potential positive and negative effects that the prescribed medication may have. Such as is done with medical practice outside the detention setting, the physician should deliver professional and competent service through evidence-based practice.

Justice

Justice refers to the distribution of material objects and the role/position of people within society. In a medical setting, justice translates into the allocation of health-care resources in a fair way. This may be an equal distribution (egalitarianism) or a maximization of the total or average welfare across the whole society (utilitarianism). (Nortvedt et al. 2008) Fairness, however, requires re-

straint on the part of those who would take more than their fair share. When medication budgets are limited, the issue of justice towards patients is an important and controversial one. Just distribution of medications may be threatened by the perceived scarcity of resources in the prison setting. However, these monetary issues are often outside the scope of the doctor’s control.

These four bioethical principles are considered essential elements in clinical medicine. They were integrated into the seven fundamental principles of health care in custody by the council of Europe and the European Committee for the Prevention of Torture and Inhuman or Degrading Treatment or Punishment (CPT). (Beauchamp & Childress 2008, Council of Europe 1998, Council of Europe 2006, European Committee for the Prevention of Torture and Inhuman or Degrading Treatment or Punishment (CPT) 2006, Gillon 2003):

Tab. 1 Fundamental principles for health care in custody

Access to a doctor	The detained person shall have unrestricted access to medical care, without discrimination in regards to their legal situation
Equivalence of care	Medical care in prison should be equivalent to that provided to the general population in the same region
Patient consent and confidentiality	The detained person must give informed consent prior to treatment and patient confidentiality must be strictly observed
Preventive health care	The detainee has the right to health education and preventive health measures
Humanitarian assistance	Vulnerable groups in custody such as women, older inmates, and ethnic or cultural minorities need protection and assistance by health professionals
Professional independence	Health professionals who are in charge of a detained person must be able to treat their patient independently of the judicial and prison hierarchies that govern the institution
Professional competence	Health professionals in charge of a detained person must have professional competence and training

Source: (European Committee for the Prevention of Torture and Inhuman or Degrading Treatment or Punishment (CPT) 2006)

The Penal Reform International delineates this pre-condition in the following way: “Confidence of prisoners in the health care of a prison can only be obtained if it is known to everyone in the prison that for a prison physician, nurse or health care worker, the patient has to have, and indeed has priority

over order, discipline or any other interests in the prison.” (Penal Reform International 2001)

Barriers for ethical treatment in custody

Today, physicians aim to provide competent care to the patient, preserve confidentiality and communicate honestly and compassionately. So, which are the barriers against the application of these virtues and fundamental principles when working in a detention setting?

Cost, lack of independence and dual loyalty

Generally, prison doctors are employed by judicial or penitentiary authorities. These governing individuals sometimes place pressure on the physician to limit patient use of expensive treatments. This is particularly true in the case of hepatitis C therapy, a proven cost-effective therapy for a frequent problem in custody (up to 30-40% of detainees have hepatitis C) (Fazel & Baillargeon 2011; Tan, Joseph, & Saab 2008) Depending on the genotype, medication costs for one patient can reach up towards \$75,000 which strains the medication budget of detention centres. Even if such treatment is medically indicated (and as such, care should be given to the patient according to the principle of equivalence) and would theoretically be reimbursed by any basic health insurance, the prison doctor’s decision about treatment could still be influenced by cost. If doctors are employed directly by prison authorities, they find themselves in a conflict of dual loyalty: should he/she be solely loyal to the patient (as he/she should be) and prescribe the treatment despite the expenses, or should there be a loyalty to the employer (the prison or justice administration) by giving considerations to the medication budget and withholding certain treatments?

Lack of autonomy

No autonomous choice of the health care provider

Autonomy is generally limited in prison and from the ethical point of view, one can of course question whether an imprisoned patient, who generally does not have the choice of healthcare provider, is really autonomous in his/her decision to follow the therapeutic advice of a physician he/she did not

select. In general, detainees simply do not have this choice. Particularly in small detention centres where one may find only one single general practitioner, this limitation further limits autonomy within the doctor-patient relationship. As a consequence, the quality of health care as well as the public health security of the whole detention centre and the surrounding environment is threatened.

No self-medication

Detainees have high morbidity, and so many drugs must be prescribed to these patients while in custody. (Fazel & Baillargeon 2011; Wolff, Sebo, Haller, Eytan, Niveau, Bertrand, Getaz, & Cerutti 2011) Given provider caution against drug accumulation/abuse/overdose (particularly of psychotropic and analgesic drugs), self-medication is usually forbidden in detention. Prisoners therefore have few opportunities to resort to self-care and are more likely to request medical help even for simple complaints. (Marshall, Simpson, & Stevens 2001)

Lack of confidentiality

Confidentiality problems frequently arise in detention. Health professionals guard confidential and sometimes troubling information, about their patients, and prison authorities may put inappropriate pressure on providers to reveal this information. In terms of confidentiality about patient diagnoses, some treatments and/or disease presentations may make it rather simple, even for a lay person, to figure out the diagnosis (e.g. medication for HIV or other viral infectious diseases). Also, when prison officers distribute drugs, this potentially damages a trustful doctor-patient relationship. Patients might withhold important information from providers for fear of being stigmatized by prison officers, other prisoners, and anyone else in the prison setting because of their illness.

Language problems

Language barriers are associated with worse quality of care and lower patient satisfaction. (Flores 2005) Furthermore, health care providers overestimate their self-assessed competency in working with an interpreter. (Hudelson et al. 2012) Detention centres, particularly in pre-trial detention, have a high burden of allophone patients. For example, in Geneva, Switzerland, 92% of

the inmates were of foreign origin in 2007, with more than hundred different nationalities. (Wolff, Sebo, Haller, Eytan, Niveau, Bertrand, Getaz, & Cerutti 2011) Therefore it is disconcerting to observe that professional translation services are not available in the majority of detention centers, even in the richest countries.

Medical knowledge and training

Health care providers in detention centres need specific training competencies in therapies addressing clinical complaints in infectious disease, addiction medicine, psychiatry and other common problems in primary care (skin, musculoskeletal, trauma/injury, digestive, respiratory issues). (Fazel & Bailargeon 2011; Wolff, Sebo, Haller, Eytan, Niveau, Bertrand, Getaz, & Cerutti 2011)

Most countries lack a training curriculum which addresses the specifics of providing health care for patients while in institutional detention. In some countries, particularly where the stewardship of prison health care is under the auspices of the Ministry of Justice, postgraduate training is not mandatory for physicians who work in custody. Furthermore, in those settings, public health strategies and improvements are less connected with health services in detention. Because of this fragmentation, continuity of care before and after imprisonment deteriorates. (Hayton, Gatherer, & Fraser 2010)

Equality of Care

Disparities in health service access have important therapeutic consequences. For example, opiate substitution therapy (OST) is available worldwide in 77 countries, but this is offered in the prisons of only 41 of these countries. (Harm Reduction International 2012) It is also crucial to note that the presence of OST in prison in one country does not translate to its availability in every detention centre of that country. The situation is even more dramatic concerning needle and syringe exchange programs (NSP). While this strategy is available worldwide in 86 countries, only 10 of these countries permit the program in detention settings. (Harm Reduction International 2012) Furthermore countries with NSP in detention rarely disseminate the service broadly: for example, although Germany counts as one of the countries with NSP in prison, the service exists in only one institution.

Solutions

Health care in custody is complex, and health services in these settings need to be better prioritized by governments all over the world. As explained in this summary, the seven fundamental principles of prison health care (see Table 1) should be included in the legislations of every country. Measures should be taken to ensure strict adherence to these guidelines. Ignoring these principles or unawareness of their importance is a barrier to the trustful doctor-patient relationship – an aspect of health which is at the core of achieving high quality medical care for patients detained in prison.

Confidentiality needs to be respected, and prescription and distribution of drugs must be organized in a confidential manner only involving professionals who are health care providers or part of the health care management team (nurses, pharmacists, physicians, etc.).

Communication and partnering with allophone patients can be improved by augmenting the availability of trained professional interpreters. It has been shown that the use of professional interpreters helps to reduce medical errors and facilitates doctor-patient understanding. This has favourable impact upon service utilization, clinical outcomes and patient satisfaction. (Karliner et al. 2007). Better communication will lead to a better doctor-patient relationship, which is crucial to the better health of patients in detention.

Furthermore, health care centres in prison need to be better integrated into national and international public health strategies. When prison health care centres are well-functioning and well-connected, they provide important opportunities to reach hard-to-reach populations, (e.g. drug users who have high morbidity and mortality). Equivalence of care must be provided for. Health care policies making recommendations for prison health prevention and treatment (or barring against such services) will have an enormous impact on the public's health and also on the health care resources of the general community.

Finally, a crucial point relates to the stewardship of prison health centres. In order to achieve the principles outlined in this review, it is recommended that stewardship be transferred from the Ministry of Justice to the Ministry of Health. Some example countries of this independence of health care in detention are Norway, France, New South Wales in Australia, England and Wales in the United Kingdom, and Geneva, Vaud and Valais in Switzerland. The 2012 Geneva Declaration on prison health care suggests a 3-step

approach in order to achieve the goal of professional independence. (6th European Conference on Health Promotion in Prison 2012)

Expand training and available information, particularly in the fields of medical law and ethics, of all personnel involved in prison health issues, to:

- Better identify situations of dual loyalty and therefore improve care management with the best interests of the patient in mind, not the institution's.
- Clarify roles and missions of all professional bodies working in the prison towards patient health, in order to foster mutual respect.
- Strengthen the involvement of supervising health care authorities, professional societies and medical ethics committees.
- Separate judicial and penitentiary tasks from health care issues; place the latter under the sole responsibility of the health authority.

Conclusion

Health care in custody and particularly the doctor-patient relationship is put under pressure within the detention setting. The prescription process is directly affected by the way how countries organize health care in custody. Respect of the seven fundamental principles of prison health care should be incorporated into national policies, worldwide, with the aim to improve respect of human rights among a particularly vulnerable population.

References

- 6th European Conference on Health Promotion in Prison. Geneva Declaration on Health Care in Prison. <http://ump.hug-ge.ch/> . 2012.
- Beauchamp, T. L. & Childress, J. F. 2008, *Principles of Biomedical Ethics*, 6th edn, Oxford University Press, New York.
- Binswanger, I. A., Krueger, P. M., & Steiner, J. F. 2009, "Prevalence of chronic medical conditions among jail and prison inmates in the USA compared with the general population", *J. Epidemiol Comm Health*, vol. 63, no. 11, pp. 912-919.
- Binswanger, I. A., Stern, M. F., Deyo, R. A., Heagerty, P. J., Cheadle, A., Elmore, J. G., & Koepsell, T. D. 2007, "Release from prison--a high

- risk of death for former inmates", *N Engl J Med.*, vol. 356, no. 2, pp. 157-165.
- Condon, L., Gill, H., & Harris, F. 2007, "A review of prison health and its implications for primary care nursing in England and Wales: the research evidence", *J Clint Nurs.*, vol. 16, no. 7, pp. 1201-1209.
- Council of Europe. Recommendation R (98). <https://wcd.coe.int/com.instranet.InstraServlet?command=com.instranet.CmdBlobGet&InstranetImage=530653&SecMode=1&DocId=459562&Usage=2> . 8-4-1998.
- Council of Europe. Recommendation Rec (2006) 2 of the Committee of Ministers to the Member States on the European Prison Rules. <https://wcd.coe.int/ViewDoc.jsp?id=955747> . 2006.
- European Committee for the Prevention of Torture and Inhuman or Degrading Treatment or Punishment (CPT). The CPT standards. <http://www.cpt.coe.int/en/documents/eng-standards-prn.pdf> . 2006.
- Fazel, S. & Baillargeon, J. 2011, "The health of prisoners", *Lancet*, vol. 377, no. 9769, pp. 956-965.
- Flores, G. 2005, "The impact of medical interpreter services on the quality of health care: A systematic review", *Medical Care Research and Review*, vol. 62, no. 3, pp. 255-299.
- Gillon, R. 2003, "Ethics needs principles – four can encompass the rest – and respect for autonomy should be "first among equals"", *Journal of Medical Ethics*, vol. 29, no. 5, pp. 307-312.
- Goffman, E. 1961, *Asylums: essays on the social situation of mental patients and other inmates*, Anchor Books edn, Anchor Books.
- Goold, S. D. & Lipkin, M. 1999, "The doctor-patient relationship – Challenges, opportunities, and strategies", *Journal of General Internal Medicine*, vol. 14, p. S26-S33.
- Harm Reduction International. The Global State of Harm Reduction 2012. http://www.ihra.net/files/2012/07/24/GlobalState2012_Web.pdf . 2012.
- Harris, F., Hek, G., & Condon, L. 2007, "Health needs of prisoners in England and Wales: the implications for prison healthcare of gender, age and ethnicity", *Health Soc Care Community*, vol. 15, no. 1, pp. 56-66.

- Hayton, P., Gatherer, A., & Fraser, A. 2010, *PATIENT OR PRISONER: Does it matter which Government Ministry is responsible for the health of prisoners?*
- Hudelson, P., Perneger, T., Kolly, V., & Perron, N. J. 2012, "Self-Assessed Competency at Working with a Medical Interpreter Is Not Associated with Knowledge of Good Practice", *Plos One*, vol. 7, no. 6.
- Karliner, L. S., Jacobs, E. A., Chen, A. H., & Mutha, S. 2007, "Do professional interpreters improve clinical care for patients with limited English proficiency? A systematic review of the literature", *Health Services Research*, vol. 42, no. 2, pp. 727-754.
- Marmot, M. G. 2006, "Status syndrome: a challenge to medicine", *JAMA: The Journal of the American Medical Association*, vol. 295, no. 11, pp. 1304-1307.
- Marshall, T., Simpson, S., & Stevens, A. 2001, "Use of health services by prison inmates: comparisons with the community", *J. Epidemiol. Community Health*, vol. 55, no. 5, pp. 364-365.
- Nortvedt, P., Pedersen, R., Grothe, K. H., Nordhaug, M., Kirkevold, M., Slettebo, A., Brinchmann, B. S., & Andersen, B. 2008, "Clinical prioritisations of healthcare for the aged – professional roles", *Journal of Medical Ethics*, vol. 34, no. 5, pp. 332-335.
- Penal Reform International. Making standards work: an international handbook on good prison practice. <http://www.penalreform.org/files/man-2001-making-standards-work-en.pdf>, 70. 2001.
- Pont, J., Stöver, H., & Wolff, H. 2012, "Dual Loyalty in Prison Health Care", *American Journal of Public Health*, vol. 102, no. 3, pp. 475-480.
- Strous, R. D., Ulman, A. M., & Kotler, M. 2006, "The hateful patient revisited: Relevance for 21st century medicine", *European Journal of Internal Medicine*, vol. 17, no. 6, pp. 387-393.
- Tan, J. A., Joseph, T. A., & Saab, S. 2008, "Treating hepatitis C in the prison population is cost-saving", *Hepatology*, vol. 48, no. 5, pp. 1387-1395.
- Watson, R., Stimpson, A., & Hostick, T. 2004, "Prison health care: a review of the literature", *Int J.Nurs.Stud.*, vol. 41, no. 2, pp. 119-128.
- Wikipedia. Hippocrates. <http://en.wikipedia.org/wiki/Hippocrates> . 2012.

Wolff, H., Sebo, P., Haller, D. M., Eytan, A., Niveau, G., Bertrand, D., Getaz, L., & Cerutti, B. 2011, "Health problems among detainees in Switzerland: a study using the ICPC-2 classification", *BMC.Public Health*, vol. 11.

World Health Organization (WHO) 2003, *Social Determinants of Health: The Solid Facts*.

Illicit and Licit Drugs in Prisons – a Case Study from Denmark

Torsten Kolind

Introduction

Over the last 15 years we have seen some relatively marked changes in Danish prison drug policy and practice.

Drug treatment in prisons has increased markedly. Today, an estimated 15–20% of all inmates are enrolled in some kind of drug treatment program (DfK 2011). For instance, the following options are available: substitution treatment, cannabis treatment, cocaine treatment, motivational programmes, detoxification units, drug treatment wings, and contract wings (Kolind, Frank et al. 2010). This is a tendency seen in other European prisons with a growth in terms of capacity, in relation to various target groups and treatment objectives and in terms of programme variety (EMCDDA 2008), and it is in line with EU and WHO policy recommendations (Møller, Stöver et al. 2007; EMCDDA 2010: 37).

The growth in prison drug treatment in Denmark is a consequence of a deliberate policy (Kolind, Dahl et al. 2012) and among other things strongly relates to the implementation by law in 2007 of a drug treatment guarantee in prisons implying the right to psychosocial drug treatment (excluding substitution treatment) within 14 days of applying for treatment. The guarantee supplements a treatment guarantee in community based treatment since 2004 (Pedersen and Nielsen 2007). Generally, inmates and counsellors appreciate the many drug treatment offers. Often however, the aim of the treatment moves from regular drug treatment towards mainly alleviating the actual pains of imprisonment (Kolind 2010). Moreover, inmates' motivation for starting treatment primarily relates to the actual social context in the prisons, for instance: drug debts, the chance of serving under more lenient conditions, and pressure from family members (Frank, Dahl et al. 2011). Also, prison

drug treatment both in Denmark and elsewhere still face problems with for instance, negative attitudes of officers, lack of anonymity, and a counterproductive inmate culture (Craig 2004, Neale and Saville 2004, Carlin 2005, Frank and Kolind 2008).

In the same period, there has been a marked increase in drug control and related disciplinary sanctions in Danish prisons, again as part of deliberate policy, as for instance seen in the two recent governmental drug political action plans termed *Fight against drugs* (Regeringen 2003, 2010). This tendency is also part of a more general political trend in the Nordic countries (Kolind et al. n.d). The tightened drug control measures have among other things included: better fence systems, new technology, more sniffer dogs, and most important, since 2004, the introduction of mandatory random urine tests on 2% of the inmates. Positive test results as well as any detection of possession of drugs is met with fines, offenders will be placed in the disciplinary cell, and weekend leave will be temporarily suspended, as well as parole will be withdrawn; inmates are normally paroled after serving 2/3 of their sentence. Such increased disciplinary sanctions and prolonged incarceration for drug users is also documented elsewhere (Shewan, Stöver et al. 2008).

The previous Danish government stressed that this strengthened control policy among other things would motivate more inmates to start drug treatment, which partly seems to be the case. Also, the increased control has, according to the Danish Prison Service's documentation, resulted in a decrease in drug use in prison. From 2004 to 2006 positive drug tests decreased from 17% to 12% and cannabis positive tests decreased from 13% to 9% (DfK 2006). However, officers also report that the increased control and strengthened disciplinary sanctions has resulted in a tougher prison environment, related to drug selling and debt (Kolind, Dahl et al. 2010). And more generally, the daily prison routine has in many respects become more and more dictated by drug-dependent inmates and drug-related problems (see also: Stöver and Weilandt 2007). Furthermore, the decrease in drug use in prisons does not mean that fewer drug users are incarcerated. Since 2001, the number of incarcerated drug users has remained relatively stable: approximately 60% report an illegal use of drugs and/or problematic use of alcohol 30 day prior to imprisonment (Kramp, Gabrielsen et al. 2001, DfK 2011). Of these inmates the following drugs are reported used (year 2010 – the numbers are not exclusive): central stimulants 63%, cannabis 68%, problematic use of alcohol, 35%, benzodiazepines 14%, hallucinogens 3%, other 7%.

Third, we have at least since 2005 witness an increase in the Prison Service's spending on prescriptive medicine on inmates in the 13 Danish Prisons. A recent calculation states that from 2007 to 2010 the spending rose from 6,3 mill to app. 10,1 mill DKK (DfK 2012). In the same period the number of inmates has remained relatively stable, with a prison population of app. 3700 (DfK 2011). However, in its calculations the Prison Service does not differentiate between prescriptive and non-prescriptive medicine, nor between for instance methadone and Suboxone; Suboxone being 6-7 times as expensive. The general figures therefore, do not necessarily tell about an increased use of prescriptive medicine among inmates, however, our interviews with health personnel point in that direction (see below).

Taking this context of an increased focus on drug free treatment, tougher drug control and disciplinary sanctions, a harsher prison environment, and a presumably increased use of medication into consideration, the article will focus on Danish prison health personnel's experiences with medication. Especially, the article will focus on the health staffs' experiences with the role of medication in inmates' lives in order for them to cope with prison life, and on the health staffs thoughts on the consequences for drug using inmates of the policy of zero tolerance towards drugs.

Interviews with nine prisoner health personnel

Data stems from qualitative interviews with nine prisoner health personnel (seven nurses, one GP, and one psychiatrist) in six different prisons in Denmark; three maximum security prisons and four open prisons (minimum security), focusing on their experiences with medication to drug users in the prison environment. The results in the article should be seen as tentative, as they rest on a relatively small sample. However, these interviews form part of two larger qualitative research projects focusing on drug treatment and drug control in Danish prisons, the first from 2008-2009, the second is from 2011-2014. In both research projects large amount of field notes and interviews with inmates, counsellors, and officers have been conducted (Prison-based drug treatment in the Nordic countries 2012). These data have been used as an interpretive background for the analysis in this article. Moreover, it is the contention that the conclusions of the article are to be used thematically. That is, as suggestions for areas of concern and for future research.

The prison environment

The health personnel recognize that the prison environment often by inmates is experienced as stressing and depriving both socially and psychologically. Furthermore, they know and understand that illegal drugs e.g. cannabis or illegal prescriptive tranquilizers are used by inmates in a self-prescriptive way in order for them to be able to, among other things, sleep at night, alleviate stress and anxiety, and to cope with boredom. The health personnel also tell that such use is either a continuation/amplification of an already existing misuse or develops while the inmates are in prison. Moreover, our informants say that such use can often generate new problems for the inmates as for instance, debts to dealers, disciplinary sanction from the prisons authorities, or the feeling of the drug use getting out of control. Generally, the health staff are sympathetic towards inmates with all these different problems and their often difficult situation. So, when inmates approach the staff with any of such problems they are mostly willing to help them alleviate withdrawal symptoms whether these are inflicted from use in prisons or on leave with different kinds of prescriptive medicine. As for instance expressed by this nurse:

We know about inmates having bought pills illegally inside prisons and suddenly it has become too expensive for them or there are no pills in circulations. Then they come here, honestly telling us that they have bought benzodiazepines illegally in the prison. And we don't just say "what a pity for you". We ask them how much they have taken and start them up for a two weeks detoxification, for example with Flunitrazepam.

According to our interviews, this reflects a recent change among the health personnel in attitude towards treating withdrawal symptoms: from something the inmates had to deal with on their own to something that is considered part of prison health services.

Related to being sympathetic towards the often difficult situation of incarcerated drug users, all of our interviewees also tell that they in some kind of silent agreement with the inmates make the consulting room function as a kind of *free space*, in which the inmates can tell about their drug use, including use of illegal drugs and medicine in prison, without having to fear repressions or that the staff communicate these information further on in the prison system. For the healthcare worker such building and maintenance of trust is essential in order to secure relevant medical assistance; without trust inmates would often, the healthcare workers tell, maintain their misuse.

The health personnel tell that the prison doctors together with the nurses have a pragmatic attitude towards withdrawal of the use of medicine the inmates have from outside. If inmates have a longer sentence, then the health staff will, in close dialogue with the inmate, make a plan for the use of medicine and eventually a reduction or slowly withdrawal, but if they are in for a shorter sentence, our informants do not think the prison stay is the right time for a withdrawal, as it is often a hard time for the inmates: as for instance told by this nurse:

Our GP and psychiatrist think that, why should we give them another depression, if they for instance have been given benzodiazepines outside for eight years, and they are going to be here for say three month, what is then the purpose of halting the treatment. Of course, they do not just prescribe it like that, but they are against automatically saying 'stop!' Also, they [inmates] can in fact be rather sick if stopping the benzos [benzodiazepines].

The same view was expressed by the one GP we interviewed on inmates in substitution treatment:

My policy has always been...not to question it [inmates' Methadone dose] at the beginning [of their sentence]. Only when we know that the inmates' social situation and things around their imprisonment is under control, we are stirred into activity... We do not hurry.

The healthcare workers in our study also report that the prison population has changed somewhat over the past 5-10 years. On the one hand the awareness of and focus on psychiatric illnesses become greater among prison health workers. Especially, ADHD has come into focus (see for instance: Huber 2009). On the other hand, our informants experience that more inmates in fact exhibit signs of mental disturbances. This reading also corresponds with studies showing that mental disorders are documented to be more common in prisoners than in the general population (Fazel and Baillargeon 2010). One of the nurses in our study expressed it in this way:

These days, inmates are not just inmates. They are mentally unstable individuals in need of help and guidance. They are weak, not die-hard criminals.

For some of the health care staff this increased problem with psychiatric illnesses can help explain the increased use of licit drugs in prisons, and it also make them sensitive towards the often weak natures of the inmates and they think that they need to be treated with special care.

When prescribing or handing out medicine health personnel tell that they pragmatically adjust to and take into consideration the general prison environment, which make up the context for the inmates needs and drug use (both legal or illegal). They also consider that the inmates are potentially more mentally afflicted. Additionally, they state that they are cautious of not adding to the sentenced punishment by for instance having a stricter approach toward medication than would be the case outside. It should be noted however, that though the health staff consider all these aspects related to the drug using inmates' life as important, they are not naive. Repeatedly, they tell that drug using inmates will try to manipulate the health staff to prescribe them more drugs or that they are more or less only focused on the medical aspects of cure, not the mental or physical. Accepting that drug using inmates are manipulative however, does not, make the health staff disapprove of subjective circumstances listed in this section.

The increased focus on zero tolerance and drug free prisons

With the strengthened focus on zero tolerance towards drugs in Danish prisons over the last 10 years the disciplinary sanctions following the detection of both drug selling and drug use has changed. Previously, cannabis use was quietly tolerated in most Danish prisons (Dahl and Pedersen 2006; see also: Keene 1997), not only because it indirectly helped keep order in the prison setting (Kolind 2012), but also because it reflected a legal practice in policy differentiating between hard and soft drugs. Legally this difference has now been removed (Asmussen and Jepsen 2007). And with the random mandatory urine tests implemented in 2004 *all* drug use is now punished; previously urine tests (only taken on suspicion and in relation to leaves) were not tested automatically for cannabis. Furthermore, cannabis use can be traced in the urine tests for up to 5-7 weeks, whereas for instance opioids can only be traced for 1-2 days (Verstraete 2004), which means that most cannabis use will be detected. As mentioned above, positive tests have rather severe disciplinary consequences for inmates, most importantly the suspension of weekend leaves and parole. Finally, the psychosocial drug treatment programs focusing on cannabis or cocaine use predominantly aim at getting the inmates drug free. In sum then, there has in the last decade been an increased pressure on inmates in order to have them terminating their illegal drug use. Especially, inmates' cannabis use is in focus. As a consequence of these developments, inmates increasingly seek up the health personnel to get help in order

to alleviate withdrawal symptoms. Our informants tell that they support these inmates who struggle to become drug free the best they can by prescribing medicine. As stated bluntly by this nurse:

I: Regarding the policy of zero tolerance and the urine tests have you noticed if the use of medication has risen?

Nurse: Yes. Because they need something as a substitute [for their drug use]. Instead of smoking their cannabis, as they have been smoking everyday, they need something to relieve their pains. Because they have pains. They have night-mares, and they have dreams, and they have swarming thoughts. And they need something. And we can give them that. Maybe the counsellor supports them with dream-tea, but that just won't do. Because some of them are simply just very ruined. Often we give them anti-psychotic medicine to alleviate... and that is expensive.

In addition to the anti-psychotic medicine, the health staff tells that they also prescribe different kinds of sleeping medicine, seasick tablets, and other sedatives. However, they also ordinate alternative means such as herbal drugs or herbal teas for withdrawal symptoms, as well as acupuncture, which in fact all the health staff were trained to provide. For instance, the use of auricular-acupuncture is used as an alternative to sedatives. In fact, our informants state that such use of alternative means, including acupuncture, is also a matter of economics. That is, prison managers in some prisons have disapproved of the medicine budget being too high and alternative means can help keeping down expenses.

The new drug policy has then presented the health personnel with new challenges in form of still more patients who try to halt their drug use, who face a range of withdrawal symptoms and who need something which can replace the functional role of drug. This change has also challenged the healthcare workers on a more general level and changed their attitude towards the sufferings caused by inmates' ceasing of cannabis use. Heroin users are usually offered substitution medicine either as maintenance or detoxification, but when it comes to the new drug preferences of inmates – cannabis, cocaine and amphetamine – there is no substitution medicine to alleviate withdrawal symptoms. Medical treatment against withdrawal symptoms from cannabis therefore also makes an experimental area for health personnel, as seen above, and as for instance communicated by this nurse:

We have inmates who ask for medicine in combination with cannabis treatment. They will get chlorprothixene and it actually has a good effect...The doses of that we use are very small, not like the doses used as an anti-psychotic medicine. chlorprothixene is also use in combination with psychosocial cannabis treatment in community drug treatment.

The psychiatrists we interviewed also shared this experimental approach. Talking about chlorprothixene for inmates discontinuing their cannabis use, our informants said:

If it works, then they think I'm a really good psychiatrist, and if it doesn't work, then they think I'm a bad psychiatrist. I don't know what else to do.

References

- Asmussen, V. and J. Jepsen (2007). Dansk narkotika-kontrolpolitik – aktuelt og historisk *Ret og Samfund 2007*. S. Andersen. Copenhagen, Frydenlund: 109-135.
- Carlin, T. (2005). “An exploration of prisoners’ and prison staff’s perception of the methadone maintenance programme in Mountjoy Male Prison, Dublin, Republic of Ireland.” *Drugs: education, prevention and policy* **12**(5): 405-416.
- Craig, S. C. (2004). “Rehabilitation versus control: An organizational theory of prison management.” *The Prison Journal* **84**(4): 92-114.
- Dahl, H. and M. U. Pedersen (2006). *Kvinder i motivations- og stofmisbrugsbehandling i Vestre Fængsel og Horserød Statsfængsel*. Århus, Center for Rusmiddelforskning.
- DfK [Direktoratet for Kriminalforsorgen/The Prison Service] (2006). Evaluering af den skærpede urinprøvekontrol, Direktoratet for Kriminalforsorgen: 12.
- DfK [Direktoratet for Kriminalforsorgen/The Prison Service] (2011): Behandlingsafdelinger og- programmer i danske fængsler. <http://www.kriminalforsorgen.dk/Default.aspx?ID=98>. Visited 23 April 2012.
- DfK [Direktoratet for Kriminalforsorgen/The Prison Service] (2011): Kriminalforsorgens Statistik. Direktoratet for Kriminalforsorgen.

- DfK [Direktoratet for Kriminalforsorgen/The Prison Service] (2012): Personal email correspondence 25th of June with the Statistical Unit in the Danish Prison Service.
- EMCDDA (2008). Final Report on Prevention, Treatment, and Harm Reduction Services in Prison, on Reintegration Services on Release from Prison and Methods to Monitor/Analyse Drug use among Prisoners.
- EMCDDA (2010). Annual report 2010. The state of the drugs problem in Europe. Luxembourg, EMCDDA (European Monitoring Centre for Drugs and Drug Addiction).
- Fazel, S. and J. Baillargeon (2010). "The health of prisoners." *The Lancet* **377**(9769): 956-965.
- Frank, V. A., H. V. Dahl, et al. (2011). Indsattes erfaringer med narkotikakontrol og hashbehandling i danske fængsler. *Kriminalitet og illegale rusmidler*. V. A. Frank and H. V. Dahl. Århus, Aarhus Universitetsforlag: 223-249.
- Frank, V. A. and T. Kolind (2008). Dilemmas experienced in prison based cannabis treatment – drug policy in Danish prisons. *Drug Policy – History, Theory and Consequences*. V. Asmussen, B. Bjerger and E. H. Pedersen. Århus, Aarhus Universitetsforlag: 61-86.
- Gowan, T. and S. Whetstone (2012). "Making the criminal addict: Subjectivity and social control in a strong-arm rehab." *Punishment & Society* **14**(1): 69-93.
- Hawkins, k., Ed. (1992). *The uses of discretion*. Oxford, Clarendon Press.
- Huber, A. (2009). "Øget fokus på diagnosticering af ADHD i Statsfængslet Østjylland." *Nyt fra Kriminalforsorgen* **21**(1): 5.
- Keene, J. (1997). "Drug Misuse in Prison: Views from Inside: A Qualitative Study of Prison Staff and Inmates." *The Howard Journal of Criminal Justice* **36**(1): 28-41.
- Kolind, T., H. Dahl, et al. (2010). Fængselsbetjentes erfaringer med stofbehandling, narkotikakontrol og indsattes brug af rusmidler i de danske fængsler. Aarhus, Center for rusmiddelforskning: 85.
- Kolind, T., V. A. Frank, et al. (2010). "Drug treatment or alleviating the negative consequences of imprisonment? A critical view of prison-

- based drug treatment in Denmark.” *International Journal of Drug Policy* **21**(1): 43-48.
- Kolind, T. (2012): Hverdagens sociale orden i danske fængsler: Cannabis forbrug, interventioner og marked I Danmark. Århus, Aarhus University Press: 199-223.
- Kolind, T, Dahl, H, Frank VA, and Haller MB (2012): Prison drug treatment in Denmark: a historical outline and an analysis of the political discourse. NAT Nordic Studies on Alcohol and Drug. Forthcoming
- Kolind, T, Frank, V. A., Lindberg, O and Tourunen, J (n.d.): Prison-based drug treatment in Nordic political discourse: an elastic discursive construct. *European Journal of Criminology*
- Kramp, P., G. Gabrielsen, et al. (2001). Rusmiddelundersøgelsen. Misbrug blandt Kriminalforsorgens klientel. Copenhagen, Kriminalforsorgen: 201.
- Liebling, A. (2011). “Distinctions and distinctiveness in the work of prison officers: Legitimacy and authority revisited.” *European Journal of Criminology* **8**(6): 484-499.
- Lipsky, M. (1980). *Street-Level Bureaucracy. Dilemmas of the Individual in Public Services*. New York, Russell Sage Foundation.
- Møller, L., H. Stöver, et al., Eds. (2007). *Health in prisons. A WHO guide to the essentials in prison health*. Copenhagen, WHO.
- Neale, J. and E. Saville (2004). “Comparing Community and Prison-based Drug Treatment.” *Drugs: education, prevention and policy* **11**(3): 213-228.
- Pedersen, M. U. and M. K. Nielsen (2007). *Behandlingsgaranti og ydelser i dansk stofmisbrugsbehandling*. Århus, Center for Rusmiddelforskning.
- Prison-based drug treatment in the Nordic countries (2012): <http://crf.au.dk/forskning/projekter/prison-based-drug-treatment-in-the-nordic-countries/> Project description at CRF homepage(Centre for Alcohol and Drug Research).
- Regeringen [The Danish Government] (2003). Kampen mod narko – handlingsplan mod narkotikamisbrug [The fight against drugs – actionplan against drug misuse], Regeringen.

- Regeringen [The Danish Government] (2010). Kampen mod narko II. Handlingsplan mod narkotikamisbrug [The fight against drugs II. Actionplan against drug misuse], Regeringen.
- Shewan, D., H. Stöver, et al. (2008). Injecting in Prisons. *Injecting Illicit Drugs*. R. Pates, A. McBride and K. Arnold, Blackwell Publishing Ltd: 69-81.
- Stöver, H. and C. Weilandt (2007). Drug use and drug services in prisons. *Health in prisons. A WHO guid to the essentials in prison health*. L. Møller, H. Stöver, R. Jürgens, A. Gatherer and H. Nikogosian. Copenhagen, WHO: 85-112.
- Verstraete, A. G. (2004). Detection Times of Drugs of Abuse in Blood, Urine, and Oral Fluid. *Therapeutic Drug Monitoring* 26(2): 200-205.
- Whetstone, S. and T. Gowan (2011). Diagnosing the criminal addict: Biochemistry in the service of the state. *Sociology of diagnosis (Advances in Medical Sociology)*. P. McGann and D. J. Hutsun. Bingley, Emerald. **12**: 309-330.

Section 2

Clinical Considerations

Poly-Drug Use

Sven Todts

Introduction

Drug use in prison has been described in prison systems across the world. In the United States, 53 % of state prisoners and 45 % of federal prisoners met the diagnostic criteria for “drug use disorder” as defined in DSM IV in 2007 (Federal Bureau of Prisons 2011). In Australia, 59 % of all prisoners had a history of injecting drug use (Australian Institute of Health and Welfare 2007). Countries of the European Union report widely divergent data, with lifetime drug use in prison ranging from 1 to 51 %, but with the majority of countries reporting well above 20 % (EMCDDA 2011). The different European countries use different methodologies, making it difficult to compare (Carpentier 2012).

A high prevalence of prison drug has been reported from other parts of the world as well: 79 % of prisoners admitted to substance use in an Iranian prison (Zamani 2010) and 63 % did the same in a series of Indian prisons (Dolan 2010). In South Africa, 40.9 % of a sample of female prisoners was diagnosed with a lifetime illegal substance disorder, confirming that drug use is a problem of both sexes all over the world (Wechsberg 2009).

If high quality standardised data on drug use in prison are hard to come by, this is even truer if one tries to chart poly-drug use in prison. First of all, there is no clear definition of poly-drug use, “a concept that encompasses wide variations in user populations and patterns of use” (EMCDDA 2009, p. 7). Furthermore, most monitoring systems only report aggregated data. Nevertheless, it seems safe to conclude from the relevant literature that drug users in prison are more often than not problematic drug users, practising more dangerous forms of drug use and prone to elevated risk behaviour. As a result, they more present more often than not with somatic co-morbidity that will need treatment, such as tuberculosis, viral hepatitis, HIV or other sexually transmitted infections. Polydrug users also present more frequently with

mental health problems. Mental health problems are more prevalent in prison populations than in society in general, and drug using prisoners are among the most vulnerable. The Dutch psychiatrist Blaauw estimates that 4% of prisoners suffer from psychosis and that up to 10 % suffers from major depression (Blaauw 2007).

It goes without saying that treating poly-drug using patients with underlying mental health problems and somatic co-morbidity can be a therapeutic challenge. The interactions between different illegal substances and therapeutic agents can lead to increased toxicity because of additive or potentiating effects, because of pharmacokinetic factors or because of the production of new metabolites, such as in the combined use of cocaine and alcohol, leading to coca-ethylene, a drug with its own psychotropic and somatic effects on the body and mind of the user (Landry 1992).

Opioid replacement therapy

Opioid replacement therapy has been established as an effective and cost-effective treatment. The most common form of replacement therapy is methadone maintenance therapy, but other molecules are used throughout the world, such as buprenorphine, morphine, codeine, sustained release morphine, levo-alfa-acetylmethadol (LAAM) and diamorphine. A recent systematic review that reviewed the effectiveness of substitution treatment in prison and after release confirms that the benefits of opioid maintenance treatment are similar to those in community settings. Not only will opioid maintenance treatment provide treatment continuity for those already in treatment in the community, it also represents an opportunity to recruit opiate users into treatment and it will reduce opiate use and other risk behaviour in prison (Hedrich 2012). Different countries (e.g. Belgium, England and Wales) recommend methadone as first-line treatment of opiate abuse in prisons (Department of Health 2005).

Methadone maintenance therapy

Dosage

If a patient is already maintained on methadone in the community, the same dosage can be continued in prison, but it is important to check the correct dosage with the earlier prescriber, as well to check (e.g. by contacting the

treatment centre or the pharmacist) whether the patient has effectively taken his medication in the last two or three days. If there is no certainty about the dosage, it is safer to start a new induction after appropriate assessment. An initial dose should not exceed 30 mg. Higher maintenance doses are associated with better therapeutic outcomes. The range that is optimally effective for most patients is 80–120 mg per day (Kastelic 2007), but there are large differences between individuals (Leavitt 2000). From data collected in a recent study among physicians treating opioid dependence in four European countries, the authors concluded that substandard prescribing practices were likely to increase methadone and buprenorphine misuse and to decrease compliance (Bacha 2010). Although all physicians active in prisons should have a basic knowledge of methadone treatment (including treatment induction, appropriate dosing, etc.), it might be advisable that they should have access to addiction specialists to advise them on specific items such as above average dosing or split dosing for fast metabolizers.

Distribution

One of the important problems that clinicians working in a custodial environment encounter is the potential for abuse of the medications they prescribe. Prisoners will try to get access to methadone either to abuse it themselves – with the risk of accidental overdose – or because of the commercial value of the agent.

Methadone (or for that matter all agonist opioid replacement medication) should only be ingested under supervision of a member from the medical staff. It is advisable to allow only one or a very limited number of well recognisable formulations in a prison setting. In Belgium, for example, we only allow one standardised green coloured liquid formulation. This practice makes it easier to estimate the probable effects in case of diversion and abuse, and also allows differentiating between diversion of in-house methadone and smuggling of formulations from the outside. Diversion of liquid methadone (if taken under supervision) is more difficult than diversion of other formulations such as tablets: liquid formulations should be the formulation of choice.

A specific problem is the identification of prisoners. Certainly in arrest houses with a large turnover of patients, it can be easy for prisoners to pose as somebody else. Ideally, nurses and doctors who supervise methadone distribution should have access to a recent photograph of their patient.

Drug interactions

Opioids such as methadone or buprenorphine are metabolized by the human liver. The primary mechanism is metabolism by the cytochrome P450-system. More specifically, cytochrome CYP3A4 plays a major role, next to other enzymes such as CYP2B6, CYP2C19 and CYP2C29. Substances that interact with the CYP450 system do so by acting as a substrate, through inhibition or through induction. Drugs are substrates when they are metabolized by the CYP450 system. Other drugs are inhibitors of the CYP enzymes. As a result of inhibition, the metabolism of substrates will slow and the concentration of substrates might reach dangerously high toxic levels. Finally, some drugs may act as inducers of CYP enzymes: metabolism of substrates will accelerate, resulting in lower drug concentrations.

The consequence for the clinician is that it is important to have full knowledge of all prescribed and non-prescribed drugs a patient is using (or not using, although prescribed). Patient education on this topic is necessary and helpful, but even then – and certainly in a prison context – information about the use of illegal drugs will not always be forwarded easily. Therefore, it is reasonable that substitution programs include regular urine tests by the treating physician, as long as the results of these tests remain a medical secret and are not shared with the prison administration.

If a drug is added or taken from the patient's treatment schedule, patient response has to be followed up so that the methadone dose can be adjusted based on the patient's response. It is usually not useful to adjust "preventively", as there are wide inter-patient variations in the magnitude of the interactions. Clinicians may find it useful to monitor serum methadone levels in certain cases.

It is best to avoid the use of well known inhibitors or inducers. Clinicians can find elaborate listings of known interactions on the internet (e.g. Flockhart, D. 2007).

Some of the more important interactions are (McCance-Katz 2010):

- with HIV-medication: Delavirdine is a non-nucleoside reverse transcriptase inhibitor (NRTI) that inhibits CYP3A4. As a result, administration of this drug can lead to toxic methadone concentrations. The NRTI efavirenz and nevirapine act as CYP450 inducers, resulting in an acceleration of the methadone metabolism and thus in an opiate withdrawal symptom. Interestingly, this effect does not occur with buprenorphine. Finally,

didanosine and stavudine are two NRTI that are sensitive to gastric acidity. Since one effect of methadone is that it slows gastro-intestinal mobility, there is a risk of sub-therapeutic levels for both agents.

- with anti-tuberculosis medication: Rifampacin is a first-line medication in the treatment of tuberculosis, but it is also a CYP3A4-inductor that frequently leads to opiate withdrawal symptoms.
- with antibiotic and antifungal medication: the fungicides fluconazole and voriconazole and the antibiotic ciprofloxacin all inhibit CYP450 and concomitant use can therefore lead to opioid intoxication.

QT-interval

A dangerous side-effect of methadone treatment is the development of the life-threatening ventricular tachycardia known as “torsade de pointes”. The tachycardia is the result of an aberration in the ECG known as “QT-interval prolongation”. Methadone prolongs the QT-interval. The same is true for a number of other drugs, including different antibiotic and antiviral agents. Cocaine also prolongs the QT-interval. Since poly-drug users are prone to use cocaine as well as medications from different classes, they are at a higher risk to develop Torsade de Pointes.

This dangerous complication is dose-related: the higher the dosage of methadone, the higher the risk of *torsade de pointe* tachycardias. Typically, tachycardias develop when the dosage is increased, when other QT-prolonging agents are added or when cocaine is used on top of the methadone. Clinicians are advised to monitor the ECG of methadone users, specifically if higher doses (from 100 mg per day) are used or if QT-prolonging agents are prescribed.

Buprenorphine maintenance therapy

Buprenorphine has weaker opioid agonist activity than methadone. It is not well absorbed orally, and the most common administration route is therefore sublingual. Because buprenorphine is only a partial opioid agonist, there is theoretically less risk for overdose. In practice however, diversion, abuse and overdose from buprenorphine have been described (Substance Abuse and Mental Health Services Administration 2006). Overdoses occurred in poly-drug users who also abused benzodiazepines, alcohol or other opioids. The

greatest risk occurs if buprenorphine and benzodiazepines are simultaneously injected.

Suboxone® is a formulation that combines buprenorphine with the opioid antagonist naloxone. This formula is meant to stop drug users from injecting or snorting it: if injected, naloxone will cause an opiate withdrawal syndrome. It is questionable if Suboxone® has many advantages over the normal formulation Subutex® if the medication is distributed and consumed under supervision of a nurse.

The main problem with the use of buprenorphine in prisons is that sublingual consumption takes a considerable time. Often prison staff does not have the time to supervise sublingual consumption, with the result that the risk of diversion increases. To avoid diversion, different prison health care services have taken the step to crush the sublingual tablets. Although at least one study confirms that crushing Subutex® tablets does not significantly alter their clinical effect (Simojoki 2010), there is no consensus on crushing. The Royal College of General Practitioners in the UK mentions that “any such administration by crushing would therefore not only be off license but could also impact on healthcare professionals’ indemnity insurance and lead to the possibility of exposure to litigation with regard to efficacy” (Bicknell 2011).

Buprenorphine is also metabolized by CYP450 enzymes. Concomitant cocaine use leads to sub-therapeutic buprenorphine levels. Possibly this is primarily the result of CYP3A4-induction, but other mechanisms have been put forward as explanations as well: it has been suggested that vasoconstriction (an effect of cocaine) inhibits buprenorphine absorption (Madden 1995). In any case, this may explain why methadone maintenance treatment seems to be superior to buprenorphine in case of opioid dependence with comorbid cocaine use (Castells 2010).

Insomnia and anxiety

Both insomnia and anxiety are frequently presented problems in prison, and prescribing clinicians are often under pressure to prescribe benzodiazepines. Although many requests may be justifiable, prescribing benzodiazepines in prison remains problematic because abuse is frequent and dangerous. First of all, benzodiazepines play an important role in the development of overdose (Farrell 1996). Benzodiazepines can also result in paradoxical reactions such as increased anxiety, increased hostility and paradoxical rage (Hall 1981).

Finally, they cause important and not easy to treat dependencies in their own right. On the other side, it is clear that the use of benzodiazepines cannot be simply forbidden: they still play a valuable role in short term treatment of anxiety and acute sleeping problems and in the treatment of spasticity, dystonia, epilepsy and convulsions. They also play an important role in detoxification from drugs such as alcohol or cocaine.

Dependent prisoners, whether illegal substance users or not, will go to great lengths to obtain benzodiazepines. Their gamut not only comprises begging or threatening behaviour toward prescribers, but also smuggling pills from the outside, bullying other prisoners into selling their medication or faking symptoms such as epileptic insults. Benzodiazepines are a wanted commodity in prison with a certain “street value”. The street value often depends on which molecule it is or even on its brand name. The reason for this preference can be clear (such as in the case of flunitrazepam), but in other instances preferences reflect hard to trace regional or local sub-cultural trends. In reality, there probably are no relevant clinical differences between the different benzodiazepines, although pharmacokinetic properties such as half life or the formation of active metabolites will influence the duration of the effects.

To minimize abuse and diversion, clinicians should stick to the following two recommendations:

- first of all, benzodiazepines should only be prescribed for limited periods of time and only if there is a sound medical reason. This implies that there always should be a thorough anamnesis and examination before prescribing. Research shows that this basic requirement is not always met in prison (Elger 2004);
- prison health care services can minimize benzodiazepine abuse by limiting the number of available molecules. If a patient enters the prison while taking a benzodiazepine, an equivalent dose of a reference molecule in the formulary can be prescribed. Diazepam is often used as a reference molecule: it is long acting, making it a suitable molecule to treat anxiety. In most countries it is available in a large number of different dosages and formulations. The molecule is also useful as an anticonvulsant or a muscle relaxant. Finally, diazepam does not seem to influence methadone levels (Preston 1986).

A molecule with a slightly less long acting time such as lormetazepam is indicated for the short term treatment of sleeping problems. Finally, it might

be useful to add a molecule to the formulary which is not subjected to hepatic oxidation, such as oxazepam: it can be used to treat patients with liver disease.

So called Z-drugs (non-benzodiazepine hypnotics) have been found to be as vulnerable to abuse and the development of dependence as benzodiazepines (Casati 2012). Certainly in the subpopulation of poly-drug users, they do not offer a real alternative to benzodiazepines.

Mental illnesses

Poly-drug users often present with symptoms of mental illness and will need medical treatment for this condition. Since many of the involved agents are psychotropic in their own right, there is a potential for abuse and diversion.

Depression

In many cases, opioid replacement therapy will resolve depressive symptoms, but in other cases antidepressant therapy will be necessary. Selective serotonin reuptake inhibitors (SSRI) inhibit CYP 450, resulting in increasing methadone concentrations. Specifically fluvoxamine seems to have clinically significant effects, including an opiate withdrawal syndrome upon discontinuation (Bertschy 1994). No clinical effects have been described with fluoxetine and citalopram: these molecules should be considered to be first line antidepressants in a population of poly-drug users.

No interactions are known between methadone or buprenorphine on the one side and mirtazapine or trazodone on the other side, but because of the sedative properties of these agents, the risk of diversion and abuse is considerable. Their widespread use as a sleeping agent should be discouraged.

Antipsychotics

There do not seem to be a lot of important pharmacokinetic interactions between opioids and antipsychotic agents. There do however exist pharmacodynamic interactions, which can result in excessive sedation or cognitive dysfunction (McCance-Katz 2010).

Quetiapine has been shown to increase methadone levels through CYP450 inhibition (Uehlinger 2007). Low-dose quetiapine is sometimes used to treat insomnia. Recent research shows that this use is not without adverse health consequences (Coe 2012). The practice has also led to widespread diversion

and abuse in prisons – including snorting of crushed tablets – and should be discouraged (Pierre 2004).

Some anticonvulsants are sometimes used to treat schizoaffective disorder. Older anticonvulsants such as carbamazepine and phenytoin are CYP450 inducers which can be the cause of opiate withdrawal symptoms in opioid users. The methadone dosage of patients treated with these agents should be increased if necessary. Newer agents such as lamotrigine or topiramate seem to have less influence on methadone levels: they might be a better choice in poly-drug users (McCance-Katz 2010).

Psychostimulants

Although there are some other indications such as narcolepsy, the large majority of psychostimulants will be prescribed to treat Attention Deficit Hyperactivity Disorder (ADHD). The potential for diversion and abuse of psychostimulants in prison is important. Therefore, they should only be distributed under supervision of the medical staff. There are no known important interactions with methadone or buprenorphine.

If an adult person enters prison while on psychostimulants for ADHD, there is no reason to discontinue this current treatment, as long as the diagnosis and the treatment are confirmed by the physician who treated the patient before incarceration. Diagnosis of ADHD and eventual induction of drug therapy should be done exclusively by experienced specialists.

References

- Australian Institute of Health and Welfare, 2007. Statistics on drugs in Australia 2006. Canberra: AIHW.
- Bacha J., Reast, S. and Pearlstone, A., 2010. Treatment practices and perceived challenges for European physicians treating opioid dependence. *Heroin Addict Rel Clin Probl*
- Bertschy, G., e.a., 1994. Probable metabolic interaction between methadone and fluvoxamine in addict persons. *Ther Drug Monit.*, 16: pp. 42-45.
- Bicknell, M e.a., 2011. *Safer prescribing in Prisons. Guidance for clinicians.* Nottinghamshire Healthcare (for Royal College of General Practitioners), 38 p.

- Blaauw E., and Van Marle, H., 2007. Mental health problems in prisons. In: WHO regional office for Europe, Copenhagen, 2007, *Health in prisons. A WHO guide to the essentials in prison health*, pp. 133-146.
- Carpentier, C., Royuela, L., Noor, A. and Hedrich, D. 2012. Ten years of monitoring illicit drug use in prison populations in Europe: issues and challenges. *The Howard Journal of Criminal Justice*, feb 2012, pp. 37-66.
- Casati,A., Sedefov,R. and Pfeiffer-Gerschel, T., 2012. Misuse of Medicines in the European Union: A Systematic Review of the Literature. *Eur Addict Res*, 18: pp. 228-245.
- Castells, X., Kosten, T. e.a., 2009. Efficacy of opiate maintenance therapy and adjunctive interventions for opioid dependence with comorbid cocaine use disorders: a systematic review and meta-analysis of controlled clinical trials. *Am J drug and alcohol abuse*, 35(5): pp. 339-349.
- Coe, H. and Hong,I., 2012. Safety of low doses of quetiapine when used for insomnia. *Ann. Pharmacother*, 46 (5): 718-722.
- Department of Health, 2005. Clinical management of drug dependence in the adult prison setting including psychosocial treatment as a core part. London, Department of Health.
- Dolan, Kate and Larney, Sarah, 2010. HIV in Indian prisons: Risk behaviour, prevalence, prevention & treatment. *Indian J Med Res*, 132 (6): 696-700.
- Elger, B., 2004. Management and evolution of insomnia complaints among non-substance-misusers in a Swiss remand prison. *Swiss Med Wkly*, 134: pp. 486-489.
- European Monitoring Centre for Drugs and Drug addiction, 2009. Selected Issue: Polydrug use patterns and responses. Lisbon, EMCDDA.
- European Monitoring Centre for Drugs and Drug addiction, 2011. Annual report on the state of the drug problem in Europe 2011. Lisbon: EMCDDA.
- Farrell,M., Neeleman, J., Griffiths,P. and Strang, J., 1996. Suicide and overdose among opiate addicts. *Addiction*, 91(3), pp. 321-32.
- Federal Bureau of Prisons, 2011. Annual report on substance abuse treatment programs fiscal year 2011. Report to the judiciary committee of the United States Congress. Washington: FBP.

- Flockhart D. A., 2007. Drug Interactions: Cytochrome P450 Drug Interaction Table. Indiana University School of Medicine. <http://medicine.iupui.edu/clinpharm/ddis/table.aspx>. Accessed [15/8/2012].
- Gruber, V. and McCance-Katz,E., 2010. Methadone, buprenorphine and street drug interactions with antiretroviral medications. *Curr HIV/AIDS Rep*, 7: pp. 152-160.
- Hall, R. and Zisook, S., 1981. Paradoxical reactions to benzodiazepines. *Br J Clin Pharm*, 11: pp. 999-1004.
- Hedrich, D. e.a., 2012. The effectiveness of opioid maintenance treatment in prison settings: a systematic review. *Addiction*,107(3):501-517.
- Kastelic, A., 2007. Substitution treatment in prisons. In: WHO regional office for Europe, Copenhagen, 2007, *Health in prisons. A WHO guide to the essentials in prison health*, pp. 113-132.
- Landry, M.J., 1992. An overview of cocaethylene, an alcohol-derived, psychoactive, cocaine metabolite. *J. Psychoactive Drugs* 24 (3): pp. 273-276.
- Leavitt, S., Shinderman, M., e.a., 2000. When “enough” is not enough: new perspectives on optimal methadone maintenance dose. *Mount Sinai J Med*, 67 (5): pp. 404-411.
- Madden,J., Konkol, R. and Keller, P., 1995. Cocaine and benzoylecgonine constrict cerebral arteries by different mechanisms. *Life Sci*, 56: pp. 679-686.
- Mancuso, C.E., Tanzi, M.G. and Gabay,M., 2004. Paradoxical reactions to benzodiazepines: literature review and treatment options. *Pharmacotherapy*, 24 (9) [accessed 15/8/2012]
- McCance-Katz, E., Sullivan, L. and Nallani, S., 2010. Drug Interactions of Clinical Importance among the Opioids, Methadone and Buprenorphine, and other Frequently Prescribed Medications: a Review. *Am J Addict* 19 (1): pp. 4-16.
- Pierre, J. e.a., 2004. Intranasal quetiapine abuse. *Am J Psychiatry*, 161: p. 1718.
- Preston K. e.a., 1986. Diazepam and methadone blood levels following concurrent administration of diazepam and methadone.*Drug Alc Depend.*,18: pp. 192-202.

- Simojoki K, Lillsunde P, Lintzeris N, and Alho, H, 2010. Bioavailability of buprenorphine from crushed and whole buprenorphine (Subutex) tablets. *Eur Addict Res* (16): pp. 85–90.
- Stichterling, C. e.a., 2005. Methadone-induced Torsade de Pointes tachycardias. *Swiss Med Wkly*, 135: pp. 282-285.
- Substance Abuse and Mental Health Services Administration, 2006. Treatment Diversion and Abuse of Buprenorphine: A Brief Assessment of Emerging Indicators: Final Report. Washington, SAMSHA, 66 p.
- Uehlinger, C., Crettol, S. and Chassot, P., 2007. Increased (R)-methadone plasma concentrations by quetiapine in cytochrome 450s and ABCB1 genotyped patients. *J Clin Psychopharmacol*, 27: pp. 273-278.
- Wechsberg, W. e.a., 2009. Substance abuse, treatment needs and access among female sex workers and non-sex workers in Pretoria, South Africa. *Subst Abuse Treat Prev Policy*, 4 (11), available through 10.1186/1747-597X-4-11. [accessed June 15th, 2012].
- Zamani, S. e.a., 2010. Patterns of Drug Use and HIV-Related Risk Behaviors among Incarcerated People in a Prison in Iran. *J. Urban Health*, 87(4), pp. 603–616.

Poly-Morbidity

Andrés Marco-Mourino

Introduction

There is an estimated ten million incarcerated persons in the world, almost half of whom live in three countries the United States of America, China and Russia. The United States represents only 5% of the world population but 25% of the incarcerated population (756 inmates per 100,000 inhabitants). Other countries with high rates of incarceration include Russia, Rwanda, St Kitts and Nevis, and Cuba, all of which have incidence rates over 500 per 100,000 (Walmsley 2008). Nonetheless, prison populations are variable, or even significantly different, between continents, countries and regions.

The incidence rate for about 60% of countries is under 150 per 100,000 and remains at 95 per 100,000 in Southern and Western Europe (excluding Russia, Turkey and the former Soviet Union countries). In recent years, the incarcerated population has increased in 71% of countries worldwide (Walmsley 2008) and is estimated to have increased by more than one million inmates during the last decade (Fazel and Baillargeon 2011). Due to this increase, as well as to circumstances related to prison management and lack of regard for inmates' rights, many prisons are currently overcrowded. Prisons in Central and South America have been severely affected by this trend. In Europe, the average occupation rate for each 100 places is at 133 and remains over 100 in 26 European countries (Council of Europe 2010). This situation can be even worse in low income countries. Overcrowding in prisons has important health repercussions for the inmates, such as increased infectious and psychiatric disease prevalence and more frequent violence and can affect the relationship between inmates and professionals, as well as hinder social reintegration. Furthermore, over-crowding could be considered an assault against the human rights of the inmate or represent inhuman treatment against personal liberties (Garcia-Guerrero and Marco 2012).

Poly-morbidity in prisons

Prisoner's health is influenced as much by structural determinants (institutional, environmental, political, economic and social) as it is by physical and mental conditions of the prisoners themselves. A prisoner's health can be, therefore, especially vulnerable. The contribution of prisons to illness is unknown, although shortcomings in treatment and aftercare provision contribute to adverse outcomes (Fazel and Baillargeon 2011).

Studies have shown there is a higher prevalence of some chronic diseases, such as hypertension, arthritis and cervical cancer, among the incarcerated population compared to the non-incarcerated population, even when adjusted for socio-demographic variables and alcohol consumption. This is not the case for other chronic conditions, such as obesity, diabetes or heart disease (Binswanger et al. 2009). It is estimated 40% of inmates have a chronic disease (Wilper et al. 2009).

A higher prevalence of legal and illegal drug consumption and associated infectious diseases, mental conditions and violent conduct is also found in prisons. Consumption of alcohol and/or illicit drugs significantly varies by country where the epidemiology in prisons has been studied. In Italy, substance abuse and psychiatric conditions are found in one of five inmates, or 20.9% (Piselli et al. 2009). In Spain, substance abuse and dependence were found to be the most common condition, with a 76.2% prevalence calculated in a recent prospective and multicenter study (Vicens et al. 2011). Prevalence of alcohol abuse among the incarcerated population worldwide is thought to oscillate between 10% and 30%, whereas illegal substance abuse and dependence is estimated at 10-60% (Fazel, Bains and Doll 2006).

The prison population is also believed to have double the prevalence of common mental illness and four times the prevalence of serious mental illness (Arroyo-Cobo 2011). In a systematic review of 12 countries and 22,790 inmates, 3.7% of men and 7% of women had a psychotic illness, and 10% of men and 12% of women were diagnosed with major depressive disorder (Fazel and Danesh 2002). Mental illness also increases the probability of repeat offenders (Baillargeon 2009, Jurgens 2010), especially since a psychotic patient is likely to abandon treatment after release from prison. It has been found that many inmates with mental illness are not undergoing psychiatric treatment when sentenced (Wilper et al. 2009).

The most prevalent infectious diseases within the incarcerated population are those associated with intravenous drug use (viral hepatitis and HIV infection), tuberculosis (TB) and sexually transmitted infections. In the United States of America, 25% of the 2,000,000 state and federal inmates are infected with hepatitis C virus (HCV) (Allen et al. 2003). In other countries with a similar economic status, prevalence ranges from 12-40% (Vescio 2008, Butler 2007, Saiz de la Hoya 2011). Intravenous drugs users (IDU) have 24 times higher probability of being infected with HCV than non-IDU. However, drug user's non-IDU in prisons still represents a higher prevalence of HCV infection than their non-drug users (Macias et al. 2008).

In respect to HIV infection, the highest reported prevalence among developed countries is Spain at 10.8%. Aside from Italy and some prisons of the United States, most rates are below 5% and even reach 0% in Slovakia and Denmark (Marco et al. 2012). Countries with a prevalence rate equal or higher than that of Spain met the following criteria: a) admittance of a high proportion of IDU (as in some prisons of Russia, Italy, Thailand and Brazil), b) high rates of sexually transmitted infections, as seen in some Brazilian prisons with a high number of female prostitute inmates, and c) prisons located in sub-Saharan African countries such as Nigeria, Ghana, Malawi or Zambia, where the HIV infection rate is high in the non-incarcerated population as well (Marco et al. 2012).

Similarly, the prevalence of latent tuberculosis infection (LTB) and TB disease is much high in prisons than in the general population. It is estimated that European inmates are 83.6 times more likely to have TB than the non-incarcerated population (Aerts, Hauer, Wanlin and Veen 2006). As seen with HIV infection, Spain also represents one of the highest rates of LTB prevalence in prisons (50%) (Garcia-Guerrero, Marco, Saiz de la Hoya and Vera-Remartinez 2010). The LTB prevalence in Spanish prisons is much higher than that in other developed countries, but lower than that of Pakistan and Brazil (Marco et al. 2012).

About sexually transmitted infections (STI), the burden of disease that STI represent globally is unknown for several reasons. Firstly, asymptomatic infections are common in many STI; secondly, diagnostic techniques are not available in some of the most affected countries; finally, surveillance systems are inexistent or very deficient in many areas of the world. The World Health Organization has estimated that in 1999 there were 340 million new cases of syphilis, gonorrhoea, chlamydia infection and trichomoniasis. An increasing

trend in the incidence of gonorrhoea and syphilis has been noticed in the last years in the European Union. More attention on detection and treatment of STIs in prisons was recommended because of the high prevalence of STIs in prisons (Felman 1982). Overall, higher rates of medical and psychiatric comorbidities are seen in the prison population. These serious illnesses can even be a threat to the patient's life. AIDS, TB, substance abuse, mental illness, among other illnesses and deficiencies affect an important proportion of inmates in many parts of Europe and the rest of the world. Evidence-based treatments are available for the management of substance-use disorders, mental illness, HIV and other infectious complications such as viral hepatitis and tuberculosis, and much non-HIV-associated comorbidity. Simultaneous clinical management of multiple co-morbidities might result in complex pharmacokinetic drug interactions that must be adequately addressed.

Improvement of healthcare services in for better safety

Quality of healthcare in some prisons has been criticized. Some countries, like the United States, use the measurement of certain indicators to objectively assess the quality of these services (Damberg 2011, Asch 2011). A group of experts also recently published recommendations for healthcare activities in penitentiary institutions (Stern, Greifinger and Mellow 2010).

In general, healthcare deficiencies in this setting are due to limitations in:

1. the structure of prisons
2. monetary, human and material resources
3. professional education and preparation
4. medication prescription and distribution
5. non-compliance to recommendations or guidelines by healthcare agencies for disease management
6. the question of safety while providing healthcare services, and
7. ethical aspects that affect the inmates' rights of privacy, informed consent, research, etc.

Healthcare in penitentiaries must be improved for ethical reasons to prevent the loss of an inmate's right to health as part of their personal freedom. Furthermore this is an important issue for important for the general interest of the public, who can also experience health repercussions outside the prison. The recognition of penitentiary health as an important component of public health united 28 countries of the European Region of the World Health Or-

ganization (WHO) to work together with the goal to improve health within prisons (Gatherer, Møller and Hayton 2005). A document titled “Madrid Recommendation” was created by international experts, researchers and professionals from over 65 countries to prevent and control infectious diseases in prisons (Møller 2010, Hayton 2010).

One key concept to improve health within prisons is to avoid an isolated healthcare team that is dependent solely on the prison administration. Healthcare professional teams in prisons should be part of the Health Ministry to guarantee equality between inmates and the general public. On an international level, penitentiary healthcare models are variable. For example, the healthcare system for prisons in the United Kingdom (England and Wales) was divided into primary care teams (PCT, Primary Care Trust) under the Health Authority in 2009. In the United States, the healthcare system for each prison is established through local public companies or institutions, similar to an insurance company. This raises a controversial question if healthcare systems in prisons should be created through private services that focus of the health of inmates, as seen in recent years in some countries such as the United States of America.

The use of private contracts is variable and may be due to interest in improving healthcare in prisons, reduction of healthcare costs in prisons or due to a judicial decision. Some literature claims that private healthcare services offer clear advantages (Novick 1976), while other sources, such as the Department of Economics at the University of California, estimated that a 13% increase of medical personnel employment under private contract increases mortality by 1.3% (Bedard and Frech 2009).

Safer prescribing for patients with mental illness and drug dependence (co-morbidity)

Literature on providing healthcare services (diagnostic, clinical, therapeutic and ethical services) in prisons is somewhat limited. Minimum standards for the care of prisoners were established over half a century ago in Geneva at the United Nations First Congress on Crime Prevention and Treatment of Offenders to guarantee the availability of quality services for incarcerated individuals (Office of the United Nations High Commissioner for Human Rights 1955). Forty years later, the American Society of Health-System

Pharmacists edited the guidelines and included the following recommendations for the following areas:

1. administration;
2. policies and procedures;
3. administrative reports;
4. facilities;
5. purchasing, distribution, and control of medication;
6. medication administration;
7. documentation;
8. emergency services;
9. therapeutics policies;
10. quality improvement;
11. drug information; and
12. research

Apart from these guidelines, the *Sociedad Española de Sanidad Penitenciaria* performed a nation-wide study 10 years ago called the CAPRI study on quality of healthcare services in prisons (Saiz de la Hoya and Viciano 2002). Other globally recognized organizations, such as the WHO, the National Commission on Correctional Health Care (National Commission on Correctional Health Care 2008) and American Correctional Association (Anno 2001) have also published guidelines to ensure quality healthcare in prisons.

As previously highlighted, particular infections and illnesses affect a significant proportion of the incarcerated population worldwide and are frequently concomitant. Although different approaches to these problems exist, a firm and decisive stance on behalf of the administration is important to prevent the transmission diseases among this population, facilitate their treatment and improve the overall health of the incarcerated community (Madrid Recommendation 2010). Therefore the first step is to detect illness or disease process within the prison using comprehensive screening.

Secondly, all barriers or obstacles that could potentially hinder treatment should be removed from the prison population. Inmates should be treated in a similar manner to their non-incarcerated counterparts. Useful approaches can be found in the Diagnostic and/or Treatment Guidelines created by the Public Health Administration and Scientific Society (Michel and Maguet 2005; Centers for Disease Control and Prevention 2006; Saiz de la Hoya, Marco, Clemente, Portilla and al 2006).

A high percentage of inmates in developed countries are undergoing some type of pharmacological treatment. One prison in the United States of America reported that 14% of male inmates and 27% of female inmates were prescribed at least one medication, and up to 23 different drugs were prescribed for one inmate during their time at the institution. The average drug cost per inmate was \$46.50, while the average cost per inmate with a drug prescription was \$324 per month for men and \$170 per month for women (Tennyson 2009). As seen in Spain, pharmacological costs in some countries have increased. One prison in Madrid reported that bimonthly pharmaceutical costs had increased to 5,370 Euros, citing psychiatric medication as a significant proportion (Algora-Donoso and Varela-Gonzalez 2008). It is estimated that the proportion of the incarcerated population undergoing psychiatric pharmacological treatment ranges from 14% to 52% in developed countries (Cañas 2001, Hartvig 2004, Álgora-Donoso 2008, Harcouët 2010). Though the reasons for the frequent use of psychiatric drug treatment in prisons are diverse, some trends can be identified:

1. an increased demand for psychiatric pharmacological treatment generated by co-existing substance abuse
2. high prevalence of mental illness in general among inmates
3. the “psychiatrization” of other life event
4. the use of psychiatric drug treatment for impulse control and craving reduction, and
5. complacency caused by the imprisoned environment.

Treatment algorithms have been created recently to address the problem of multiple drug prescriptions and clinical decision making in the prison setting. Encouraging advances have been made in this field for the treatment for bipolar disorder (Kamath et al. 2010) and schizophrenia (Buscema, Abbasi, Barry, Lauve 2000).

In Spain, a country with developed penitentiary healthcare, 60% of the medication prescribed in prisons (specifically, antiretroviral drugs, antiviral drugs to treat hepatitis and those targeting the central nervous system) are purchased through an economic agreement with General Penitentiary Services for the purpose of cost reduction. The remaining 40% of the medication is purchased by prisons from pharmacies, drug distributors and the pharmaceutical industry. Drug monitoring is performed by a pharmacist in less than 30% of the prisons in Spain (global.net 2009). The details on drug monitoring in other countries, such as by whom, drug type and supply, are not known.

Drug safety must address patient risk reduction, as well as monitored drug purchasing and distribution, rational use and reduction of adverse reactions. The recommended measures are known as the “five rights”: the right drug, right dose, right route, right time, and right patient. After two years of reviewing current research and studies on patient safety, the National Quality Forum released its evidence-based consensus report listing 30 “safe practices for better healthcare” (National Quality Forum 2003). Recommendations made by the National Quality Forum include:

1. to create a safe environment
2. to provide adequate capacity for necessary services
3. to promote information distribution and communication
4. to modify clinical care according to specific circumstances and protocols, and
5. to improve the safe use of medications.

“Thirty Safe Practices for Better Healthcare” is a report used by hospitals that could also be adapted by penitentiary healthcare services. Table 1 describes the minimum requirements for rational use of medication in the penitentiary setting, and Table 2 describes improvements for quality of care.

As previously mentioned, recently a conference of experts recommended 60 patient safety standards focusing on such issues as creating safety cultures at organizational, supervisory, and staff levels through changes to policy and training and by ensuring staff competency, reducing medication errors, encouraging the seamless transfer of information between and within practice settings, and developing mechanisms to detect errors or near misses and to shift the emphasis from blaming staff to fixing systems. To our knowledge, this is the first published set of standards focusing on patient safety in prisons, adapted from the emerging literature on quality improvement in the community, focus on ensuring drug safety through healthcare professional competency through policy changes, training, reduction of prescription errors, efficient communication between and within institutions, the development of systems for error detection and by emphasizing system improvement rather than blame among the team. To our knowledge, this is the first published set of standards from current literature regarding on patient safety and quality improvement in prisons, adapted from the emerging literature on quality improvement in the community. These recommendations are presented in Tables 3 and 4 according to level of high important (Level 1) and secondary to level 1 (Level 2), respectively. They should be the basis for

public administration, management and healthcare professional for medical care in prisons.

References

- Aerts, A., Hauer, B., Wanlin, M., Veen, J., 2006. Tuberculosis and tuberculosis control in European prisons. *The International Journal of Tuberculosis and Lung Disease*. 10 (11), p. 1215-23.
- Algora-Donoso, I., Varela-González, O., 2008. Psychoactive drugs and costs in the Madrid III (Valdemoro) prison. *Revista Farmacia Hospitalaria*, 32 (6), p. 331-8.
- Allen, SA., Spaulding, AC., Osei, AM., Taylor, LE., Cabral, AM., and Rich, JD., 2003. Treatment of chronic hepatitis C in a state correctional facility. *Ann Intern Med*. 138(3), p. 187-90.
- American Society of Health-System Pharmacists, 1995. ASHP guidelines on pharmaceutical services in correctional facilities. *American Journal of Health-System Pharmacy*, 52 (16), p. 1810–3.
- Anno, B.J., 2001. *Correctional Health Care: Guidelines for the Management of an Adequate Delivery System*. Washington, DC: US Dept of Justice, National Commission on Correctional Health Care.
- Anonymous. La Recomendación de Madrid: La protección de la Salud en las prisiones como parte esencial de la Salud Pública. *Revista Española de Sanidad Penitenciaria*, 12 (2), p. 58-59.
- Arroyo-Cobo, JM., 2011. Health care strategies for mental health problems in the prison environment, the Spanish case in a European context. *Revista Española de Sanidad Penitenciaria*, 13 (3), p. 100-11.
- Asch, SM., Damberg, CL., Hiatt, L., Teleki, SS., Shaw, R., Hill, TE., Benjamin-Johnson, R., Einsenman, DP., Kulkarni, SP., Wang, E., Williams, B., Yesus, A., Grudzen, CR., 2011. Selecting performance indicators for prison health care. *Journal of Correctional Health Care*, 17 (2), p. 138-49.
- Baillargeon, J., Binswanger, IA., Penn, JV., Williams, BA., and Murray, OJ., 2009. Psychiatric disorders and repeat incarcerations: the revolving prison door. *American Journal Psychiatry*, 166 (1), p. 103-9.
- Bedard, K., Frech, HE 3rd., 2009. Prison health care: is contracting out healthy? *Health Economics*, 18 (11), p. 1248-60.

- Binswanger, IA., Krueger, PM., and Steiner, JF., 2009. Prevalence of chronic medical conditions among jail and prison inmates in the USA compared with the general population. *Journal of Epidemiology & Community Health*, 63 (11), p. 912-9.
- Buscema, CA., Abbasi, QA., Barry, DJ., Lauve, TH., 2000. An algorithm for the treatment of schizophrenia in the correctional setting: the Forensic Algorithm Project. *Journal of Clinical Psychiatry*, 61 (10), p. 767-83.
- Butler, T., Boonwaat, L., Hailstone, S., Falconer, T., Lems, P., Ginley, T., Read, V., Smith, N., Levy, M., Dore, G., Kaldor, J., 2007. The 2004 Australian prison entrants' blood-borne virus and risk behaviour survey. *Australian and New Zealand Journal of Public Health*, 31 (1), p. 44-50.
- Cañas, MA., Cañas, J., Torre, MA., 2001. Estudio de utilización de psicofármacos en el centro penitenciario de León. Análisis comparativo. *Revista Española de Sanidad Penitenciaria*, 3(3), p. 103-10.
- Centers for Disease Control and Prevention (CDC)., National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention., 2006. Prevention and control of tuberculosis in correctional and detention facilities: recommendations from CDC. Endorsed by the Advisory Council for the Elimination of Tuberculosis, the National Commission on Correctional Health Care, and the American Correctional Association. *Morbidity and Mortality Weekly Report (MMWR)*, 55 (RR-9), p. 1-44.
- Council of Europe, 2010. Annual Penal Statistics. SPACE I. [online]. Available at: http://www.coe.int/t/dghl/standardsetting/prisons/SPACEI/PC-CP%282010%2907_E%20SPACE%20Report%20I.pdf.
- Damberg, CL., Shaw, R., Teleki, SS., Hiatt, L., Asch, SM., 2011. A review of quality measures used by state and federal prisons. *Journal of Correctional Health Care*, 17 (2), p. 122-37.
- El Global.net, 2009. La farmacia de prisiones se encuentra en un mundo paralelo que necesita una regulación. Available at: <http://www.elglobal.net/articulo.aspx?idart=402297&idcat=643&tipo=2>
- Fazel, S., and Danesh, J., 2002. Serious mental disorder in 23000 prisoners: a systematic review of 62 surveys. *Lancet*, 359 (9306), p. 545-50.
- Fazel, S., Bains, P., and Doll, H., 2006. Substance abuse and dependence in prisoners: a systematic review. *Addiction*, 101 (2), p. 181-91.

- Fazel, S. and Baillargeon, J., 2011. The health of prisoners. *Lancet*, 377 (9769), p. 956-65.
- Felman, YM., 1982. Sexually transmitted disease control services in a jail population; analysis and recommendations. *Bulletin of the New York Academy of Medicine*, 58 (6), p. 559-67.
- García-Guerrero, J., Marco, A., Saíz de la Hoya, P., Vera-Remartínez, EJ., 2010. Estudio multicéntrico de prevalencia de infección tuberculosa latente en los internados en prisiones españolas. *Revista Española de Sanidad Penitenciaria*. 12 (3), p. 79-85.
- García-Guerrero, J. and Marco, A. (in press). Sobreocupación en los centros penitenciarios y su impacto en la salud. *Revista Española de Sanidad Penitenciaria*. (Accepted for publication January 2012).
- Gatherer, A., Moller, L., Hayton, P., 2005. The World Health Organization European Health in Prisons Project after 10 years: persistent barriers and achievements. *American Journal of Public Health*. 95 (10), p. 1696-700.
- Harcouët, L., 2010. Hospital pharmaceutical practice in prison. *Annales Pharmaceutiques Francaises*, 68 (5), p. 286-90.
- Hartvig, P., Ostberg, B., 2004. Mental diseases and disorders among inmates in Norwegian prisons. *Tidsskrift for den Norske Laegeforening*, 124 (16), p. 2091-3.
- Hayton, P., van den Bergh, B., Moller, L., 2010. Health protection in prisons: the Madrid Recommendation. *Public Health*, 124 (11), p. 635-6.
- Jürgens, R., Csete, J., Amon, J., Baral, S., and Beyrer, C., 2010. People who use drugs, HIV, and human Rights. *Lancet*, 376 (9739), p. 475-85.
- Kamath, J., Temporini, H., Quarti, S., Zhang, W., Kesten, K., Wakai, S., Shelton, D., Trestman, R., 2010. Best practices: disseminating best practices for bipolar disorder treatment in a correctional population. *Psychiatric Services*, 61 (9), p. 865-7.
- Macias, J., Palácios, RB., Claro, E., Vargas, J., Vergara, S., Mira, JÁ., Merchante, N., Corzo, JE., Pineda, JÁ., 2008. High prevalence of hepatitis C virus infection among noninjecting drug users: association with sharing the inhalation implements of crack. *Liver International*, 28 (6), p. 781-6.

- Marco, A., Saíz de la Hoya, P., García-Guerrero, J., PREVALHEP Group, 2012. Estudio multicéntrico de prevalencia de infección por el VIH y factores asociados en las prisiones de España. *Revista Española de Sanidad Penitenciaria*, 14 (1), p. 19-27.
- Marco, A., Solé, N., Orcau, A., Escribano, M., del Baño, L., Quintero, S., Caylà, JA., 2012. Prevalence of latent tuberculosis infection in inmates recently incarcerated in a men's prison in Barcelona. *The International Journal of Tuberculosis and Lung Disease*, 16 (1), p. 60-4.
- Michel, L., and Maguet, O., 2005. Guidelines for substitution treatments in prison populations. *Encephale*, 31 (1 pt1), p. 92-7.
- Møller, L., Gatherer, A., van den Bergh, B., 2010. El actual reto de la Protección de la Salud: Por qué todos los ministerios de sanidad deberían considerar la Recomendación de Madrid. *Revista Española de Sanidad Penitenciaria*, 12 (2), p. 36-9.
- National Quality Forum, 2003. Roadmap for safety: National Quality Forum officially releases 30 safe practices for better healthcare. *The Quality letter for healthcare leaders*, 15 (7), p. 12-4.
- National Commission on Correctional Health Care, 2012. Certified Correctional Health Professional. Available at: <http://ncchc.org/accred/index.html>. Accessed February 3, 2012
- Novick, LF., 1976. The contractual model for prison health care. *Medical Care*, 14 (8), p. 694-9.
- Office of the United Nations High Commissioner for Human Rights. First United Nations Congress on the Prevention of Crime and Treatment of Offenders, 1955. Standard Minimum Rules for the Treatment of Prisoners. Available at: <http://www2.ohchr.org/english/law/treatmentprisoners.htm>. Accessed July 26, 2010.
- Piselli, M., Elisei, S., Murgia, N., Quartesan, R., Abram, KM., 2009. Co-occurring psychiatric and substance use disorders among male detainees in Italy. *International Journal of Law and Psychiatry*, 32 (2), p. 101-7.
- Saíz de la Hoya, P., Marco, A., García Guerrero, J., Rivera, A., Prevalhep Study Group, 2011. Hepatitis C and B prevalence in Spanish prisons. *European Journal of Clinical Microbiology & Infectious Disease*, 30 (7), p. 857-62.

- Saíz de la Hoya, P., and Viciano, P., 2002. CAPRI: Calidad asistencial en prisiones. Available at: <http://corporativo.congresosesp.es/sesp/S94/portada/inicio>, Accessed March 11, 2012.
- Saíz de la Hoya, P., Marco, A., Clemente, G., Portilla, J., and al, 2006. Expert recommendations for the diagnosis and treatment of chronic hepatitis C infection in the prison setting. *Enfermedades Infecciosas y Microbiología Clínica*, 24 (9), p. 568-75.
- Stern MF, Greifinger RB, and Mellow J, 2010. Patient safety: Moving the Bar in Prison Health Care Standards. *American Journal of Public Health*, 100 (11), p. 2103-10.
- Tennyson, DH., 2009. Predicting medication costs and usage: expenditures in a juvenile detention facility. *Journal of Correctional Health Care*, 15 (2), p. 98-104.
- Vescio, MF, Longo, B., Babudieri, S., Starnini, G., Carbonara, S., Rezza, G., Monarca, R., 2008. Correlates of hepatitis C virus seropositivity in prison inmates: a meta-analysis. *Journal of Epidemiology & Community Health*, 62 (4), p. 305-13.
- Vicens, E., Tort, V., Dueñas, RM., Muro, Á., Pérez-Arnau, F., Arroyo, JM., Acín, E., De Vicente, A., Guerrero, R., Lluch, J., Planella, R., Sarda, P., 2011. The prevalence of mental disorders in Spanish prisons. *Criminal Behaviour and Mental Health*, 21 (5), p. 321-32.
- Walmsley, R., 2008. World Prison Population List (eighth edition). [online]. International Centre for Prison Studies. Kings College London. Available at: http://www.kcl.ac.uk/depsta/law/research/icps/downloads/wppl-8th_41.pdf. [Accessed 24 febrer 2012]
- Wilper, AP., Woolhandler, S., Boyd, JW., Lasse, KE., McCormick, D., Bor, DH., and Himmelstein, DU., 2009. The health and health care of US prisoners: results of a nationwide survey. *American Journal Public Health*, 99 (4), p. 666-72.

Mental Illnesses

Ariel Eytan, Bruno Gravier

Introduction

Mental disorders and psychological suffering are highly prevalent in prison. General practitioners and psychiatrists who work in such settings frequently prescribe psychotropic drugs to their patients. In facilities for which data is available, usually large detention centers with dedicated medical services, it is estimated that approximately one in five detainees receives psychotropic medication. For example, in the largest remand prison of Switzerland 19% of the detainees are prescribed such drugs. Figures are similar for the prison of “La Santé” in Paris, France (article in preparation), for the prisons of the city of Lyon, France (Gravier and Chevry 1993) and for the prison of Valdemoro in Madrid, Spain (Algora-Donoso and Varela-Gonzalez 2008) (18%, 20.5% and 20% respectively). In England and Wales, 20% of the male and 50% of the female prisoners take some form of psychotropic medication (Bowen, Rogers et al. 2009).

Inmates’ accounts indicate that psychotropic medication is a key and valued form of support for people with mental health problems in custody (Bowen, Rogers et al. 2009). However, difficulties may arise when detainees try to obtain prescription drugs without medical justification. Benzodiazepines, but also some antidepressant or antipsychotic medications are sought after by detainees for addictive use or trafficking. Prisons’ administrations and security staff may also try to influence physicians to prescribe drugs without strict medical indication, in order to maintain a relatively quiet atmosphere and to control violence or protest in the facility. Therefore, it is especially important for clinicians to rely on strong professional experience and deontology in such context and to prescribe drugs solely to alleviate symptoms.

In a systematic literature review (Griffiths, Willis et al. 2012) it was identified that several potentially problematic issues must be addressed regarding psychotropic drug prescribing for prisoners: Firstly, poly-pharmacy is the

rule rather than the exception in prison settings. This is against most national and international recommendations in general psychiatry, like for example associating an oral atypical antipsychotic and a depot injection of a first generation antipsychotic. Insufficient response to mono-therapy is invoked as a motive for prescribing several drugs. So is a concern for leaving medications unchanged in order to avoid deterioration or to consolidate behavioural amelioration. Secondly, high dose therapy is reported in several articles, here again despite unfavourable expert opinion. Thirdly, concern was expressed regarding duration of treatment. Both insufficient trials of mono-therapy and long periods of high-dose anti-psychotic or benzodiazepine treatments were reported. Fourthly, documentation and monitoring of patients was consistently raised as an area needing improvement. Fifthly, ongoing legal procedures for remand detainees, isolation and the prison environment itself are sources of anxiety and distress, therefore requiring sedative medication.

Rates of mental illness in detainees

Several studies conducted during the last two decades have shown an increased prevalence of mental disorders among prisoners, compared with rates observed in the general population (Fazel and Lubbe 2005). A systematic review and meta-analysis published in 2002 concluded that, typically, about one in seven prisoners in Western countries has psychotic illnesses or major depression (Fazel and Danesh 2002). By comparison, in a large sample of the general population of six European countries the 12-month prevalence of major depression or of any mental disorder was 3.9% and 9.6% respectively (Alonso, Angermeyer et al. 2004). Most studies about psychiatric disorder in prisoners have shown a high prevalence of schizophrenic disorders and other psychotic illnesses. Reviewing 12 recent studies, Nielssen and Misrachi reported a prevalence of psychotic illnesses among remand prisoners ranging between 2.7% and 10% and among sentenced inmates between 1.7% and 8% (Nielssen and Misrachi 2005).

In a study conducted in French prisons, a sample of 800 male inmates had a psychiatric examination. Each prisoner was interviewed by two clinicians, at least one of them being a senior psychiatrist. One of the clinicians used a structured clinical interview; the second completed the procedure with an open clinical interview. Prevalence rates for a diagnosis given independently by both clinicians and for a consensual diagnosis were respectively: 3.8% (6.2%) for schizophrenia, 17.9% (24%) for major depressive disorder, 12.0%

(17.7%) for generalized anxiety and 10.8% (14.6%) for drug dependence (Falissard, Loze et al. 2006).

Most studies show no significant differences in rates of psychosis and depression between male and female prisoners or between remand and sentenced prisoners (Fazel and Seewald 2012), while some reports suggest that morbidity in mood disorders is higher for women than for men (Brink 2005).

Further research is needed to confirm whether higher rates of mental illness are found in low- and middle-income countries as well, since most data comes from western countries (Fazel and Seewald 2012). Important variations exist between different studies regarding the prevalence of specific mental disorders. According to some authors, methodological issues, such as sampling procedures and heterogeneity in diagnostic tools, account for a large proportion of these differences (Blaauw, Roesch et al. 2000).

Prisoners and specific mental disorders

Apart from the broad categories of affective and psychotic disorders which are over-represented in prison settings, some mental health problems deserve attention because of special links between these problems and the detention environment. These include adjustment disorders sometimes culminating in the initial shock of imprisonment, severe anxiety disorders and agoraphobia-type panic attacks and insomnia.

Suicide is an omnipresent preoccupation for authorities and health professionals working in prison. Several studies have shown that age-standardized rates of suicide among male prisoners are between five to eight times higher than in the general population (Blaauw, Kerkhof et al. 2005), and sometimes as high as fourteen times higher (Shaw, Baker et al. 2004). A review of the literature on suicide in jail indicated that suicide is the cause of death in up to 75% of jail and 50% of prison facilities, with suicide rates in correctional settings reported to be 4–11 times higher than in their respective home communities (Brink 2005). In a systematic review, risk factors associated with suicide in prisoners included white ethnicity, being male, being married, occupation of a single cell, suicidal ideation, history of attempted suicide, having a current psychiatric diagnosis, receiving psychotropic medication and having a history of alcohol use problems (Fazel, Cartwright et al. 2008). Some subgroups are at even higher risk, with suicide rates highest among the newly incarcerated, those in states of intoxication or withdrawal, and those

who are further compromised because of mental illness. Mental disorders rates seem to be higher in populations of young offenders, with a specific accent on post traumatic stress disorders (Brink 2005).

A review of the literature addressing substance abuse and dependence in prisoners showed a marked heterogeneity among studies, but, globally, prisoners are at an increased risk for drug and alcohol problems compared with the general population. The estimates of prevalence for alcohol abuse and dependence in male prisoners ranged from 18% to 30% and 10% to 24% in female prisoners. The prevalence estimates of drug abuse and dependence varied from 10% to 48% in male prisoners and 30% to 60% in female prisoners (Fazel, Bains et al. 2006). More specifically, several studies have noted strong associations between offending behavior and heroin and cocaine use (Stewart 2009).

Among specific problems, prisoners are also about ten times more likely to have antisocial personality disorder than the general population. In a meta-analysis, 47% of male prisoners and 21% of female prisoners were diagnosed with antisocial personality disorder (Fazel and Danesh 2002)

The use of medication for treating impulsive aggression in prison constitutes another area of interest. Anticonvulsants are usually considered as a first choice if there is no other specific diagnosis, but it remains unclear whether some frequently prescribed molecules (e.g. phenytoin and oxcarbazepine) are superior to the other anticonvulsants (Mattes 2012).

Prisoners' status

Although there is little empirical data on this, clinical experience indicates that the criminal status of the patient plays a role in relation to psychotropic drug use. On the one hand, a remand detainee, incarcerated for a short period of time, will potentially have to face a double stress: that of entry into prison and possible prison shock with separation from relatives and family, accompanied by uncertainty regarding the procedure and the possible prospects for release. On the other hand, a convict doing a long sentence will generally find some stability in the detention centre, including regarding his or her consumption of medication and drugs.

Treatment under coercion

The issue of coercion challenges the will of psychiatrists to practice an opened and de-stigmatized psychiatry where mental disorder is no longer considered synonymous with dangerousness. In this perspective, it is necessary for psychiatrists working in forensic settings to document rigorously their therapeutic decisions and to limit the coercive measures to the strict minimum. Simultaneously, the forensic psychiatrist must also handle the behavior of detainees in crisis and take care of patients who undergo a therapeutic measure ordered by law. Psychiatric care should be guided by the ethical developments that aim to reduce the suffering linked to involuntary hospitalizations and other measures of coercion (Gravier and Eytan 2011). We now know that therapeutic interventions under coercion can produce post-traumatic symptoms in nearly half of patients admitted to hospital following a psychotic episode, independently from the distress caused by the psychotic symptoms themselves (Meyer, Taiminen et al. 1999). Both the legal status of involuntary hospitalization and the use of threats or force imposed on the patient can produce counter-therapeutic stress symptoms (Bonsack and Borgeat 2005). It is reasonable to believe that coercion will also have an impact on drug treatments: in case of medication treatment given under coercion, placebo and nocebo effects will differ from those occurring in a voluntary setting. Placebo effects are likely to be diminished, while nocebo effects are probably increased. This may result in an overall decreased effectiveness of medication, as discussed by Meynen et al. (Meynen and Swaab 2011).

However, the contemporary social trend in most western countries does not facilitate the implementation of a more opened psychiatry, since public security has become a major concern. In France for example, the “zero tolerance” politics towards delinquent behaviour was accompanied in recent years by legislative changes that are in favour of coercion and that increase the responsibilities of psychiatrists as agents of social control. One of the effects of this evolution is a penalization of mental disorders, with a concomitant increase of the number of patients with mental illness in prison. It was argued that penalization of severely disordered, marginalized patients is not totally negative because it constitutes an opportunity for them to access care from which they would be otherwise deprived, but this is questionable (Moffic 2010).

Psychotropic medication adherence and other specific questions on medication prescription for mental illness in prison

Reviewing available data on medication adherence in prison settings, Shelton et al. (Shelton, Ehret et al. 2010) underline that medication non adherence among incarcerated persons with mental illness is associated with increased use of medical services, high levels of recidivism and increased risk of violent behaviour. According to the review by Shelton et al., the prison environment, among other factors, influence medication adherence among detained persons. Poor adherence is associated with lack of supervision by a healthcare professional and passive reception of medication, especially for prisoners with low level of insight. Supervision for medication intake and patients' education is usually difficult to organize in prison settings, due to insufficient medical staffing and organization constraints. Moreover, both low insight and poor adherence independently predict violence severity in forensic psychotic patients (Alia-Klein, O'Rourke et al. 2007). Lack of continuity of care between the prison and the community is a problem which is often encountered and associated with poor adherence to medication and relapse. Specific interventions designed to assist former detainees during the first weeks post-release appear to be beneficial (Jarrett, Thornicroft et al. 2012). Other non-specific factors such as medication side effects and detainees' socioeconomic characteristics should also be taken into account.

A problem with adherence to treatment may also arise when detainees are returned to an ordinary prison after a more or less prolonged period of hospitalization in a specialized psychiatric structure (Michel 2005). Not exceptionally, the return to prison is accompanied by treatment refusal or insufficient supervision. A new relapse can then occur and initiate a "revolving door" repetition between prison and psychiatric hospital.

The prescriber must also be aware of some symptomatic presentations which differ from what is observed in a medical practice in more usual settings. Indeed, psychic suffering may be expressed differently in prison than in the community. For example, behavioural disturbances and interpersonal conflicts can mask personal distress, anxiety and depression. More authentically depressive affects have to be elicited by the clinician (Gravier and Chevry 1993).

Problems with trafficking and poor adherence to psychotropic medication raise the issue of plasmatic drug monitoring. Measuring the blood concentra-

tion of drugs can be useful to supervise therapeutic effectiveness and side effects, and to validate the fact that the inmate has really taken his or her medication. The practitioner in this case is authorized to depart for the strict role of prescriber, but he or she must keep in mind that these investigations are part of the therapeutic relationship and that confidentiality must be preserved. In other words, drug monitoring should not be done by health care professionals on the demand of the penitentiary administration.

In order to overcome non-adherence and treatment refusal in severely ill individuals, several types of interventions aiming to empower patients were described in general psychiatry. These interventions encompass various forms of therapeutic contracts between health care providers and clients. Such contracts can be negotiated with patients when they are stabilized or during free intervals between acute episodes.

Advanced directives, a document intended to convey patient's preferences should he or she become incompetent in the future, is the most frequently described type of therapeutic contract (Campbell and Kisely 2009). Supposedly, advanced directives should be useful with some detainees but studies are scarce. According to a survey conducted in the US, a majority of jail administrators supported advanced directives (Scheyett, Vaughn et al. 2010). Not only do they encourage detainees' autonomy, but also they facilitate informational records and communication links with providers, both in the detention facility and in the community. Joint crisis plans promote the preparation of advanced directives through meetings between patients and mental health professionals (Henderson, Lee et al. 2009). They have been shown to reduce compulsory admissions and treatment in patients with severe mental illness (Henderson, Flood et al. 2004). The usefulness of joint crisis plans and advance directives in the context of incarceration certainly deserve further research.

Cultural differences

For multiple reasons, notably in relationship with socioeconomic precariousness, the prison population is very diverse from an ethno-cultural perspective in most western countries. This is especially the case in urban settings and among remand prisoners, for which the absence of permanent residency and social integration can be a criteria for prolonging detention. In the United States of America, non-whites are over represented in prison compared with

the general population (Primm, Osher et al. 2005). In Switzerland, the proportion of foreigners is almost 30% in the general population and 90% in some detention centres, like in the main prison of Geneva (Eytan, Haller et al. 2011).

It is important to take into account this ethno-cultural diversity when planning a psychotropic treatment. Interethnic variations in the metabolism of drugs are well described, with differences in rates of poor, intermediate, rapid and ultra-rapid metabolizers due to genetic polymorphism and variability across populations. However, cultural factors and culture – biology interactions exert even more powerful effects on psychotropic responses than purely genetic factors (Lin, Smith et al. 2001). These include attribution of causes of various disorders (e.g. somatic vs. spiritual/divine), patients' expectations and attitudes toward psychotropic medication and clinicians' prejudice towards culturally diverse patients.

In the USA, it was demonstrated that African American patients hospitalized in psychiatry are less likely to receive the newer antipsychotics compared with white Americans (Opolka, Rascati et al. 2004). They are also more likely to receive depot antipsychotics (Kuno and Rothbard 2002). In a survey conducted in the Texas prison system, psychotic black males and females were prescribed atypical antipsychotic agents less frequently and typical agents more frequently than their counterparts (Baillargeon and Contreras 2001). As detainees, independently of their ethnic origin, tend also to receive higher doses of medication and more psychotropic drugs in association compared with non-incarcerated patients (cf. above), these two patients' characteristics (prisoner status and coming from a cultural minority) could reinforce each other to cause overmedication.

Taking care of detainees with mental disorders

Prisons are pathogenic places: between overpopulation, restriction of space and movements, and psychic, physical and sexual violence, the repercussions of imprisonment on mental health are well-known. As mentioned above, the number of prisoners suffering from psychiatric problems is very high. What is the finality of psychotropic medication when we cannot propose psychological support, psychotherapeutic and socio-therapeutic accompaniment that the patient requires? These are questions that any psychiatrist working in correctional structures has to consider. The issue is even more complex knowing

that the prescribed drugs may be diverted of their use or trafficked, but that at the same time they are in many situations the only available response to psychic suffering.

In most countries, human resources are insufficient to ensure professional and adequate psychiatric care in prison. Blaauw et al. estimates that the ratio inmates/mental health care staff varies from 100:1 to 200:1 in most European countries (Blaauw, Roesch et al. 2000). Among the 13 European countries studied, none had a sufficient number of psychiatric beds for hospitalizing detainees with severe mental disorders. This in turn reinforces the recourse to prescription of psychotropic drugs in prisons, where medication constitute the main part of psychiatric treatment.

Among psychotropic drugs, (Jaeger and Monceau 1996) emphasize in their study that, “not surprisingly” benzodiazepines and sedative antipsychotics are, by far, the most largely used psychotropic drugs. They note that, on the other hand, the use of antidepressants is very limited. A study conducted in a sample of 671 persons in the prisons of Quebec, found that the most commonly prescribed category of drugs was antipsychotics, followed by antidepressant and anxiolytic/hypnotic medications (Lafortune and Vachere). When considering the consummation of this same sample during the five years preceding the study, which thus also included the period before incarceration, the class of drugs most commonly prescribed was anxiolytics / hypnotics, followed by antidepressants and antipsychotics. They conclude that anxiolytic drugs tend to be replaced by atypical antipsychotics during incarceration. Lafortune also underlines that the prescription of psychotropic drugs in prison is strongly influenced by psychosocial characteristics, such as the age or the sex of the individual, especially when the main diagnostic is a moderate or a transitional mental disorder.

The prison environment itself leads to considerable variations in the prescriptions owing to many factors, which have to do at the same time with the staffing and qualifications of specialized medical professionals, the tensions existing in the institutions, the overpopulation and the type of management of the institution. Thus, there are considerable variations in the quantity of psychotropic drugs prescribed from one penal institution to another.

The prescription of psychotropic drugs does not strictly correlate with psychiatric morbidity, but depends on many other factors such as the prison environment and the anxiety it generates, the lack of specialized medical staff

and the magnitude of addictive behaviours. It is thus particularly important to document rigorously any drug prescription and to refer to rules of good practice which, while keeping in mind the particularities of the penal environment, clearly define the prescription as a response to a diagnosed disorder or identified health problem. It is also clear that the prescription of psychotropic medication should not be an alternative to the lack of mental health professionals. In parallel, these professionals should advocate for resources in order to provide other types of recognized therapies such as psychotherapy and social rehabilitation.

Conclusion

In this chapter, we reviewed literature data on psychotropic medication prescribing in detention. Based on this information, the following recommendations can be proposed to physicians (GPs and psychiatrists) working in prison settings. Mental disorders are highly prevalent in prison and health professionals have an essential role to play in the screening and treatment of these disorders.

Clinicians should pay attention to signs of mental health problems and identify detainees with acute psychic suffering, including withdrawn individuals (who may be depressed and at risk of suicide).

Clinicians should be able to recognize and treat mental disorders which are particularly frequent in prison: substance abuse disorders, dual diagnosis (substance abuse and schizophrenia), insomnia, adjustment disorders and anxiety disorders.

Clinicians should follow the guidelines and standards of good practice adopted in general psychiatry. This is important in order to avoid overmedication and restrain poly-pharmacy. Having a pharmacist feedback may contribute to reduce long-term, high dosage prescriptions and improve the overall prescribing practices in prison (Lerat, Cabelguenne et al. 2011).

Whenever possible, avoid the prescription of psychotropic drugs which are often trafficked in prison, such as benzodiazepines.

Psychotropic medication should be prescribed for medical indications only. Prescription should allow for a regular assessment of symptoms and provide the support and listing essential to the clinical response to mental suffering.

Treatment is given with the patient's consent. If a treatment under constraint is necessary for psychiatric reasons (acute mental disorder and imminent dangerousness), consider hospitalization in psychiatry.

Take into account the ethno-cultural identity of the patient when making a treatment plan. Consider using instruments such as the Diagnostic and Statistical Manual of Mental Disorders (DSM) cultural formulation (Aggarwal 2012).

Consider interventions to improve medication adherence, such as advance directives and joint crisis plans, not only during detention but also during periods of transition between the prison and the community.

References

- Aggarwal, N. K. (2012). "Adapting the cultural formulation for clinical assessments in forensic psychiatry." *J Am Acad Psychiatry Law* **40**(1): 113-118.
- Algora-Donoso, I. and O. Varela-Gonzalez (2008). "[Psychoactive drugs and costs in the Madrid III (Valdemoro) prison]." *Farm Hosp* **32**(6): 331-338.
- Alia-Klein, N., T. M. O'Rourke, et al. (2007). "Insight into illness and adherence to psychotropic medications are separately associated with violence severity in a forensic sample." *Aggress Behav* **33**(1): 86-96.
- Alonso, J., M. C. Angermeyer, et al. (2004). "Prevalence of mental disorders in Europe: results from the European Study of the Epidemiology of Mental Disorders (ESEMeD) project." *Acta Psychiatr Scand Suppl* (420): 21-27.
- Baillargeon, J. and S. A. Contreras (2001). "Antipsychotic prescribing patterns in the Texas prison system." *J Am Acad Psychiatry Law* **29**(1): 48-53.
- Blaauw, E., A. J. Kerkhof, et al. (2005). "Demographic, criminal, and psychiatric factors related to inmate suicide." *Suicide Life Threat Behav* **35**(1): 63-75.
- Blaauw, E., R. Roesch, et al. (2000). "Mental disorders in European prison systems. Arrangements for mentally disordered prisoners in the prison systems of 13 European countries." *Int J Law Psychiatry* **23**(5-6): 649-663.

- Bonsack, C. and F. Borgeat (2005). "Perceived coercion and need for hospitalization related to psychiatric admission." *Int J Law Psychiatry* **28**(4): 342-347.
- Bowen, R. A., A. Rogers, et al. (2009). "Medication management and practices in prison for people with mental health problems: a qualitative study." *Int J Ment Health Syst* **3**(1): 24.
- Brink, J. (2005). "Epidemiology of mental illness in a correctional system." *Curr Opin Psychiatry* **18**(5): 536-541.
- Campbell, L. A. and S. R. Kisely (2009). "Advance treatment directives for people with severe mental illness." *Cochrane Database Syst Rev*(1): CD005963.
- Eytan, A., D. M. Haller, et al. (2011). "Psychiatric symptoms, psychological distress and somatic comorbidity among remand prisoners in Switzerland." *Int J Law Psychiatry* **34**(1): 13-19.
- Falissard, B., J. Y. Loze, et al. (2006). "Prevalence of mental disorders in French prisons for men." *BMC Psychiatry* **6**: 33.
- Fazel, S., P. Bains, et al. (2006). "Substance abuse and dependence in prisoners: a systematic review." *Addiction* **101**(2): 181-191.
- Fazel, S., J. Cartwright, et al. (2008). "Suicide in prisoners: a systematic review of risk factors." *J Clin Psychiatry* **69**(11): 1721-1731.
- Fazel, S. and J. Danesh (2002). "Serious mental disorder in 23000 prisoners: a systematic review of 62 surveys." *Lancet* **359**(9306): 545-550.
- Fazel, S. and S. Lubbe (2005). "Prevalence and characteristics of mental disorders in jails and prisons." *Curr Opin Psychiatry* **18**(5): 550-554.
- Fazel, S. and K. Seewald (2012). "Severe mental illness in 33 588 prisoners worldwide: systematic review and meta-regression analysis." *Br J Psychiatry* **200**: 364-373.
- Gravier, B. and P. Chevry (1993). "Du bon usage des psychotropes en milieu pénitentiaire." *L'Evolution Psychiatrique* **58**(1): 93-107.
- Gravier, B. and A. Eytan (2011). "[Ethical issues in psychiatry under coercion]." *Rev Med Suisse* **7**(309): 1806, 1808-1811.
- Griffiths, E. V., J. Willis, et al. (2012). "A systematic review of psychotropic drug prescribing for prisoners." *Aust N Z J Psychiatry* **46**(5): 407-421.

- Henderson, C., C. Flood, et al. (2004). "Effect of joint crisis plans on use of compulsory treatment in psychiatry: single blind randomised controlled trial." *BMJ* **329**(7458): 136.
- Henderson, C., R. Lee, et al. (2009). "From psychiatric advance directives to the joint crisis plan." *Psychiatr Serv* **60**(10): 1390-1391.
- Jaeger, M. and M. Monceau (1996). *la consommation de médicaments psychotropes en prison* Eres.
- Jarrett, M., G. Thornicroft, et al. (2012). "Continuity of care for recently released prisoners with mental illness: a pilot randomised controlled trial testing the feasibility of a Critical Time Intervention." *Epidemiol Psychiatr Sci* **21**(2): 187-193.
- Kuno, E. and A. B. Rothbard (2002). "Racial disparities in antipsychotic prescription patterns for patients with schizophrenia." *Am J Psychiatry* **159**(4): 567-572.
- Lafortune, D. and M. Vacheret (2009). "La prescription de médicaments psychotropes aux personnes incarcérées dans les prisons provinciales du Québec." *Santé Mentale au Québec* **34**: 147-170.
- Lerat, M. C., D. Cabelguenne, et al. (2011). "Impact of pharmacist and clinician dual intervention on prescribed benzodiazepines in prisoner patients: a retrospective study." *Fundam Clin Pharmacol* **25**(6): 762-767.
- Lin, K. M., M. W. Smith, et al. (2001). "Culture and psychopharmacology." *Psychiatr Clin North Am* **24**(3): 523-538.
- Mattes, J. A. (2012). "Medications for aggressiveness in prison: focus on oxcabazepine." *J Am Acad Psychiatry Law* **40**(2): 234-238.
- Meyer, H., T. Taiminen, et al. (1999). "Posttraumatic stress disorder symptoms related to psychosis and acute involuntary hospitalization in schizophrenic and delusional patients." *J Nerv Ment Dis* **187**(6): 343-352.
- Meynen, G. and D. F. Swaab (2011). "Why medication in involuntary treatment may be less effective: the placebo/nocebo effect." *Med Hypotheses* **77**(6): 993-995.
- Michel, L. (2005). *Les thérapeutiques médicamenteuses*. Paris, Heures de France.
- Moffic, H. S. (2010). "Better off in prison?" *Behav Healthc* **30**(2): 26, 28-29.

- Nielssen, O. and S. Misrachi (2005). "Prevalence of psychoses on reception to male prisons in New South Wales." *Aust N Z J Psychiatry* **39**(6): 453-459.
- Opolka, J. L., K. L. Rascati, et al. (2004). "Ethnicity and prescription patterns for haloperidol, risperidone, and olanzapine." *Psychiatr Serv* **55**(2): 151-156.
- Primm, A. B., F. C. Osher, et al. (2005). "Race and ethnicity, mental health services and cultural competence in the criminal justice system: are we ready to change?" *Community Ment Health J* **41**(5): 557-569.
- Scheyett, A. M., J. S. Vaughn, et al. (2010). "Jail administrators' perceptions of the use of psychiatric advance directives in jails." *Psychiatr Serv* **61**(4): 409-411.
- Shaw, J., D. Baker, et al. (2004). "Suicide by prisoners. National clinical survey." *Br J Psychiatry* **184**: 263-267.
- Shelton, D., M. J. Ehret, et al. (2010). "Psychotropic medication adherence in correctional facilities: a review of the literature." *J Psychiatr Ment Health Nurs* **17**(7): 603-613.
- Stewart, D. (2009). "Drug use and perceived treatment need among newly sentenced prisoners in England and Wales." *Addiction* **104**(2): 243-247.

Infectious Diseases

Laurent Getaz, Alejandra Casillas, Jean-Pierre Rieder, Hans Wolff

Introduction

Access to effective treatments for infectious diseases is critical in detention. As one of the pillars of infectious disease control, treatment benefits not only inmates but also the community at large. We describe the main principles of treatment, targeting the most frequent infectious diseases and also those infections that carry the risk of an epidemic outbreak. Antibiotic resistance is another subject of interest in the detention setting, not only for tuberculosis but also for other bacterial and viral diseases. The threat of antibiotic resistance reinforces the absolute need for strict implementation of sound, evidence-based medical practice and guidelines when delivering health services.

Given the living conditions, individual behaviors, and life circumstances, the prevalence of infectious diseases like HIV, hepatitis B and hepatitis C, Chlamydia, syphilis and tuberculosis are higher among newly incarcerated inmates than in the general population. Inmates are at high risk for the acquisition of sexually transmitted infections, blood and air-borne pathogens when they are incarcerated (Laticevschi 2007, Hammett 2002, Niveau 2006, Flanigan 2009).

It is important to recognize that inmates do not live in a closed environment. They are in contact with visitors, prison staff, and at the end of the incarceration return to the community. The prison setting is a reservoir for transmission of communicable diseases like TB, HIV and STI. Implementation of infectious disease control measures benefits not only inmates and prison staff, but these efforts also protect the community at large. (La Fleur 2012, Wolfe 2001, Veen 2007, Bick 2007, Laticevschi 2007). Prison should be considered an opportunity to implement effective interventions aimed at reducing the spread of communicable diseases within and outside the prison population (Hunt 2009). Several types of intervention programs must be combined to

achieve this goal: health education, screening, risk reduction, and vaccination. However, all these approaches must include the prescription of effective treatments. Screening programs that are not followed by standard-of-care treatment to sick inmates are potentially counterproductive, and unethical. Finally, aspects of health care such as access and adherence can be better addressed in this detained setting. Many individuals have poor access to health services outside the prison and achieving adherence to treatment can be easier in prison – thus, it is important to take advantage of the time when the individual is in this setting (Laticevschi 2007, Skipper 2003, Lobato 2003).

Therapeutic guidelines from the local community's health system must be adopted within health correctional facilities, in accordance with the principle of equity and to facilitate the continuity-of-care of persons released during treatment. Moreover, high-quality hand-offs and coordination between community services and prison health services are necessary to improve continuity-of-care. Access to treatment against infectious diseases for prisoners is a priority, especially when it comes to hepatitis C, tuberculosis, HIV and STIs (Niveau 2006). These treatments not only save lives but also constitute part of the most effective prevention measures against transmission.

Bloodborne infectious diseases

Worldwide, prevalence of HIV, hepatitis B virus and hepatitis C virus are higher in detention than in the community. Chronic HBV ranges from 3.1-25.5% while HCV is at 2-58% (Hunt 2009). Transmission of these three viral diseases while in custody is a major public health problem. Worldwide, studies have documented HBV incidence rates in custody ranging from 0.8% to 3.8%, and 0.4% to 3.3% for HCV (Weinbaum 2005, Hammett 2006).

Tab. 1 treatment of bloodborne diseases

	First.line treatment	Alternative	Comments
HIV	Ritonavir-boosted PI or Integrase inhibitor + A dual NRTI component (Tenofovir/FTC)	1 NNRTI + A dual NRTI component (Tenofovir/FTC)	Indication for treatment according to community national guidelines.
Hepatitis B	Interferon α or nucleoside/nucleotide analogs		Indication for treatment according to HBeAg, HBV DNA, ALAT and liver biopsy
Hepatitis C	Pegylated interferon + Ribavirin (+ Telaprevir or Boceprevir only for genotype 1)		Duration of therapy according to genotype and response

PI = protease inhibitor, NRTI = nucleoside reverse transcriptase inhibitor, NNRTI = non-nucleoside reverse transcriptase inhibitor

Human Immunodeficiency virus (HIV)

Highly active antiretroviral therapy (HAART) does not cure HIV, but it transitions the infection into a chronic and manageable disease condition. HAART significantly reduces opportunistic infections, mortality, and also decreases HIV transmission. In custody, criteria for initiation of HAART therapy and choice of medication should be in accordance with national and WHO guidelines. Treatment of HIV in correctional setting is definitely possible and proves to be effective, as these outcomes are comparable to community cohorts when appropriate clinical HIV care is provided (Wakeman 2010). In providing services to HIV patients other considerations are important (in addition to effective medication), and potentially challenging, in the correctional setting. Patient confidentiality is a top priority as HIV patients are often stigmatized and even subjected to violence, when confidentiality rules are not observed. In a setting lacking confidentiality, HIV testing would possibly be detrimental to the patient’s safety. To maintain confidentiality, examination rooms needs to be out of earshot of other inmates and correctional officers. HIV medication should be distributed in the same way it is done for other diseases (schedule and manner), and distributed by the medical

team. Distribution of HAART in a specific and noticeable way should be prohibited (Wakeman 2010).

Total adherence to treatment is essential to prevent the emergence of antiviral resistance. Disadvantaged populations such as patients with mental illnesses and addictions have lower adherence rates (Lucas 2011). Adjuvant methadone program (targeting patients with addiction) and newer regimens with once-daily dosing all improve adherence to HAART (Uhlmann 2010). Among patients with risk factors for decreased adherence, regimens containing non-nucleoside reverse transcriptase inhibitors (NNRTIs) should be avoided. Indeed, NNRTIs in particular have an unfavourable adherence-resistance relationship (Ekstrand 2011). Another challenge is the continuity of treatment within the prison system especially during the transition period from the correctional facility and into the community. Most failures of HIV treatment occur during this time. For this reason, coordination with community care providers is needed to enhance the continuity of HIV treatment, and also any other critical therapies such as treatments for substitution therapy and mental illness. Moreover, coordination with social services and public assistance is required. Homelessness and poverty are unfortunately very common situations after release and highly related with relapse to addiction and lack of adherence to HAART (Wakeman 2010, Beckwith 2010)

Hepatitis B virus (HBV)

The goal of chronic hepatitis B treatment is suppression of HBV replication within the patient, in order to prevent cirrhosis and hepatocellular carcinoma, and to prevent transmission to others. Unfortunately, no data has been published addressing the treatment of chronic HBV in the correctional setting (Hunt 2009). Nevertheless prisoners need to be treated according to the same standard of care provided to patients in the community. Inmates should be evaluated and patients-in-need can be treated according to current national guidelines. For example, in Europe, this would include recommendations by the European Association for the Study of the Liver, also known as EASL (EASL 2009). The therapeutic options available in Europe include interferon α and nucleoside/nucleotide (NUC) analogs. Interferon is considered a moderate antiviral agent and frequently causes adverse effects. Nevertheless, its main advantage is the absence of resistance, finite treatment duration, and a more lasting response when compared to other options. The main disadvantage of early-generation NUCs (lamivudine and adefovir) is a high virus

resistance rate. Conversely, the latest agents, Entecavir® and Tenofovir®, are both potent HBV inhibitors with an optimal resistance profile. The EASL guidelines recommend pegylated interferon, Entecavir®, or Tenofovir® as a first-line treatment (EASL 2009). According to Colombo et al, Tenofovir® is a cost-effective therapy in patients with chronic hepatitis B (Colombo 2012). In correctional settings, adherence to treatment to prevent early resistance, and promotion of continuity of care are key factors to consider before deciding on treatment course. Most patients receiving NUCs will require at least four to five years of treatment, and some may require indefinite treatment (Lok 2012).

Hepatitis C Virus (HCV)

Tan et al. (2008) demonstrated that treatment of inmates with chronic HCV with pegylated interferon-ribavirin dual therapy is clearly cost-saving, except for patients infected with genotype 1 (Tan 2008). But this exception is addressable by simply adding Telaprevir® or Boceprevir® to DT for patients infected with HCV genotype 1. The triple therapy with pegylated-interferon (Peg-INF) alpha, ribavirin, Boceprevir® or Telaprevir® is more effective than DT in the treatment of patients with genotype 1 and also cost-effective compared with DT (Camma 2012). However, Peg-INF and ribavirin trigger complex antiviral, immune-modulatory and anti-proliferative actions that can cause leucopaenia, alterations in the cytokine networks and ultimately reactivate cases of tuberculosis. Particularly in correctional settings, characterised by high prevalence of latent tuberculosis, tuberculin skin test (TST) or interferon gamma release assays must be done systematically before initiating this type of treatment (Babudieri 2012).

Flanigan *et al.* propose that an evaluation for HCV treatment be done with individuals sentenced to more than one year in prison. Time less than a year is considered too short a time for thorough HCV evaluation and treatment completion, given the frequent lack of stable post-release follow-up (Flanigan 2009). Since a majority of HCV-infected inmates are imprisoned for less than one year's time, increased and improved collaboration between correctional and public health systems for post-release continuity of care is essential to expand the pool of potential candidates for antiviral treatment. Moreover in the developed world, 30% of inmates infected with HIV are co-infected with HCV (Cowan-Dewar 2011). Co-infection accelerates the progression to cirrhosis, and underscores the urgency to treat the patient as soon as possible.

Moreover, to better care for prisoners with chronic hepatitis C, alcohol consumption (which also accelerates the progression to cirrhosis), must be addressed during incarceration to minimize the risk of alcoholic use when they return back to the community.

Post-exposure prophylaxis for blood-borne infections

Evidence from community-based studies demonstrates that provision of post-exposure treatments is beneficial to prevent HIV and hepatitis B after percutaneous exposure (e.g., needle sharing, human bite) or mucosal exposure (e.g. sexual, violent altercation). As recommended by the WHO, UNODC and UNAIDS, the correctional system should ensure that post-exposure prophylaxis be available in order to reduce the risk for HIV or HBV transmission (Jürgens 2011). After such an exposure, inmates should undergo an evaluation to determine if post-exposure prophylaxis is required according to the national reference guidelines. Ideally, post-exposure therapy should be initiated within 24 hours after an incident occurs. This time frame is a critical window in which to maximize the efficiency of prophylaxis and thus substantially decrease risk for transmission. HIV prophylaxis is considered useful up until 72 hours after the exposure. For hepatitis B, the window period is up to seven days after the incident in the case of parenteral exposure, and 14 days in cases of sexual exposure. It is important to know that post-exposure prophylaxis should be initiated as soon as possible. Therefore all exposure should be considered as medical emergencies within correctional facilities. These treatment time intervals are useful to know as prisoners usually ask for medical assistance some time after the exposure incident occurred. Four weeks of HAART treatment limits the risk of HIV transmission. Drug side-effects should be monitored every two weeks. In cases of suspected hepatitis B exposure, specific immunoglobulins are given in combination with the initiation of an accelerated vaccination schedule as soon as possible (Guilbert 2012, Weinbaum 2003, Jürgens 2011)

Air-borne diseases

Many airborne diseases carry with them a high potential for transmission in settings like prison. In addition to tuberculosis, one should also consider influenza, chickenpox, measles, mumps and *Neisseria meningitides* (Gétaz 2011, Walkty 2011, Turner 2010, Almeida-Gonzalez 2004).

Tab. 2 treatment of airborne diseases

	Treatment	Comments
Pulmonary tuberculosis	INH + RIF + PZA + ETB 8 weeks then INH+RIF 18 weeks	– Sometimes adapted for national guidelines according to local resistance epidemiology. – Duration of initial and continuation phases according to monitoring (sputum) evolution, chest X-ray (evaluate for cavitating lesion)
Chickenpox	Acyclovir 800mg 5x/day 5-7 days or Valaciclovir 1000 mg 3x/day x5 days	– initiate within 24h symptoms onset
Influenza	Oseltamivir 75 mg orally bid, 5 days or Zanamivir 10 mg (2 inhalations) bid, 5 days	– Initiate within 48h symptoms onset

bid = twice a day, tid = 3 times a day

Tuberculosis (TB)

In many prisons, the rates of TB are 10 to 100 times higher than in the community. The two main strategies for control are early diagnosis and effective treatment (Veen 2007). To promote early case detection, medical screening at prison system is essential. This is especially necessary in prisons with high tuberculosis incidence settings, where in addition, proactive searches for tuberculosis cases should be conducted in the entire prison population at regular time intervals (Veen 2007, CDC 2006). Screening for symptoms using standardized questionnaires is useful, but not always very sensitive. Prisoners should receive health education to improve symptom awareness and self-referral. Other diagnostic tools can be combined: tuberculin skin test (PPD), chest radiography, and the new interferon-gamma release assays, whose usefulness in diagnostic algorithms is under investigation but appears promising (Mouriño 2011). Prescription of effective treatment according to national guidelines (which take into account the local resistance to antibiotics) is essential. For the majority of patients, treatment consists of an initial two-month phase of isoniazid, rifampicin, pyrazinamide and ethambutol. This is followed by a continuation phase of isoniazid and rifampicin for at least four

months, using directly observed therapy (DOT) throughout the entire course of therapy whenever feasible (CDC 2006). Effective treatment must be regularly taken in a setting where trained health care workers or another designated individual provides the prescribed TB drugs and watches the patient swallow every dose. DOT is very important for preventing the development of drug resistance. Regimen selection should consider the frequency of observed dosing feasible in the current setting. In addition, drug dosage varies according to its frequency (daily or three times a week) (Abdool-Karim 2010). Drug-susceptibility should be performed on all initial *M. tuberculosis* isolates. When results from drug-susceptibility tests become available, the treatment regimen should be adjusted accordingly (CDC 2006). Every infectious inmate must be promptly isolated. Isolation does not entail the use of punishment/isolation chambers as this would increase the proportion of sick prisoners willing to hide their symptoms in order to avoid what they perceived as a torturing experience. If an inmate is released while treatment is underway, information exchange between the prison and health care services outside of the prison should take place in order to ensure continuity of care (Veen 2007).

Not only is tuberculosis incidence higher in prison than in the community, but this is also the case for latent infection with *M. tuberculosis*. In cases of co-infection with HIV, the risk of active disease is 113 times higher versus those without HIV infection (Goletti 1996). Substance abuse, low body weight, diabetes mellitus and immunosuppressive treatments can also contribute to infection risk through a weakening of the immune system (Laticevschi 2007, Restrepo 2007). Therefore treatment of latent tuberculosis should be prioritized for inmates presenting to detention with any of these risk factors.

Chickenpox (Varicella)

Chickenpox is a major concern in custody. It is a highly contagious viral disease with more complications and a higher mortality if experienced as an adult. Illness evolution is worse among immuno-suppressed patients. The influx of inmates from tropical countries and the overcrowding factor both increase the risk of chickenpox epidemics in prison. High ambient temperatures and humidity in the tropics may inactivate varicella zoster virus, which then explains the lower incidence among children, and subsequently higher susceptibility in adults in these regions. When a case or an outbreak occurs in

prison, post-exposure vaccination and quarantine must be planned in order to limit the spread (Gétaz 2010). Acyclovir® or Valacyclovir® initiated within 24 hours of rash onset reduces the duration and severity of symptoms (Wallace 1992).

Influenza

Access to annual influenza vaccination should be guaranteed for prisoners at risk for worse flu outcomes (those with chronic medical disease), especially when inmates have a higher burden of most chronic medical conditions versus the general population (Binschwanger 2009). Due to the vulnerable nature of prisoners and difficulties in managing outbreaks in prison, some authors recommend offering vaccination to all inmates and staff members (Robinson 2011). According to the antiviral treatment recommendations by the Centers for Disease Control and Prevention (CDC), individuals with symptoms of influenza and confirmed or suspected influenza virus infection who are either severely ill or at high risk for complications should receive antiviral therapy. The following list is not exhaustive, but summarizes the most common indications one might encounter in detention which would trigger flu treatment: chronic liver disease, pulmonary disease (including asthma), diabetes mellitus, cardiovascular disease (except isolated hypertension), adults ≥ 65 years of age, pregnant women, hemoglobinopathies such as sickle cell disease (migrants from Africa), active malignancy, chronic renal insufficiency and morbid obesity (Body Mass Index ≥ 40) (Zachary 2012). Treatment should be initiated as soon as possible since antiviral therapy is most likely to provide benefit when started within the first 48 hours of illness. Two classes of antiviral drugs are available for the treatment of influenza. The neuraminidase inhibitors (Zanamivir® and Oseltamivir®) are active against both influenza A and B. Adamantanes (Amantadine® and Rimantadine®) was only active against influenza A, nevertheless it is no longer recommended for use as resistance is very common. Care providers in detention should review local influenza surveillance data during influenza season to determine which types of influenza are circulating, and as well should document antiviral resistance patterns (Zachary 2012).

Meningococcal meningitis

Crowded conditions in the correctional setting are the main risk factor in the spread of *Neisseria meningitidis* and a contributor to the high rate of colonization among inmates (Almeida-Gonzales 2004). The mass media has reported on prison outbreaks located often in sub-saharan Africa. Tappero *et al.* demonstrated that an outbreak in an American jail spread to the community; inmates had colonization rates approaching 20 percent (Tappero 1996). Current recommendations for the prevention of meningococcal disease include antibiotic chemoprophylaxis for close contacts of persons with invasive disease and vaccination of a targeted population at increased risk during an outbreak of vaccine-preventable meningococcal disease (A, C, Y or W135 serogroups). The new conjugated vaccines (not only against serogroup C, but also A, Y and W135) should be used. Conjugated vaccines also provide indirect protection to unvaccinated individuals through herd immunity by reducing nasopharyngeal carriage (Pelton 2009). Moreover, during an outbreak in the prison setting, close observation of contacts is essential in order to treat all possible cases with appropriate antibiotics immediately

Food-borne diseases

Tab. 3 treatment of enteric diseases

	First-line treatment	Alternative	Comments
Mild diarrhea (≤ 3 unformed stools/day, minimal associated symptomatology)	Fluids		
Moderate diarrhea (≥ 4 unformed stools/day &/or systemic symptoms)	Fluids \pm anti-motility agent		
Severe diarrhea (≥ 8 unformed stools/d &/or fever $> 38.5^\circ$, blood in stools)	Fluids + Ciprofloxacin 500mg bid 3-5d	TMP-SMX-DS bid 3-5 days or Azithromycine* 500mg 1x/day 3 days	*Campylobacter resistant to FQ and TMP-SMX common in tropics and possibly in prison settings

FQ = Fluoroquinolone, TMP-SMX-DS = Trimethoprim-sulfamethoxazol double strength

Gastroenteritis and food poisoning are common health problems in correctional institutions. Outbreaks characterized by high attack rates are common, due to the unique characteristics of this setting. According to Greig et al. and other recent reports, bacterial agents are associated with 76% of these outbreaks, with the most frequent agent being *Salmonella ssp.*, followed by *Clostridium perfringens*, *Escherichia coli*, *Campylobacter ssp.*, *Staphylococcus aureus*, *Vibrio cholera*, *Bacillus cereus*, *Clostridium botulinum* and *Shigella ssp.* Viral agents are associated with 21% of outbreaks (Norovirus, rotavirus and hepatitis A). Parasites like *Cryptosporidium parvum*, are rarely the cause of these outbreaks (Greig 2011, Ranjbar 2010, Luchs 2011).

In these situations, health delivery services are faced with a massive and sudden influx of patients. Although gastrointestinal illness is generally of short duration, a higher proportion of people in correctional settings are at risk for illness complications, due to underlying medical conditions (HIV, chronic liver disease and poor nutrition). When medical services are acutely confronted with high patient volume, an algorithm of care must be implemented. Before an etiological diagnosis is confirmed, effective infection control measures should be reinforced (e.g. enhancing hand-washing, excluding ill food handlers). Only those patients meeting severity presentation criteria or who are at risk factors for complications if infected should undergo a detailed medical consultation and physical exam. Hydration support and possibly symptomatic treatment should be sufficient for all others. Primary treatment of gastroenteritis is fluid and electrolyte replacement. The oral rehydration solution can be prepared by adding one-half teaspoon of salt, one-half teaspoon of baking soda, and four tablespoons of sugar to one litre of water (3.5gm sodium chloride, 2.5gm sodium bicarbonate, 15gm potassium chloride, 20gm glucose). The anti-motility agent Loperamide® may be used for symptomatic treatment in patients with acute diarrhoea in whom fever is absent and whose stools are non-bloody. Randomized controlled trials have demonstrated that antibiotic therapy was only beneficial in cases where patients had more than eight bowel movements per day, fever, and bloody diarrhoea or immuno-suppression. First-line empiric therapy is a fluoroquinolone for three to five days. Azithromycin is an alternative, particularly if there is fluoroquinolone resistance or if campylobacter is suspected (Wanke 2011). Inappropriate prescription of antibiotics must be absolutely avoided. Antibiotic treatment of patients with non-typhoidal salmonellosis may actually prolong faecal shedding of these organisms (Hohmann 2001). Also, not only is *Campylobacter* often resistant to quinolones in the tropics, resistance

was also found during an outbreak in a Spanish prison (Fernandez-Martin 1996). During outbreaks laboratory tests that diagnose the infectious agent and show the bacterial resistance profile are essential to focusing on and improving the treatment of people with vulnerabilities and potential complications. Improved preventive and epidemic control measures will be better implemented in the facility if there is a precise understanding about the mode of transmission.

The environmental and demographic characteristics of detention facilities confer a risk for hepatitis A (HAV) outbreaks, and may also lead to a higher proportion of more severe cases. HAV spreads through the faecal-oral route and is transmitted primarily via ingestion of contaminated food, water, or direct contact with an infected person. Intravenous drug use and homosexual activity in men are other modes of transmission. The risk for fulminant hepatic failure after HAV infection is further increased in patients with chronic liver damage from other infections (HBV or HCV), alcohol, or drug abuse (Crowcroft 2003, Keeffe 2005). Vaccination is beneficial for patients at risk for complications (chronic liver disease patients) and vaccination efforts should hone in people who are susceptible due to their place of origin (high or middle-income regions). People from low-income regions are almost universally exposed to HAV in their early years with natural lifelong immunity following the resolution of childhood acute HAV. Vaccination programs in correctional settings could be an important component of a community-based strategy to control HAV outbreaks among illicit drug users (Vong 05). No therapy is recommended in the case of acute HAV. Nevertheless in case of HAV exposure, vaccination is effective when administered within 14 days post exposure (Sagliocca 99).

Sexually transmitted infections (STI's)

Tab. 4 treatment of sexual transmitted diseases

Agent and disease/ syndrome (most frequent)	First line treatment	Alternative	Comments
<i>Chlamydia trachomatis</i> Urethritis, epididymitis, orchitis(♂) / cervicitis, endometritis, salpingitis, PID (♀) / proctitis	Doxycycline 100mg bid x7days or Azithromycine 1g x1	Ofloxacin 300 mg bid x7days or Levofloxacin 500 mg once daily x7 days	
<i>Neisseria gonorrhoea</i> Urethritis, epididymitis, orchitis(♂) / cervicitis, endometritis, salpingitis, PID (♀) / proctitis	Ceftriaxone 250mg im once + for treatment of chlamydia infection* Doxycycline 100mg bid x7days or Azithromycine 1g once		– do no use anymore FQ (often resistant) – *50% concomittent C. trachomatis
<i>Trichomonas vaginalis</i>	Metronidazole 2gm once or Tinidazole 2gm once		
<i>Gardnerella vaginalis</i> Vaginosis, PID (♀)	Metronidazole 0.5gm bid x7days or Metronidazole gel vaginal once x5days or Tinidazole 2gm daily x3days		
<i>Treponema pallidum</i> (Syphilis)			
Primary, secondary or latent <1year	Benzathine pen G 2.4 mio im	Doxycycline 100mg bid 14 days Azithromycine 2gm 1x	Azithromycin resistant syphilis reported
Latent >1y or indeterminate	Benzathine pen G 2.4 mio im weakly x3wks	Doxycycline 100mg bid 28 days	

Herpes simplex type 2 (Genital herpes)			HSV1 occasional agent of genital herpes
Initial episode	Acyclovir 400mg tid 7-10days Valacyclovir 100mg bid 7-10days		
Episodic recurrences	Acyclovir 800mg tid 2days Valacyclovir 500mg bid 3days		
Chronic daily suppression	Valacyclovir 1g 1x/d Acyclovir 400mg bid		
<i>Klebsiella granulomatis</i> Granuloma inguinale (donovanosis)	Doxycycline 100mg bid x3-4 weeks		
<i>Chlamydia trachomatis</i> serovars LI-3 Lymphogranuloma venereum	Doxycycline 100mg bid x21 days		
<i>Haemophilus ducreyi</i> Chancroid (painful ulcer(s))	Ceftriaxone 250mg IM once or Azithromycine 1gm per os once		

bid = twice a day, tid = 3 times a day

HIV and HBV are not the only STI's in prison that one must be aware of. Chlamydia, gonorrhoea, syphilis and HSV2 are more prevalent in prison populations than in the outside community. Moreover women are most affected than men, in terms of STI prevalence and complications (Tang 2011, Sarmati 2007). Diagnosis, treatment and prevention of STI in detention are essential, especially among this population with limited access to health care in the community. Early treatment is a priority, as these diseases are often asymptomatic but then followed with serious disease sequelae. A third of the people infected with latent syphilis will present with significant complications if left untreated. Chlamydia infections are also often asymptomatic, and undiagnosed infections impose significant morbidity on the patient. Untreated

Chlamydia infections leave patients at risk for health problems like sterility, ectopic pregnancy, inflammatory pelvic disease and orchitis (Steiner 2010).

The implementation of a program for detecting and treating syphilis, Chlamydia and gonorrhoea in prison is recommended, especially in institutions characterized by high prevalence (Diez 2011, Hammett 2009). Prevalence will vary by institution and thus epidemiological studies are very useful in setting priorities. There is also a need to incorporate information about STI's, including HSV-2, into education programmes for inmates (Butler 2000).

Access to laboratory tests for STIs is problematic in several countries, and especially in correctional settings. Moreover, the sensitivities and specificities of commercially available tests are sometimes not sufficient. To address this challenge, a syndrome-based approach to the management of STIs has been developed and promoted in a large number of countries in the developing world, in particular by the WHO. "The syndromic management approach is based on the identification of consistent groups of symptoms and easily recognized signs (syndromes), and the provision of treatment that will deal with the majority of, or the most serious, organisms responsible for producing a syndrome" (WHO 2003). In these countries, health care providers in correctional institutions should use the national standardized treatment protocols or the WHO guidelines for the case-management of patients with STIs (WHO 2003). In countries with access to laboratory tests for STIs in the community, prison health services must offer the same services, in accordance to the principle of equity of care. In this setting, specific treatment is prescribed according to the aetiology (Table 4). Finally, treatment is only one component of the case management. Care providers need to give advice on sexual behaviour, promote safer sex practices, provide condoms, and treat patient partner(s). As patients with STIs are frequently co-infected with other STIs, appropriate screening should be offered, including HIV, hepatitis B, syphilis and Chlamydia. Genital herpes should not be ignored either. HSV2 prevalence is high in prison, and patients are often fatalistic about this disease, or may even trivialize the consequences. However, recurrent HSV2 infection may increase the risk of transmission of other STIs, in particular for HIV, by two to four times. Chronic daily suppression treatment should be offered to patients with a history of six or more relapses per year.

Resistance to antibiotics

Antibiotic resistance is of particular concern in correctional institutions, and the setting may become a reservoir for resistant organisms. Moreover the walls and barbed wire fence of the institution are permeable barriers and so this public health problem impacts the entire community outside the prison's walls.

Staphylococcus aureus is a leading cause of skin infections like folliculitis and can also cause endocarditis. These illnesses can lead to sepsis and impose severe morbidity or even death. Methicillin-resistant *Staphylococcus aureus* (MRSA) is no longer just a hospital-acquired infection. Correctional facilities represent an emerging setting for MRSA transmission and outbreaks to occur, because of the overcrowding found inside, suboptimal hygienic practices and also because of the high rates of co-morbid diseases that cause immuno-suppression found in prisoners (Baillargeon 2004, Wooton 2004). To contain this emerging problem, all skin infections should be managed according to good medical practice and an appropriate use of antibiotics. According to Wootton, implementation of measures to improve skin disease screening, hygiene, wound care and antimicrobial therapy decrease the risk of acquiring MRSA infection in custody (Wootton 2004).

Antibiotic resistance of *Streptococcus pneumoniae* is another challenge, as crowded living conditions and inadequate ventilation facilitate the interchange of penicillin non-susceptible clones between inmates (Ruhe 2004, Hoge 1994)

The prevalence of drug-resistant *Mycobacterium tuberculosis* is often higher in prison populations than in the civilian population (O'Grady 2011). In Eastern Europe, 30 to 50% of prisoners with tuberculosis likely have multidrug-resistant tuberculosis (MDRTB) (Veen 2007). To control the spread of MDRTB, successful treatment requires prescription of effective drugs according to WHO guidelines and the prison's national TB program. These drugs need to be accessible in the community and also in prison. To fight against the spread of MDRTB, excellent adherence (DOT) and continuity of care are essential. Moreover, implementation of effective diagnostic methods, regular data collection and surveillance methods concerning antibiotic susceptibility of *M. tuberculosis* all work in conjunction against TB resistance. As well, resistance to antiviral drugs is also of great concern among prison

populations. In cases of HIV, HBV or influenza, poor patient adherence increases selective pressure towards antibiotic resistance.

Adherence to rational use of antibiotic guidelines is paramount in correctional facilities. Inappropriate use of antibiotics must be eliminated, especially for common diseases like respiratory infections or gastroenteritis, which rarely truly require antibiotics.

Conclusion

Access to effective treatments for infectious diseases is critical in detention. Being that it is one of the pillars of infectious disease control, prisoner treatment benefits not only patients who are in detention, but this is also a public health benefit for the community at large. Antibiotic resistance is of major interest for tuberculosis, and also for other bacterial and viral diseases encountered in detention. This looming resistance threat reinforces the need for the implementation of sound medical practice and guidelines of health services within the prison context.

References

- Abdool Karim, S.S., et al., 2010. Timing of initiation of antiretroviral drugs during tuberculosis therapy. *N Engl J Med*, 362(8), pp. 697-706.
- Almeida-González, L., Franco-Paredes, C., Pérez L.F. and Santos-Preciado, J., 2004. Meningococcal disease caused by *Neisseria meningitidis*: epidemiological, clinical, and preventive perspectives. *Salud Publica Mexicana*, 46(5), pp. 438-50.
- Babudieri, S. et al., 2012. Tuberculosis screening before anti-hepatitis C virus therapy in prisons. *Emerg Infect Dis.*, 18(4), pp. 689-91.
- Baillargeon, H. et al., 2004. Methicillin-resistant *Staphylococcus aureus* infection in the Texas prison system. *Clin Inf Dis.*, 38(9), pp. 92-5.
- Beckwith, C.G. et al. 2010. Opportunities to diagnose, treat, and prevent HIV in the criminal justice system. *J Acquir Immune Defic Syndr.*, 55 (Supp. 1 1), pp. 49-55.
- Bick, J.A., 2007. Infection control in jails and prisons. *Clin Infect Dis.*, 45(8), pp. 1047-55.

- Binswanger, I.A., Krueger, P.M. and Steiner, J.F., 2009. Prevalence of chronic medical conditions among jail and prison inmates in the USA compared with the general population. *J Epidemiol Community Health*, 63(11), pp. 912-9.
- Butler, T. et al., 2000. Herpes simplex virus type 2 in prisoners, New South Wales, Australia. *Int J STD AIDS*, 11(11), pp. 743-7.
- Cammà, C. et al., (in press). A Cost-effectiveness of boceprevir or telaprevir for untreated patients with genotype 1 chronic hepatitis C. *Hepatology*, (accepted for publication March 2012).
- CDC, 2006. Prevention and control of tuberculosis in correctional and detention facilities: recommendations from CDC. Endorsed by the Advisory Council for the Elimination of Tuberculosis, the National Commission. *MMWR Recomm Rep*, 55(RR-9), pp. 1-44
- Charles, W. et al., 1994. An Epidemic of Pneumococcal Disease in an Overcrowded, Inadequately Ventilated Jail. *N Engl J Med*, 331(10), pp. 643-648
- Cowan-Dewar, J., Kendall, C. and Palepu, A., 2011. Prison and public health. *Open Medicine*, 5(3), p132 .
- Crowcroft, N.S., 2003. Hepatitis A virus infections in injecting drug users. *Commun Dis Public Health*, 6(2), p82-4.
- Díez, M. and Díaz, A., 2011. Sexually transmitted infections: Epidemiology and control. *Rev Esp Sanid Penit*, 13(2), pp. 58-66
- Dolan, K., Rutter, S. and Wodak, A.D. 2003. Prison-based syringe exchange programmes: a review of international research and development. *Addiction*, 98(2), pp. 153-8.
- European Association for the Study of the Liver. EASL Clinical Practice Guidelines: management of chronic hepatitis B. *J Hepatol*. 50(2), pp. 227-42.
- Ekstrand, M.L. et al., 2011. Suboptimal adherence associated with virological failure and resistance mutations to first-line highly active antiretroviral therapy (HAART) in Bangalore, India. *Int Health*, 3(1), pp. 27-34.
- Fernández-Martín, J., 1996. *Campylobacter jejuni* infections in a prison population coinfecting with the human immunodeficiency virus. *Rev Clin Esp*.196(1), pp. 16-20.

- Flanigan, T.P. et al., 2009. HIV and infectious disease care in jails and prisons: breaking down the walls with the help of academic medicine. *Trans Am Clin Climatol Assoc.*, 120, pp. 73-83.
- Gétaz, L. et al., 2010. Chickenpox in a Swiss prison: susceptibility, post-exposure vaccination and control measures. *Scand J Infect Dis.* 42(11-12), pp. 936-40.
- Gétaz, L. et al. 2011. Improvement of measles immunity among migrant populations: lessons learned from a prevalence study in a Swiss prison. *Swiss Med Wkly.* 141, w13215.
- Gilbert, D., et al., 2012. *The Sanford Guide to Antimicrobial therapy 2012*. 42nd edition. Sperryville, VA : Antimicrobial Therapy, Inc.
- Goletti, D. et al., 1996. Effect of Mycobacterium tuberculosis on HIV replication. Role of immune activation. *J Immunol.* 157(3), pp. 1271-8.
- Greig, J.D., Lee, M.B. and Harris, J.E., 2011. Review of enteric outbreaks in prisons: effective infection control interventions. *Public Health.*, 125(4), pp. 222-8.
- Hammett, T.M., Harmon, M.P. and Rhodes, W., 2002. The burden of infectious disease among inmates of and releasees from US correctional facilities, 1997. *Am J Public Health.* 92(11), pp. 1789-94.
- Hammett, T.M., 2006. HIV/AIDS and other infectious diseases among correctional inmates: transmission, burden, and an appropriate response. *Am J Public Health.* 96(6), pp. 974-8.
- Hammett, T.M., 2009. Sexually transmitted diseases and incarceration. *Curr Opin Infect Dis.*, 22(1), pp. 77-81.
- Hoge, C.W. et al., 1994. An epidemic of pneumococcal disease in an overcrowded, inadequately ventilated jail. *N Engl J Med.*, 331(10), pp. 643-8.
- Hohmann, E.L., 2001. Nontyphoidal salmonellosis. *Clin Infect Dis.* 32(2), pp. 263-9.
- Hunt, D. and Saab, S., 2009. Viral hepatitis in incarcerated adults: a medical and public health concern. *Am J Gastroenterol.* 104(4), pp. 1024-31
- Keeffe, E.B., 2005. Acute hepatitis A and B in patients with chronic liver disease: prevention through vaccination. *Am J Med.*, 118 8Suppl.1 10A9, pp. 21-7.

- Jürgens, R., Nowak, M. and Day, M., 2011. HIV and incarceration: prisons and detention. *J Int AIDS Soc.*, 2011, 14(26), pp. 1-17.
- La Fleur, C. et al., (in press). Tuberculosis, incarceration, and HIV at a crossroads in Guyana. *Int J Infect Dis.* (Accepted for publication July 2012).
- Latticevski, D., 2007. Communicable disease, in Health in prisons: a WHO guide to the essentials in prison health. 2007. Available at: <http://www.euro.who.int/__data/assets/pdf_file/0009/99018/E90174.pdf>, [accessed 5 august 2012]
- Lobato, M.N., Leary, L.S. and Simone, P.M., 2003. Treatment for latent TB in correctional facilities: a challenge for TB elimination. *Am J Prev Med*, 24(3), pp. 249-53.
- Lok, A., 2012. Overview of the management of hepatitis B and case example. In: UpToDate, Basow, DS (Ed), UpToDate, Waltham, MA.
- Lucas, G.M., 2011. Substance abuse, adherence with antiretroviral therapy, and clinical outcomes among HIV-infected individuals. *Life Sci.*, 88(21-22), pp. 948-52.
- Luchs, A. et al., 2010. Gastroenteritis outbreak due to G2P[4] rotavirus and GII norovirus at two correctional facilities in Brazil. *J Clin Virol.*, 51(3), pp. 213-4.
- Mouriño, A.M. et al., 2011. Concordance of tuberculin tests and Interferon gamma release assays in the prison population. *Rev Esp Sanid Penit.*, 13(1), pp. 15-20.
- Niveau, G., 2006. Prevention of infectious disease transmission in correctional settings: a review. *Public Health*, 120(1), pp. 33-41.
- O'Grady, J. et al., 2011. Tuberculosis in prisons in sub-Saharan Africa--the need for improved health services, surveillance and control. *Tuberculosis (Edinb)*, 91(2), pp. 173-8.
- Pelton, S.I. and Gilmet, G.P., 2009. Expanding prevention of invasive meningococcal disease. 8(6), pp. 717-27.
- Pisu, M., Meltzer, M.I. and Lyerla, R., 2002. Cost-effectiveness of hepatitis B vaccination of prison inmates. *Vaccine*. 21(3-4), pp. 312-21
- Ranjbar, R., Hosseini, M.J., Kaffashian, A.R. and Farshad, S., 2010. An outbreak of shigellosis due to *Shigella flexneri* serotype 3a in a prison in Iran. *Arch Iran Med.*, 13(5), pp. 413-6.

- Restrepo, B.I., 2007. Convergence of the tuberculosis and diabetes epidemics: renewal of old acquaintances. *Clin Infect Dis.*, 45(4), pp. 436-8.
- Robinson, S. et al., 2012. Center for diseases Control, Influenza outbreaks at two correctional facilities – Maine, March 2011. *MMWR Morb Mortal Wkly Rep.*, 61(13), pp. 229-32.
- Ruhe, J.J., Myers, L., Mushatt, D. and Hasbun, R., 2004. High-level penicillin-nonsusceptible *Streptococcus pneumoniae* bacteremia: identification of a low-risk subgroup. *Clin Infect Dis.* 38(4), pp. 508-14.
- Sagliocca, L., et al. 1999. Efficacy of hepatitis A vaccine in prevention of secondary hepatitis A infection: a randomised trial. *Lancet*, 353, pp. 136-9.
- Sarmati, L., et al., 2007. Human herpesvirus 8 and human herpesvirus 2 infections in prison population. *J Med Virol.*, 79(2), pp. 167-73.
- Skipp, er, C. et al. Evaluation of a prison outreach clinic for the diagnosis and prevention of hepatitis C: implications for the national strategy. *Gut*, 52, pp. 1500–4.
- Steiner, A.S. et al., 2010. Chlamydia trachomatis infection in a Swiss prison: a cross sectional study. *Swiss Med Wkly.* 140, w13126.
- Tan, J.A., Joseph, T.A. and Saab, S., 2008. Treating hepatitis C in the prison population is cost-saving. *Hepatology*, 48(5), pp. 1387-95.
- Tapp, ero, J.W. et al., 1996. Meningococcal Disease In Los Angeles County, California, and Among Men In The County Jails. *N Engl J Med.*, 335(12), pp. 833-40.
- Tang, A., 2011. How to run a prison sexually transmitted infection service. *Sex Transm Infect.*, 87(4), pp. 269-71
- Turner, K.B. and Levy, M.H., 2010. Prison outbreak: pandemic (H1N1) 2009 in an Australian prison. *Public Health*, 124(2), pp. 119-21.
- Uhlmann, S. et al., 2010. Methadone maintenance therapy promotes initiation of antiretroviral therapy among injection drug users. *Addiction*, 105(5), pp. 907-13.
- Veen, J., 2007. Tuberculosis control in prisons, in Health in prisons: a WHO guide to the essentials in prison health. Available at: <http://www.euro.who.int/__data/assets/pdf_file/0009/99018/E90174.pdf>, [accessed 5 august 2012]

- Vong, S., 2005. Vaccination in the county jail as a strategy to reach high risk adults during a community-based hepatitis A outbreak among methamphetamine drug users. *Vaccine*, 23(8), pp. 1021-8.
- Wakeman, S.E. and Rich, J.D., 2010. HIV treatment in US prisons. *HIV Ther.*, 4(4), pp. 505-510.
- Walkty, A. et al., 2011. Mumps in prison: description of an outbreak in Manitoba, Canada. *Can J Public Health*. 102(5), pp. 341-4.
- Wallace, M.R. et al., 1992. Treatment of adult varicella with oral acyclovir. A randomized, placebo-controlled trial. *Ann Intern Med.*, 117(5), pp. 358-63.
- Walmsley, R., 2012. World Prison Populatin List. International Center For Prison Studies. Available at: <http://www.prisonstudies.org/images/news_events/wpp.19.pdf>, [accessed 5 august 2012]
- Wanke, C., 2011. App. roach to the adult with acute diarrhea in developed countries. In: UpToDate, Basow, DS (Ed), UpToDate, Waltham, MA.
- Weinbaum, C.M., Sabin, K.M. and Santibanez, S.S., 2005. Hepatitis B, hepatitis C, and HIV in correctional populations: a review of epidemiology and prevention. *AIDS*, 19 (Supp. 1 3), pp. 41-6.
- Weinbaum, C., Lyerla, R. and Margolis, H.S., 2003. Prevention and control of infections with hepatitis viruses in correctional settings. Centers for Disease Control and Prevention. *MMWR Recomm Rep.*, 52(RR-1), pp. 1-36.
- WHO 2003. Guidelines for the management of sexually transmitted infections. Available at: <<http://whqlibdoc.who.int/publications/2003/9241546263.pdf>>, [accessed 5 august 2012]
- Wootton, S.H. et al., Intervention to reduce the incidence of methicillin-resistant *Staphylococcus aureus* skin infections in a correctional facility in Georgia. *Infect Control Hosp Epidemiol.*, 25(5), pp. 402-7.
- Zachary, K., 2012. Treatment of seasonal influenza in adults. In: UpToDate, Basow, DS (Ed), UpToDate, Waltham, MA.
- Wolfe, M.I., et al., 2001. An outbreak of syphilis in Alabama prisons: correctional health policy and communicable disease control. *Am J Public Health*. 91(8), pp. 1220-5.

Sleep Disorders

Bernice Elger

Introduction

Insomnia is a frequent reason for medical and psychiatric consultation in prisons (Elger 2004b, Feron et al. 2005, Kjelsberg and Hartvig 2005, Nasset et al. 2011). However, more detailed studies on insomnia in correctional institutions are rare. Outside prisons, a substantial number of studies have been carried out on different populations including different age groups of the general population and different patient groups (Sateia and Nowell 2004, Bixler et al. 1979, Mellinger et al. 1985, Ford and Kamerow 1989, Kupfer and Reynolds 1997). In this chapter, we present first a brief overview about insomnia and treatment guidelines based on studies outside prisons. Second, we discuss the clinical and ethical issues of treating insomnia in prison and provide recommendations concerning evidence-based management of insomnia complaints by prisoners.

Insomnia and its treatment: recommendations based on studies outside prisons

Numerous studies indicate a high prevalence of insomnia symptoms in the general population. Between 10% and 50% of the adults in Western Europe suffer from sleep problems (Ohayon and Lemoine 2004a, Ohayon 2002, Chan-Chee et al. 2011). It is important to note that insomnia often has repercussions on daytime functioning: in France this was the case for two thirds of the 19% of the general population suffering from insomnia (Ohayon and Lemoine 2004a). In the United States, at least 10% of the population has been found to suffer from sleep problems (Sateia et al. 2000, Kraus and Rabin 2012). In general, insomnia is observed more frequently in women, separated or divorced individuals, people who are less educated or unemployed, medically ill patients, those with recent stress, and those suffering from depression, anxiety, or substance abuse (Elger 2007, Hohagen et al.

1993, Ohayon and Lemoine 2004b, Kupfer and Reynolds 1997, Sateia and Nowell 2004).

The American Sleep Disorders Association International Classification of Sleep Disorders coding manual defines insomnia as “a repeated difficulty with sleep initiation, duration, consolidation, or quality that occurs despite adequate time and opportunity for sleep and results in some form of daytime impairment and lasting for at least one month” (American Sleep Disorders Association 2005, Falloon et al. 2011). The DSM-IV classification (American Psychiatric Association 2000, Elger 2007) distinguishes primary sleep disorders, dyssomnias (getting the right amount, getting the right quality of sleep) which include primary insomnia, primary hypersomnia, and non-specified dyssomnia related to environmental factors (noise, light, frequent disturbances). Further listed categories of sleep disorders are parasomnias (e.g. sleepwalking disorder), sleep disorders due to a general medical condition, sleep disorders related to another mental disorder, most typically depression, anxiety or psychosis (the mental disturbance must be sufficiently severe), and, finally, substance induced sleep disorders.

As Sateia and Novell (2004) underline, when treating insomnia, physicians should keep in mind that the subjective perception of insomnia is at least as important as the objective alterations of sleep and its pattern. The most frequent causes for acute (short term) insomnia (< 3-4 weeks) are situational stress, medical or psychological disorders and circadian changes due to jet lag or shift work. Management of acute insomnia should address these causes by trying to alleviate the acute stress and to educate patients adequately. Short-term treatment strategies consist of sleep hygiene and prescription of hypnotics, if necessary.

Chronic insomnia is diagnosed if sleep problems last more than four weeks. Two treatment strategies are supported by empirical evidence. For many years, the dominating approach has been pharmacological, using mostly benzodiazepine receptor agonists (Morin and Benca 2012, Sateia and Nowell 2004). While hypnotic drugs have proven to alleviate symptoms in short-term treatment of acute insomnia, their effectiveness in long-term treatment has not been established. Studies showed effectiveness of hypnotics during the first six weeks and seem to indicate that treatment effects degrade over time in patients with chronic insomnia. Although problems with benzodiazepines such as risk of habituation and tolerance have been known for the past 50 years, they have been ignored by many practitioners (Lader 2011, Kupfer

and Reynolds 1997). Non-pharmacological treatments remain insufficiently used, although in particular cognitive-behavioural therapy (CBT) has been shown to result in long lasting and clinically significant improvement. CBT is efficient if it is used alone or in combination with pharmacological treatment.

Non-pharmacological treatments help improve symptoms of patients who suffer from primary insomnia as well as those of patients suffering from secondary sleep problems, i.e. insomnia attributable to medical or psychiatric illness. CBT can be used in individual or group therapeutic sessions or in the form of self-administered written or audiovisual material. Special types of these treatments are stimulus control therapy, sleep restriction, sleep hygiene, paradoxical intention, progressive muscle relaxation, and cognitive therapy (Belleville et al. 2011, Morin and Benca 2012, Mitchell et al. 2012, Sateia and Nowell 2004).

Insomnia in prison: epidemiology and possible causes

Most of the studies on the epidemiology of insomnia in places of detention have been carried out in Europe. In the German prison in Straubing 54% of the inmates complained about sleep problems (Last 1979). A study in French prisons found high prescription rates for psychotropic drugs used mainly as sleeping medication (Jaeger and Monceau 1996). Overall, two-thirds of all prescriptions distributed by the pharmacies were benzodiazepines and sedative neuroleptics. The quantity of psychotropic prescriptions varied from prison to prison. Hypnotics and tranquillizers were prescribed more often in remand prisons (in the United States of America, referred to as 'jails') than in the post-trial detentions centers. Prescription rates of hypnotics and sedative drugs were in penitentiaries where detainees had access to more activities outside the cells, including work and opportunities to practice sports. Other studies have also shown a high prevalence of insomnia complaints in prisons in Belgium and Switzerland (Feron et al. 2005, Elger 2004b). In the Geneva remand prison Champ Dollon, 44.3% of 995 patients seen in primary care consultations were found to suffer from insomnia. Only half of them (51%, n=223) were drug misusers (Elger 2004b).

In the Swiss study, substance abuse could have caused the sleep problems in half of the insomniac prisoners. Overall, the most frequently reported reason for insomnia was anxiety related to incarceration. Among the non-substance-abusing insomnia patients, chronic forms of insomnia were more common

than acute transitory insomnia, defined as lasting less than three weeks. Anxiety or depression was diagnosed more frequently in patients complaining of insomnia than in prisoners without sleep complaints. The Swiss study showed that in non-substance-abusing patients, the causes for insomnia cannot be reduced to transitory adaptation difficulties to incarceration. Indeed, insomnia in prison was found to be a more chronic problem. In most cases sleep problems lasted more than three weeks and were associated with medical and psychological problems and the intake of other drugs, including analgesics.

Overall, conditions of imprisonment and arrest play a role in the chronic nature of the sleep problems (Association Lyonnaise de Criminologie et d'Anthropologie Sociale 1991). Post-traumatic stress disorder (PTSD) is a well-known cause for insomnia (DeViva et al. 2004) and is found to be relatively frequent in prison (Crisanti and Frueh 2011). Pre-existing psychiatric morbidity, drug misuse, lack of physical activity and daytime napping are also found commonly in prison and may cause insomnia (Bourgeois 1997, Andersen et al. 2000). Studies have also shown that prisoners feel easily bored when they have to stay in their cells during most of the day and especially at night when cells are closed early. This may increase the subjective impression to need to sleep longer than physiologically needed (Levin and Brown 1975, Zimmermann and von Allmen 1985, Vasseur 2001, Jaeger and Monceau 1996).

A study from the US confirmed that insomnia in prison cannot be reduced to being a secondary symptom of mental disease or substance abuse. Insomnia in prison seems to be a separate entity, independent of disorders associated with dysphoria (Rogers et al. 2003). Since the study was carried out among detainees, one explanation of the findings is that the conditions of detention are a major factor. Prisons cause significant fears about personal safety which lead to hyper-vigilance and sleep disturbances (Rogers et al. 2003). It is important for the management of insomnia in prison to note that if it is the prison environment that causes independent 'situational' insomnia, treatment of the causes would need to imply at least partial changes or adaptation of the prison environment and cannot be limited to treatments of specific psychiatric disorders.

A study in France that included prison staff and prisoners sheds additional light on the causes of insomnia in prison. Staff members said they had observed inmates consume higher amounts of hypnotics and sedative in situa-

tions that increase stress. This is the case if detainees are close to their judgment, if the prison is overcrowded and many prisoners have to share the same cell, and when frequent conflicts exist between detainees and staff. Interviews carried out with prisoners confirm that the conditions of incarceration play a major role in the causation of sleep complaints. Prisoners included in this study were from different kinds of prisons, including remand prisons (Jaeger and Monceau 1996). They told the interviewers that hypnotics and tranquillizers help to decrease the risk of suicide and violent behavior and therefore not only diminish suffering, but are also beneficial for survival in prison. They believed that being able to sleep at night has a positive effect on behavior by reducing aggressiveness and dysphoria during the day. Up to 30% of prison officers believed that hypnotics and tranquillizers increase peaceful cohabitation and discipline in prison because they help detainees tolerate detention (Jaeger and Monceau 1996).

Management of insomnia complaints in prison

Management of insomnia in prison can only be effective if it takes into account the causes of insomnia. A leading principle for insomnia evaluation and treatment should be equivalence of care (Bruce and Schleifer 2008, Lines 2008, Elger 2008a, Elger 2008b). Prisoners have the right to receive adequate treatment that is available to patients outside prisons. However, studies have shown that health care personnel's evaluation of insomnia complaints in prison is insufficient and treatment remains inefficient in many patients.

A retrospective study in Switzerland examined the clinical management of insomnia complaints in non-substance-misusing prisoners in order to evaluate the quality of medical consultation and the effectiveness of drug prescription (Elger 2003, Elger 2004a). The study showed that prison physicians' evaluation for insomnia was incomplete, although similar to studies involving 'normal' US physicians working outside correctional facilities. The Swiss prison physicians documented insufficient insomnia work-up. Information about the history of sleep habits, sleep latency and previous hypnotic use had been noted only for less than a third of the patients. In only seven percent, the medical records contained information about the day time impact of insomnia. Sleep complaints disappeared in only a minority of patients (37%). In the majority of cases, no or only partial improvement was found. The highest number of hypnotics (mean 2.4) was identified in patients whose insomnia did not respond, or responded only partially, to the treatment. Clearly, in this

study, drug prescription to insomniac prisoners was only partially effective in many patients.

The principles of beneficence and non-maleficence should guide any physician. A prison physician should carry out adequate evaluations of insomnia complaints in order to be able to make the right diagnosis and to provide treatment that addresses the causes of insomnia. It is also important to avoid harm, which could be either due to side effects of medications or result from untreated insomnia, including increased risks of self harm, suicide and aggressiveness. It is also important to remember that the principle of respect for autonomy applies in prison health care in the same way as outside prisons. Patients should be included in the discussion when it comes to balancing of harms and benefits (Elger 2008a). Apart from being dictated by patient rights, this will also increase compliance with and outcome of treatments.

Prison physicians have been concerned about over-treatment of insomnia complaints (Reeves 2012). One of the underlying reasons is that many physicians believe that prisoners misuse medication to get into a state of “ecstasy” (Last 1979, Reeves 2012). Therefore, one can find among existing recommendations that prisoners should be prescribed herbal medications, neuroleptics or antidepressants instead of benzodiazepines, although outside prisons the latter have proven to be evidence based (Morin and Benca 2012) and many of the former have important side effects while their efficiency remains unclear (Maher and Theodore 2012). While overtreatment is harmful, so is under-treatment.

In the following we provide a guide to insomnia management in prison that is in line with the principle of equivalence.

Patient evaluation: The first important step is to take insomnia complaints seriously. This requires to evaluate correctly the type and history of complaints, previous medication intake as well as to carry out a thorough history and clinical examination to search for somatic or mental disease that could cause insomnia. Not making the right diagnosis is an important source of future harm to the patient (Falloon et al. 2011, Sateia and Nowell 2004).

Evaluation and change of contributing environmental factors: Prison physicians have a public health mandate (Elger 2008b, Elger 2011). If prison conditions such as overcrowding, violence and lack of physical or other activities contribute to high rates of insomnia, it is part of the duties of health care personnel to point this out to prison and local public health authorities in order to

mandate appropriate changes. Health care workers have limited influence on the stress due to the judicial inquiries. However, they can put in place adequate measures to address and alleviate this stress.

Non pharmacological treatments: Although these treatments have proven to be among the most efficient ways to treat chronic insomnia, they are clearly underused. Non pharmacological treatments of insomnia include non pharmacological ways to help detainees cope with stress. A recent study has not only shown positive effects of meditation, but also that teaching relaxation techniques and meditation to prisoners may be the most cost effective way to address a several health problems in prison (Sumter et al. 2009). One of the reasons for the underuse of non pharmacological measures is the lack of expertise and training among prison health personnel. Hence, the first step to improve insomnia treatment in prison could be to send physicians to appropriate courses or to employ health workers trained in cognitive behavioral therapies (CBT). Non pharmacological measures include education of prisoners about sleep hygiene. The information that should be provided has been well summarized in recent publications (Falloon et al. 2011).

Pharmacological treatments: If pharmacological treatment is decided, it is important to use correct medication. First of all, treatment should address diseases that cause secondary insomnia. Pharmacological treatment of primary insomnia should take into account the existing evidence. Although sedating antidepressants and sedating antipsychotics have the advantage to generally not result in tolerance or physical dependence, misuse by prisoners of medication such as quetiapine has been observed (Reeves 2012). Moreover, the common important side effects of most non-benzodiazepine hypnotics such as daytime sedation, weight gain, and anti-cholinergic side effects are of considerable concern. Sedating antidepressants are clearly more toxic and less efficient than benzodiazepines (Falloon et al. 2011) and their use should be limited to special indications in prison. Benzodiazepines remain the first choice drugs for the treatment of most forms of primary insomnia. The fears that some of these drugs circulate in prison and are sold on the prison black market are not sufficient reasons to deny prisoners appropriate treatment. Indeed, it is well known that a considerable amount of tranquillizers and illicit drugs enter prisons and depriving insomniac prisoners of benzodiazepines will only force them to look for more dangerous alternatives on the black market (Elger 2008a).

Conclusion

Insomnia among detainees is frequent and requires appropriate evaluation and treatment. A clear need exists to educate prison health care professionals on insomnia evaluation and management. Prison health care services should develop clear guidelines for their personnel that are based on research evidence about insomnia and not on unproven claims to reduce the use of benzodiazepines in prison (Reeves 2012). These guidelines should be based on the principle of equivalence. They should refer to existing and easily available material from outside prisons (Falloon et al. 2011, Sateia and Nowell 2004). The focus should be on changes of prison conditions and on non-pharmacological treatment. No evidence exists that benzodiazepine prescription in prison should be replaced by neuroleptics or antidepressants. On the contrary (Maher and Theodore 2012), if motivated only by the prison context, prescriptions of neuroleptics and antidepressants for insomnia may unethically harm detainees. Insomnia evaluation and treatment practice needs to be strictly monitored and documented, if possible as part of well designed international research studies in order to increase evidence for safe and correct drug prescribing in prison.

References

- American Psychiatric Association 2000. *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)*, Washington, APA.
- American Sleep Disorders Association 2005. *International Classification of Sleep Disorders, second edition: diagnostic and coding manual, USA*, American Sleep Disorders Association.
- Andersen, H. S., Sestoft, D., Lillebaek, T., Gabrielsen, G., Hemmingsen, R. & Kramp, P. 2000. A longitudinal study of prisoners on remand: psychiatric prevalence, incidence and psychopathology in solitary vs. non-solitary confinement. *Acta Psychiatr Scand*, 102, 19-25.
- Association Lyonnaise de Criminologie et D'anthropologie Sociale 1991. *Ouvrage collectif sous la direction de Gonin, D; commande' par le ministere de la justice. Conditions de vie en detention et pathologie somatique*, Paris, Ministère de la Justice.
- Belleville, G., Cousineau, H., Levrier, K. & St-Pierre-Delorme, M. E. 2011. Meta-analytic review of the impact of cognitive-behavior therapy for insomnia on concomitant anxiety. *Clin Psychol Rev*, 31, 638-52.

- Bixler, E. O., Kales, A., Soldatos, C. R., Kales, J. D. & Healey, S. 1979. Prevalence of sleep disorders in the Los Angeles metropolitan area. *Am J Psychiatry*, 136, 1257-62.
- Bourgeois, D. 1997. [Sleep disorders in prison]. *Encephale*, 23, 180-3.
- Bruce, R. D. & Schleifer, R. A. 2008. Ethical and human rights imperatives to ensure medication-assisted treatment for opioid dependence in prisons and pre-trial detention. *Int J Drug Policy*, 19, 17-23.
- Chan-Chee, C., Bayon, V., Bloch, J., Beck, F., Giordanella, J. P. & Leger, D. 2011. [Epidemiology of insomnia in France]. *Rev Epidemiol Sante Publique*, 59, 409-22.
- Crisanti, A. S. & Frueh, B. C. 2011. Risk of trauma exposure among persons with mental illness in jails and prisons: what do we really know? *Curr Opin Psychiatry*, 24, 431-5.
- Deviva, J. C., Zayfert, C. & Mellman, T. A. 2004. Factors associated with insomnia among civilians seeking treatment for PTSD: an exploratory study. *Behav Sleep Med*, 2, 162-76.
- Elger, B. S. 2003. Does insomnia in prison improve with time? Prospective study among remanded prisoners using the Pittsburgh Sleep Quality Index. *Med Sci Law*, 43, 334-44.
- Elger, B. S. 2004a. Management and evolution of insomnia complaints among non-substance-misusers in a Swiss remand prison. *Swiss Med Wkly*, 134, 486-99.
- Elger, B. S. 2004b. Prevalence, types and possible causes of insomnia in a Swiss remand prison. *Eur J Epidemiol*, 19, 665-77.
- Elger, B. S. 2007. Insomnia in places of detention: a review of the most recent research findings. *Med Sci Law*, 47, 191-9.
- Elger, B. S. 2008a. Prisoners' insomnia: to treat or not to treat? Medical decision-making in places of detention. *Med Sci Law*, 48, 307-16.
- Elger, B. S. 2008b. Towards equivalent health care of prisoners: European soft law and public health policy in Geneva. *J Public Health Policy*, 29, 192-206.
- Elger, B. S. 2011. Prison medicine, public health policy and ethics: the Geneva experience. *Swiss Med Wkly*, 141, w13273.

- Falloon, K., Arroll, B., Elley, C. R. & Fernando, A., 3RD 2011. The assessment and management of insomnia in primary care. *BMJ*, 342, d2899.
- Feron, J. M., Paulus, D., Tonglet, R., Lorant, V. & Pestiaux, D. 2005. Substantial use of primary health care by prisoners: epidemiological description and possible explanations. *J Epidemiol Community Health*, 59, 651-5.
- Ford, D. E. & Kamerow, D. B. 1989. Epidemiologic study of sleep disturbances and psychiatric disorders. An opportunity for prevention? *JAMA*, 262, 1479-84.
- Hohagen, F., Rink, K., Kappler, C., Schramm, E., Riemann, D., Weyerer, S. & Berger, M. 1993. Prevalence and treatment of insomnia in general practice. A longitudinal study. *Eur Arch Psychiatry Clin Neurosci*, 242, 329-36.
- Jaeger, M. & Monceau, M. 1996. *La consommation des médicaments psychotropes en prison*, Ramonville Saint-Agne Editions Erès.
- Kjelsberg, E. & Hartvig, P. 2005. Can morbidity be inferred from prescription drug use? Results from a nation-wide prison population study. *Eur J Epidemiol*, 20, 587-92.
- Kraus, S. S. & Rabin, L. A. 2012. Sleep America: managing the crisis of adult chronic insomnia and associated conditions. *J Affect Disord*, 138, 192-212.
- Kupfer, D. J. & Reynolds, C. F., 3RD 1997. Management of insomnia. *N Engl J Med*, 336, 341-6.
- Lader, M. 2011. Benzodiazepines revisited--will we ever learn? *Addiction*, 106, 2086-109.
- LAST, G. 1979. [Sleep disorders in a isolation situation. Hyposomnia in older convicts]. *Z Gerontol*, 12, 235-47.
- Levin, B. H. & Brown, W. E. 1975. Susceptibility to boredom of jailers and law enforcement officers. *Psychol Rep*, 36, 190.
- Lines, R. 2008. The right to health of prisoners in international human rights law. *Int J Prison Health*, 4, 3-53.
- Maher, A. R. & Theodore, G. 2012. Summary of the comparative effectiveness review on off-label use of atypical antipsychotics. *J Manag Care Pharm*, 18, 1-20.

- Mellinger, G. D., Balter, M. B. & Uhlenhuth, E. H. 1985. Insomnia and its treatment. Prevalence and correlates. *Arch Gen Psychiatry*, 42, 225-32.
- Mitchell, M. D., Gehrman, P., Perlis, M. & Umscheid, C. A. 2012. Comparative effectiveness of cognitive behavioral therapy for insomnia: a systematic review. *BMC Fam Pract*, 13, 40.
- Morin, C. M. & Benca, R. 2012. Chronic insomnia. *Lancet*, 379, 1129-41.
- Nesset, M. B., Rustad, A. B., Kjelsberg, E., Almvik, R. & Bjorngaard, J. H. 2011. Health care help seeking behaviour among prisoners in Norway. *BMC Health Serv Res*, 11, 301.
- Ohayon, M. M. 2002. Epidemiology of insomnia: what we know and what we still need to learn. *Sleep Med Rev*, 6, 97-111.
- Ohayon, M. M. & Lemoine, P. 2004a. [Daytime consequences of insomnia complaints in the French general population]. *Encephale*, 30, 222-7.
- Ohayon, M. M. & lemoine, P. 2004b. [Sleep and insomnia markers in the general population]. *Encephale*, 30, 135-40.
- Reeves, R. 2012. Guideline, education, and peer comparison to reduce prescriptions of benzodiazepines and low-dose quetiapine in prison. *J Correct Health Care*, 18, 45-52.
- Rogers, R., Jackson, R. L., Salekin, K. L. & Neumann, C. S. 2003. Assessing Axis I symptomatology on the SADS-C in two correctional samples: the validation of subscales and a screen for malingered presentations. *J Pers Assess*, 81, 281-90.
- Sateia, M. J., Doghramji, K., Hauri, P. J. & Morin, C. M. 2000. Evaluation of chronic insomnia. An American Academy of Sleep Medicine review. *Sleep*, 23, 243-308.
- Sateia, M. J. & Nowell, P. D. 2004. Insomnia. *Lancet*, 364, 1959-73.
- Sumter, M. T., Monk-Turner, E. & Turner, C. 2009. The benefits of meditation practice in the correctional setting. *J Correct Health Care*, 15, 47-57; quiz 81.
- Vasseur, V. 2001. *Médecin chef à la prison de la santé*, Paris, Le Livre de Poche.
- Zimmermann, E. & Von Allmen, M. 1985. [Medical consultation and drug use in preventive detention at the Champ-Dolon prison]. *Soz Präventiv-med*, 30, 312-21.

Pain management

Jean-Pierre Rieder, Valérie Piguet, Alejandra Casillas,
Laurent Gétaz, Hans Wolff

Introduction

Medical literature about pain in prison is almost nonexistent. The few existing references refer to cancer pain and access to palliative care in prison. Existing recommendations mainly target safety aspects of the prescription without going deeply into practical points like assessment, follow-up and management of complex situations. Nevertheless, these are important points. For practitioners in the field, several questions remain unanswered. Some of these issues include misuse (e.g. overuse, pills dealt for money, storage, paracetamol use to cut heroin/cocaine), addiction development, how to treat pain among addicted patients, and how to deal with “hard-to-reach” individuals. Each of these fears may act as a barrier towards adequate treatment. Given that more specific data for correctional/prison environment is not yet available. However, these inferences are still imperfect due to the subjective nature of pain experience and evaluation, and the sometimes confusing presentation of patients’ pain complaints, especially during a moment of crisis.

Definitions and classification

Pain is defined as an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage. Its presence diminishes *health* as it disrupts the state of complete physical, mental and social well-being.

A good medical history includes understanding the pain complaint to manage it properly. This allows for the assessment of pain intensity and its classification:

- from a dynamic perspective: acute vs. chronic
- from a physio-pathological perspective: nociceptive, neuropathic

- through its aggravating factors: psychological, psychiatric and social problems.

Chronic pain has several definitions: It can be defined as a pain lasting generally more than three months that persists longer than what is generally expected for its localisation and mechanism, (5) and refractory to usual treatments. It can be the result of a central sensitisation (6) and/or associated to emotional conflicts and psychosocial problems that may contribute to a painful phenomenon; in regards to the latter, some examples are persistent somatoform pain disorder (F45.4 in ICD-10), or pain disorders related to psychosocial factors (F45.4 in 2012 ICD-10-CM). The physio-pathological classification (nociceptive, neuropathic) gives guidance towards type of treatment, but keeping in mind that a pain can have mixed origins, with both nociceptive and neuropathic components. The history is therefore crucial and must be repeated especially as pain experience worsens, with the support of an interpreting service if needed.

Assessment of pain

A complete history must address the following elements: beginning (when?, how?: accident/trauma or disease), changes with different treatments and life experiences, localisation, radiation, precipitating and relieving factors, circadian pain intensity, and characteristics. Validated tools (see below) help the clinician in his/her assessment. Hetero-assessment tools (the patient being assessed as far as possible by 2 health professionals) are reserved for non communicating patients as they were validated for this use only. They must not be used to verify the veracity of a complaint.

Examples of common validated tools used to assess pain.

Tool	Aspect assessed	Self/hetero assessment
Numerical Rating Scale (NRS)	Intensity of pain	Self assessment
Visual Analogue Scale (VAS)	Intensity of pain	Self assessment
Wong-Baker FACES™ Pain Rating Scale	Intensity of pain	Self assessment
DoloPlus®	Presence of pain	Hetero assessment
AlgoPlus®	Presence of pain	Hetero assessment
McGill Pain Questionnaire (questionnaire de Saint-Antoine)	Characteristics of pain	Self assessment
DN4 Questionnaire	Neuropathic pain	Self assessment

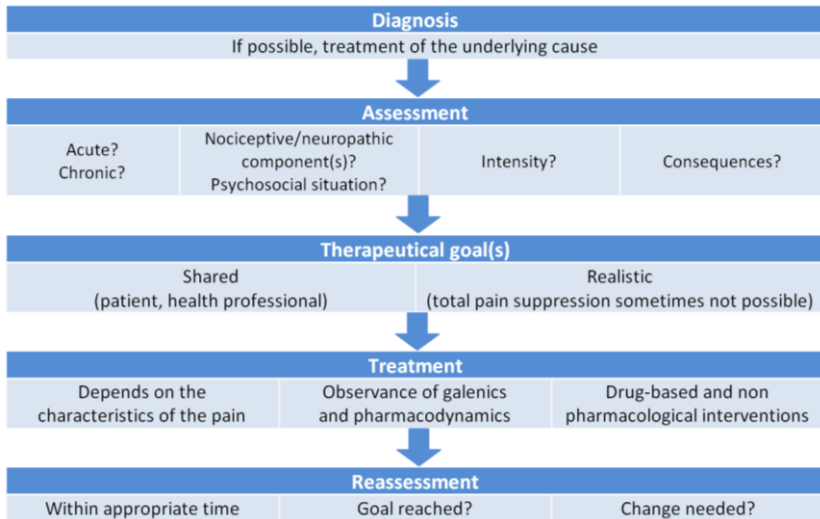
Pain management – general information

The health professional has access to a number of approaches to provide relief:

- pharmacological treatment
- physiotherapy
- psychotherapy
- social approach.

Acute pain is most frequently nociceptive and simple to manage. Approaches in drug therapies for this area are generally suitable, well-known and sufficient to alleviate the pain until the resolution of the underlying cause. In general, *chronic* pain is more complex because of its physio-pathological mechanisms and the functional and psychosocial consequences. It can give rise to tension between the provider and patient. Thus, the health professional needs specific knowledge and skills to treat the patient and maintain a good therapeutic relationship.

The following principles are useful in the evaluation of pain:



Analgesics and adjuvants

The pharmacological treatment of pain encompasses several types of drugs. We can classify them into two primary groups: analgesics, with central or peripheral action, and adjuvants, also called co-analgesics. Adjuvants are frequently cited without detail in the recommendations for treatment of nociceptive pain.

There are drug adjuvants (a medication that has some analgesic effect through central or peripheral action, even though it was not intended for this purpose), and nondrug adjuvants. Their use is generally linked to a specific pain or causal mechanism. *Table 1* gives some examples of recognised adjuvants.

Treatment of the nociceptive pain

Pharmacological management of nociceptive pain is well-standardised. The World Health Organization (WHO) and the International Association for the Study of Pain (IASP) have collaborated on the definition of sequential prescription steps to be used according to treatment response (figure 1):

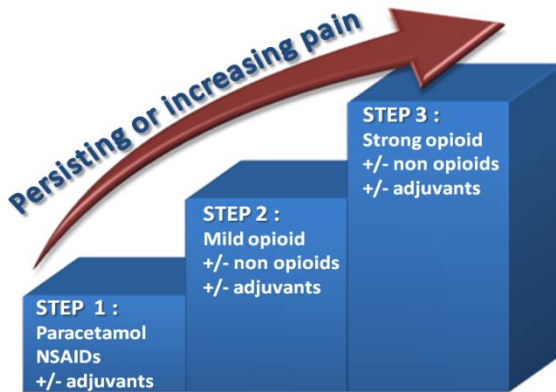


Fig. 1 pharmacological treatment of nociceptive pain: steps of the “pain ladder”, adapted from WHO in collaboration with IASP, 1999 (7). NSAIDs: nonsteroidal anti-inflammatory drugs

Most of the adverse drug events in hospital environments involve analgesics and are caused by lack in medical knowledge (errors of dosage, interactions...), nurse management (administration stage), patient-related conditions

(allergies, medical history, comorbidities, genetic polymorphism...), practical problems (dosage, administration route, preparation / delivery problem...) and a lack of guidelines inside the hospital (8). The strategies focusing on process improvement (e.g. safe prescribing, safe drug administration process...) have higher impact than individual-focused interventions (on one prescriber). For example, using only a few types of drugs for everyday prescription improves provider-competency in elements such as dosing, pharmacodynamics, adverse effects, interactions, precaution and contraindications. As a result, the specific prescription is rendered more effective and safe. However, this should defer access to other more underused drug types, should the specific case demand a more tailored treatment (with the required vigilance, of course). Computerised prescription or computerised physician order entry (CPOE) with an alert system is helpful for this purpose. *Table 2* gives some information for some frequently used drug classes. One should also take into account the potential for drug misuse that also exists outside the prison setting, but less frequently. This will be addressed later.

Treatment of the neuropathic pain

Neuropathic pain is common, especially because it is a substantial part of chronic pain. Its treatment is as complex as its physio-pathological mechanisms and has less predictable results. The synthesis of several reviews (9–11) and recommendations (12–14), is shown in *figure 2* and *table 3*.

The first-choice treatment is either an antiepileptic drug or an antidepressant. The choice for one or the other depends on the symptoms (burning or electric shocks for example), their impact on pain improvement, and the co-morbidities and the medications of the patient.

Antiepileptics have also been used for years for this indication, carbamazepine being formerly at the top. But, we now have medications with less adverse effects and interactions. Gabapentine and pregabaline seem equivalent except for their bioavailability (90% for pregabaline, variable for gabapentine), their side effects and their costs (gabapentine being better tolerated and cheaper).

Not all antidepressants are equivalent in their effect on pain. Tricyclic drugs have a stronger effect but their side effect and safety profiles are not quite as good compared to duloxetine and venlafaxine.

In the case of persisting pain, antiepileptics and antidepressants can be combined. An opioid and/or a nonsteroidal anti-inflammatory drug (NSAID, in case of inflammatory component of the pain) can as well be added. Tramadol and oxycodone are the most recognised for this use. The other opioids are much too variable in their results to be recommended.

Topical anaesthetics are partially allowed for this use. They are well established for postherpetic pain, and to a lesser extent in cases of diabetic polyneuropathy. The evidence is far less robust for other situations of neuropathic pain. Lidocaine and capsaicin are the most studied, the latter being a bit more expensive.

Non-drug adjuvants can be very helpful. The most studied and therefore recognised are: transepidermal neurostimulation, cognitive-behavioural therapy (CBT), hypnosis, relaxation therapy and acupuncture. For some chronic neuropathic pains, medullary neurostimulation can be used depending on the localisation of the pain.

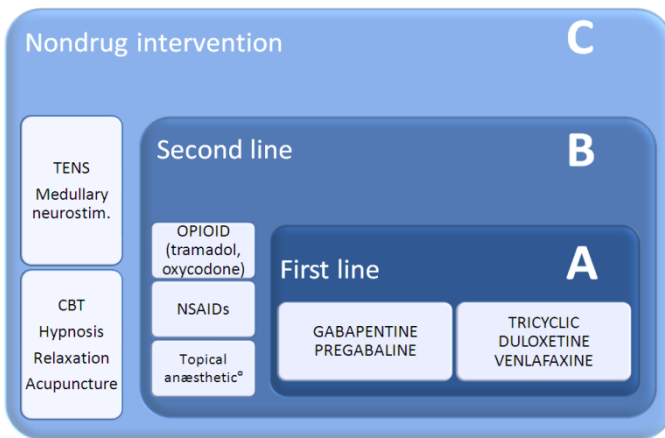


Fig. 2 treatment of neuropathic pain: synthetic vision, adapted from ref. (9–11) *: lidocaine or capsaicin. TENS: transepidermal neurostimulation. CBT: cognitive-behavioural therapy. NSAIDs: nonsteroidal anti-inflammatory drugs

Chronic pain management

Without elaborating in depth about management of chronic pain, one should nevertheless acknowledge that taking care of patients with chronic pain is

complicated and specific training in this area is necessary. This type of pain management demands mutual trust and respect between the patient and the professional, so that they will be able to delineate shared and reachable goals. (15, 16)

Coping is made easier with a functional goal while dealing with continued, but bearable, pain. Such goals are usually more satisfying because they are less doomed to fail (such as with the expectation for a total freedom from pain). The pain should be treated according to its type(s) (nociceptive/neuropathic). It should not become the patient's sole identity, for it could hide other ailments and as well could obscure some potential satisfactions in life.

The biggest risk in the absence of an adaptive/responsive treatment plan would be for the patient, who is likely already emotionally drained, to have a feeling of misunderstanding or of rejection from his practitioner. This could worsen a mood disorder or lead to an increase of medical requests for various reasons. Ultimately, the professional and the patient both enter into a frustration and failure state, if not addressed properly.

Meaning and expression of the pain in custody

Pain is the first complaint of people seeking medical assistance (17). This is also true in the prison setting. But a nuance of prison healthcare is that these complaints can be expressed in many more various ways, sometimes difficult to understand or even baffling. Each patient presents in their own way, coloured by their specific problems and limitations.

Some psychological elements can influence the way the complaint is expressed: stress, patient's personality, fear of not being taken seriously, fear of not being treated sufficiently, fear of not being timely re-evaluated in case of problem, or the fear of lacking access to supportive care in the absence of physical complaints. The relationship between the professional and the patient is crucial. Among communication techniques, facilitating answers (e.g. reformulation) is useful to reassure the patient about the way his complaint is understood and accounted for (18). Practical aspects (e.g. how to access demand-doses of the treatment; how to tell my doctor that my symptoms don't improve) must be planned out, feasible, and the patient must be informed about these processes.

Health professionals' independence from the prison administration is recommended in the European rules (19). It is useful and the patient should be reminded of this fact, particularly when there is conflict between the patient and the facility. For example, even though the wardens are essential in relaying patient health complaints to health professionals, they should not be involved in the delivery of the treatments.

Language and/or cultural dimensions (20) justify to the use of an interpreting service or even a transcultural consultation, for complicated and chronic situations. Cultural and language barriers are generally underestimated. Some patients also lack the competence to formulate an appropriate complaint because they lack the social experience – mostly in cases of limited access to health-care outside custody.

Specific situations and questionings

Some specific situations require a recurrent evaluation for pain treatment within prison. These include treatment of drug users (particularly opioids), patients with mental illness, the pregnant or breast-feeding woman, and whenever there is suspicion of drug misuse.

The drug user (21, 22)

Prescribing painkillers for a drug user can make the patient, the prescriber and his team uncomfortable. A part of this discomfort can follow some bad experiences caused by insufficient knowledge on pain physiology, especially in opioid-addicted patients. It is important to assess the symptoms of these patients like that for any other and the pharmacological strategy should not be different. Nevertheless, in the need of an opioid, higher doses than usual may be required, for these patients have more μ receptors, especially if they also receive an opioid substitution therapy (OST). On the other hand, the health professional and the patient must be aware of the risk of allodynia or hyperalgesia linked to an accumulation of opioid metabolites. This adverse effect can be prevented, by the use of a multimodal analgesia (including paracetamol and adjuvants) and the maintaining of a good hydration. Constipation must also be prevented.

If the patient receives an OST of methadone or buprenorphine, it is theoretically possible to change its dosage to also alleviate pain. There are no clini-

cally-based trials which recommended this. However, the practice of pain management favours the use of two distinct opioids for two distinct functions. These involve the substitution element (stable, that doesn't change during the painful moment) and analgesic element (dynamic, time-limited). Oral route and long acting formulations should be used when possible. One must be careful about the interactions that could modify the effect of the OST (if so, it should be temporarily adapted).

There is usually more anxiety around opioids users but the other addictions also provoke a fair deal of anxiety for all parties involved. The biggest fear is that the treatment could worsen or reactivate an addiction. Another fear is drug misuse. Opioid analgesics are the most targeted medications but all the painkillers are as well concerned. Consequently, addicted patients are frequently at risk for under-treatment because of the medication choice, dosage and duration, for reasons that are related more to the fear of health-providers rather than to the patient condition. This issue is complex and reinforced by the provider's and/or the patient's stereotypes (see below) and poor communication.

Prescription seen as insufficient

- **Patient:** "The physician doesn't believe me", "The physician doesn't trust me, why should I trust him?", "I have to make my own way to get some relief" (*stimulates misuse*)
- **Physician:** "I will not be had!", "At least, there won't be any problem to stop the treatment!", "Is it enough?", "I can't help my patient"
- **Nurse:** "The doctor doesn't listen to the patient who still complains"

Prescription seen as excessive

- **Patient:** "The physician is ruining my efforts to be clean", "He's naive"
- **Physician:** "I'm ruining his efforts", "It was not necessary", "I was had", "Risk of allodynia/hyperalgesia?", "How will I manage to stop it at the end"
- **Nurse:** "The physician is ruining the efforts of the patient", "It was not necessary", "He was had and now I have to give things like a dealer!"

Prescription seen as optimal

- **Patient:** "My physician understood me, we dealt with our common fears, set up a plan, and decided to meet again"
- **Physician:** "In theory we found an agreement. Let us see if things will go as planned or if an adaptation is needed"
- **Nurse:** "The patient seems comfortable and not intoxicated, and the treatment is regularly re-evaluated."

The setting of treatment goals should involve all participating members of the treatment plan. The nurse team will be more comfortable if they are informed and involved in the care process. A regular and meticulous (with validated tool if possible) reassessment must be planned to check the treatment's adequacy in meeting the patient's needs. This will hinder the risk of too-long-too-strong treatment (risk of addiction) or too-brief-too-little treatment (insufficient pain control, loss of therapeutic alliance).

Regarding chronic pain management, the therapeutic role of opioids is still a debated topic for any patient.

Patients with mental illness

Two issues are interesting in this case:

- How can I reliably assess my patient?
- What precautions should I take?

Assessing the presence or absence of pain may be further complicated when there is a psychiatric problem. Anyway, answers to simple questions like: "Do you have pain?", "Where?", "Now?", "Since when/for how long?", "Is your position comfortable?" are generally attainable, even in case of severe dementia (23). The examination must be done with the help of the primary care physician to possibly make a diagnosis (so as not to treat a physical problem as if it was an anxiety attack). If the pain has a strong psychological impact, this aspect must be taken into account, also in case of personality disorder.

If, and only if, the patient is not able to communicate, hetero-assessment tools find their place here and can be very helpful.

In any case, but especially in this situation of a complicated assessment, regular and timely re-assessment is crucial. In case of insufficient relief, the treatment should be adjusted in its intensity with further questioning about the nociceptive or neuropathic nature of the pain. The basic but essential precautions concern the drugs interactions (e.g. tramadol in association with a selective serotonin-reuptake inhibitor antidepressant can lead to a serotonergic syndrome).

Pregnant or breast-feeding woman

Pregnant or breast-feeding women are a minority in prison. However, one must keep in mind that any woman of childbearing age could be pregnant without the medical service knowing it. The health professional working in the prison must be mindful and always ask if the patient could be pregnant. In case of any doubt, a quick pregnancy test can and should be done. Before any prescription of painkillers, it is important to rule out any gynæcologic problem as the cause of pain. If there are any questions which remain for the generalist, a specialist in the given area of concern should see the patient.

Some basic rules for any prescription to a pregnant or breast-feeding woman are: favour a single-class regimen, with a short half-life, the lowest effective dosage (needs a regular re-assessment), a good balance between maternal benefit and foetal risk according to the phase/trimester in pregnancy and available scientific data. Paracetamol can be used all through pregnancy and breast-feeding. Classical NSAIDs are strictly contra-indicated after the 24th week of amenorrhœa and aspirin must be avoided throughout pregnancy. Codeine and morphine should be avoided before childbirth (especially high and continued doses) because of the risk of withdrawal syndrome and respiratory depression conferred to the newborn. For neuropathic pain, amitriptyline has been widely used for years without a risk for congenital malformation cited in the evidence. It seems therefore safe to use for pregnant women.

Drug misuse

Drug misuse is a term that can describe several behaviours in prison: consuming a drug for its “recreational” effect, its use as a currency, storage (for suicidal intent or not), where the patient saves or accumulates batches of medications. The first two are usually reported by the wardens or mentioned during consultations. The last is usually discovered during prison-cell checks when the wardens bring piles of tablets to the medical service. In our experience, the most involved drugs are the first step analgætics, nicotine substitutes, proton pump inhibitors, and psychotropic drugs. This raises the question of the adequacy of the prescriptions and of the practical and symbolic roles of storages.

Drug storage at home is a reality (25, 26). The analgætics, principally NSAIDs, have a place of repute among it. This phenomenon is more of a concern in the correctional setting above all because of the fear of the suicidal risk. When

these tragedies occur, the health professionals' feelings are harboured by a feeling of liability that is more morally than legally supported.

What happens in the detained patient's mind to explain drug storage can be explained as follows: fear for a long-lasting pain without being taken seriously; wish of autonomy in a setting in which no autonomy exists; suicidal ideation; need for alleviation and to shorten the time felt in prison or trade between detainees or extortion.

The access to the patient can be complicated in prison and re-assessment could be delayed or impossible. In such situations, physicians might transfer more autonomy to the patient for self-management. This scenario makes drug-storage more likely.

Trafficking of drugs (psychotropics and opioids notably) and of narcotics is a reality in any prison. It is a security problem that is only minimally contributed to by the medical service. It must not lead to a more difficult access to treatments, to less ideal drug delivery for patients (crushing tablets into powder, opening capsules...), or a systematic directly observed therapy of the treatments by wardens. These issues only illustrate the need for improvements – such as prescribing short treatments with regular re-assessments by a physician or a nurse.

Conclusion

1. Pain is the most frequent complaint in an outpatient setting, in prison, as in the outside free society.
2. Its management begins with a complete assessment, with an interpreter if needed. Specific tools are generally useful.
3. The underlying cause should be treated as possible.
4. The symptomatic treatment must be chosen according to the physiopathology of the pain (nociceptive, neuropathic), its dynamics (acute, chronic) and the psychosocial contributive factors.
5. Recommendations for the general population also apply towards incarcerated people. Special attention should be given to drug interactions.
6. Adjuvants should be used as often as needed.
7. Drug users and other addicted people are frequently undertreated for their pain, as health professionals overestimate the risk of addiction and/or misuse.

Table 1: examples of recognised analgæsic adjuvants

ADJUVANT	USE	MECHANISM (if known)
Drug / substance		
Domperidone/metoclopramide	Migraine	Dopamine and 5-HT ₃ antagonism
Antimigraine drug	Migraine	Specific treatment
Clove (clove oil, whole clove, magistral preparation)	Tooth pain (ongoing studies for anal fissure)	Several, incl. inhibition of voltage-gated sodium channel (VGSC) and activation of transient receptor potential vanilloid subtype 1 (TRPV ₁)
Myorelaxants	Muscle spasm	Muscle relaxation
Corticosteroids	Inflammatory pain	Anti-inflammatory effect
Bisphosphonates	Bone pain (metastases)	Stabilisation of the bone tissue
Topical anaesthetic	Painful wound (dressing change, hæmorrhoids...) Some neuropathic pains (post-herpetic)	Inhibition of VGSC and activation of TRPV ₁
Nondrug		
Alternation cold/heat	Various pain	Activation of blood flow
Heat	Various pain	Activation of blood flow Muscle relaxation (slight)
Deep heat (ultrasound, short waves)	Inflammatory pain Muscle spasms	Activation of blood flow Muscle relaxation
TENS (transepidermal neurostimulation)	Neuropathic pain	Stimulation of the gate control and endorphines secretion
Medullary neurostimulation	Neuropathic pain	Stimulation of the gate control and endorphines secretion
Cognitive-behavioural therapy	Various pains	Cortical modulation
Hypnosis	Various pains	Cortical modulation
Relaxation	Various pains	Cortical modulation

Table 2: information on some common analgesics. *: INN: international non-proprietary name. †: OST: opioid substitution therapy, in case of addiction

INN*	Maximal dose (subject to country variation)	Information / Precautions
Paracetamol (=acetaminophen)	3–4 g./d.	In association (steps 2 or 3 WHO), allows a reduction of up to 30% of opioid needs
NSAIDs		
Ibuprofen	1'200–3'200 mg./d.	Caution in case of renal failure or history of peptic disease
Acetylsalicylic acid (=aspirine)	2.6–5.4 g./d.	Caution in case of renal failure or history of peptic disease, and in asthmatic people with a chronic rhinitis or urticaria (hives)
Diclofenac	150–225 mg./d.	Caution in case of renal failure or history of peptic disease
Mild opioids		
Codeine	200–360 mg./d.	Pro-drug metabolised into morphine by cytochrome CYP2D6. Genetic polymorphism: variable effect (sometimes almost none!)
Tramadol	400 mg./d.	Also active on the NMDA system: useful in case of neuropathic pain.
Strong opioids		
Morphine	No maximal dose	1 st choice strong opioid against strong pain. Renal elimination
Buprenorphine	No maximal dose. Possible ceiling effect of the analgæsia	1 st choice in case of renal failure (liver metabolism). Also used as an OST†. Agonist-antagonist: do not combine with other opioids (risk of acute withdrawal syndrome)
Fentanyl	No maximal dose	Potent, rapid onset, short duration. Appropriate for immediate management after an orthopædic trauma (injected or sublingual), or in a stable, long-lasting situation (e.g. cancer pain). Few indications in prison except for palliative care.
Hydromorphone	No maximal dose	Alternative to morphine, 5x more potent, for the same use.
Oxycodone	No maximal dose	Strong opioid also efficient against neuropathic pain
Methadone	No maximal dose	Monitor the QT interval on the ECG. Very long half-life. Not easy to use as analgæsia. Ideal for OST†

Table 3: Practical recommendations, efficiency and adverse effects of the main drugs used against neuropathic pain. NNT: number needed to treat (with 95% confidence interval) to give 50% pain relief to patient; NNH: number needed to harm (with 95% confidence interval) so that a patient stops the treatment due to adverse effects. Take from ref. (12–14,27)

Class/INN	Initial dose	Goal dose	Efficiency NNT (95% IC)	Adverse effects NNH (95% IC)	Adverse effects / Comment
ANTI-DEPRESSANTS					
TRICYCLICS Amitriptyline	10-25 mg./d.	25-125 mg./d.	3.1 (2.1-3.7)	14.7 (10.2-25.2)	Drowsiness, xerostomia, constipation, weight gain. Contraindicated in case of arrhythmia, severe cardiac failure, glaucoma and prostate hypertrophy
SSRIs			6.8 (3.4-441)	14.7 (10.2-25.2)	Nausea
SNRIs Venlafaxine Duloxetine	37.5-75 mg./d. 30 mg./d.	75-225 mg./d. 60 mg./d.	5.5 (3.4-14) 3.1 (2.2-5.1) 5.2 (3.8-8.3)	16.0 (10.9-29.5)	Nausea. Avoid in case of high blood pressure Nausea.
ANTEPILEPTICS					
Gabapentine	100 mg./d.	1800 mg./d.	4.3 (3.5-5.7)	26.1 (14.1-170)	Drowsiness, dizziness, peripheral edema
Pregabalin	50-75 mg./d.	150-600 mg./d.	3.7 (3.2-4.4)	7.4 (6.0-9.5)	Drowsiness, dizziness, peripheral edema
Carbamazepine	200-400 mg./d.	800-1000 mg./d.	2.5 (2.0-3.4) (trigeminal neuralgia)	3.7 (2.4-7.8)	Nausea/ vomiting, constipation, malaise/ dizziness, ataxia. Drug interaction: induction of CYP450 3A4, 2C9
OPIOIDS					
Tramadol	25-50 mg. 3x/d.	Max. 400 mg./d.	3.9 (2.7-6.7)	9.0 (6.0-18.0)	Nausea / vomiting, constipation, malaise/ dizziness, convulsions. Tramadol has also a monaminergic effect: risk of serotonergic syndrome if combined with other serotonergic drugs
Oxycodone	Individual titration		2.6 (1.9-4.1)	NNH not available	Nausea /vomiting, constipation, malaise/dizziness

References

- Royal College of General Practitioners/Royal Pharmaceutical Society. Safer Prescribing in Prisons: Guidance for Clinicians. Nottinghamshire Healthcare NHS; 2011.
- American Medical Association. Module 3 Pain Management: Barriers to Pain Management & Pain in Special Populations [Internet]. AMA Helping Doctor Help Patients; 2007 [cited 2012 Aug 3]. Available from: http://www.ama-cmeonline.com/pain_mgmt/printversion/ama_painmgmt_m3.pdf
- Loeser JD, Treede R-D. The Kyoto protocol of IASP Basic Pain Terminology. *Pain*. 2008 Jul 31;137(3):473-7.
- World Health Organisation. Constitution. Apr 7, 1948.
- Merskey H, Bogduk N. Classification of Chronic Pain: Descriptions of Chronic Pain Syndromes and Definitions of Pain Terms. 2nd edition. International Association for the Study of Pain; 1994.
- Woolf CJ. Central sensitization: implications for the diagnosis and treatment of pain. *Pain*. 2011 Mar;152(3 Suppl):S2-15.
- Charlton J. The management of postoperative pain. *WFSA Update in Anesthesia*. 1997;7:2-17.
- Cullen DJ, Bates DW, Leape LL. Prevention of adverse drug events: a decade of progress in patient safety. *J Clin Anesth*. 2000 Dec;12(8): 600-14.
- Neuropathic Pain: The Pharmacological Management of Neuropathic Pain in Adults in Non-Specialist Settings [Internet]. London: National Institute for Health and Clinical Excellence (UK); 2010 [cited 2012 Aug 5]. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/22319807>
- Attal N. [Therapeutic advances in pharmaceutical treatment of neuropathic pain]. *Rev. Neurol. (Paris)*. 2011 Dec;167(12):930-7.
- Dworkin RH, O'Connor AB, Audette J, Baron R, Gourlay GK, Haanpää ML, et al. Recommendations for the pharmacological management of neuropathic pain: an overview and literature update. *Mayo Clin. Proc*. 2010 Mar;85(3 Suppl):S3-14.
- Finnerup NB, Otto M, McQuay HJ, Jensen TS, Sindrup SH. Algorithm for neuropathic pain treatment: an evidence based proposal. *Pain*. 2005 Dec 5;118(3):289-305.

- Finnerup NB, Otto M, Jensen TS, Sindrup SH. An Evidence-Based Algorithm for the Treatment of Neuropathic Pain. *MedGenMed*. 2007 May 15;9(2):36.
- Renaud S, Besson M, Cedraschi C, Landmann G, Suter MR, Taub E, et al. [Chronic neuropathic pains. Recommendations of the Special Interest Group of the Swiss Society for the Study of Pain]. *Forum Med Suisse*. 2011 Nov 23;(Suppl. 57).
- Allaz A. Le messenger boiteux: approche pratique des douleurs chroniques rebelles. *Medecine & Hygiene*; 2003.
- McWilliam CL. Patients, persons or partners? Involving those with chronic disease in their care. *Chronic Illn*. 2009 Dec;5(4):277-92.
- Brawer PA. *Pain in Primary Care Settings*. Springer; 2008.
- Henbest RJ, Stewart M. Patient-centredness in the consultation. 2: Does it really make a difference? *Fam Pract*. 1990 Mar;7(1):28-33.
- European Convention for the Prevention of Torture and Inhuman or Degrading Treatment or Punishment. *European Convention for the Prevention of Torture and Inhuman or Degrading Treatment or Punishment*. CPT/Inf/C (2002) 1 [EN] 2002.
- Silverman J, Kurtz S, Draper J. *Skills For Communicating With Patients*. 2nd Revised edition. Radcliffe Publishing Ltd; 2004.
- Murnion B. Management of opioid substitution therapy during medical intervention. *Intern Med J*. 2012 Mar;42(3):242-6.
- Jaksch W. Substitutionsbehandlung und Schmerztherapie. *Universimed* [Internet]. 2012 May 24 [cited 2012 Aug 9]; Available from: <http://neurologie-psychiatrie.universimed.com/artikel/substitutionsbehandlung-und-schmerztherapie>
- Pautex S, Michon A, Guedira M, Emond H, Le Lous P, Samaras D, et al. Pain in severe dementia: self-assessment or observational scales? *J Am Geriatr Soc*. 2006 juill;54(7):1040-5.
- Pereira Miozzari AC, Senhaji S, Rollason Gumprecht V, Piguet V, Jungo Naçoç C, Luthy C. [Drug analgesia and pregnancy]. *Rev Med Suisse*. 2012 Jun;(347):1389-94.

- De Bolle L, Mehuys E, Adriaens E, Remon J-P, Van Bortel L, Christiaens T. Home medication cabinets and self-medication: a source of potential health threats? *Ann Pharmacother*. 2008 Apr;42(4):572-9.
- Sahebi L, Vahidi RG. Self-medication and storage of drugs at home among the clients of drugstores in Tabriz. *Curr Drug Saf*. 2009 May;4(2):107-12.
- Besson M, Piguet V, Dayer P, Desmeules J. New approaches to the pharmacotherapy of neuropathic pain. *Expert Review of Clinical Pharmacology*. 2008 Sep;1(5):683-93.

Section 3

Organizational Consideration

Organization of a Prison Pharmacy

Marcus Bicknell

Introduction

The prison pharmacy is integral to the effective delivery of health care services within a prison. The fundamental role of pharmacy services is to ensure the safe administration of medicines to the patients detained in custody in accordance with each patient's prescribing regimen.

Pharmacist supported by technicians and other clinical colleagues and managers are key to the effective running of a prison pharmacy service and the safe, efficacious and cost-effective use of medicines.

The potential remit of the service encompasses a wide range of modalities which include the efficacy and safety of prescribed medicines, the use of prescribing formularies, stock ordering and safe storage of medicines, wider issues of clinical governance, diversion of prescribed treatments as well as issues pertaining to commissioning and contracting of service. Some pharmacists provide an extended role across a variety of interfaces.

Dispensing

The primary role of a pharmacy is to ensure the safe supply of a licensed or indicated medicine to a patient. The pharmacist's professional duty is to ensure that the type of medicine is appropriate, that the supply is in date and unadulterated, that where ever possible drug interactions, patient allergies, contra-indications and cautions have been recognised and addressed. Safety of prescribing in pregnant and breast feeding women in prison should be carefully considered within the Women's Estate.

The role of the pharmacy in a prison typically extends beyond that of a community pharmacy in that traditionally in a custodial setting all medicines will be prescribed on a medicines chart which is available for the pharmacist to

scrutinise. The mechanism for prescribing may differ from that in the local community in terms of how prescriptions are completed and stock ordered.

The availability of medicines to patients out of hours is an important consideration for the prison pharmacy service. Prisoners often arrive at a prison out of core service hours or a medical need which requires a medicine urgently may arise out of hours. It is important that the appropriate medicines are available for administration on these occasions without critical delay.

Some medicines may be available on a non-prescribed basis in a prison as they are in the community. Examples may include simple analgesia and certain topical treatments. The pharmacy service may play a role in stocking this 'over the counter' medicine service and also in ensuring that it is used safely and efficaciously.

Self-harm and suicide are well recognised risks in prison settings and the risks associated with Paracetamol and Non-steroidal anti inflammatory drug overdose should be carefully considered in this context.

Medicines may be unsafe in a prison setting for a variety of reasons. Lethal intentional self poisoning with Amitriptyline and Paracetamol are well recognised. Accidental poisoning through Methadone overdose is known. Sudden cardiac death attributed to methadone administration with or without co-prescribing of other medicines such as benzodiazepines and anti-psychotics is reported. It is important for the prison pharmacist to be mindful of these risks.

Certain medicines such as Z drugs including Zopiclone, Mirtazipine, Gabapentin, Pregabalin, Tramadol, Dihydrocodeine, other Opioids, and Benzodiazepines including Clonazepam have a reputation for misuse in prisons and may be prescribed inappropriately. The prison pharmacist is in a pivotal position to play an important role in identifying such prescribing practise and to make recommendations to consider means of reducing inappropriate prescribing when it is encountered where appropriate so to do.

Ordering and Storage

The prison pharmacy service must be well organised in that it is able to ensure a continuous supply of medicines to patients. Maintaining satisfactory stock levels may be facilitated by operating a formulary and maintaining sufficient stock of medicines identified by the formulary. Where medicines are

prescribed which are not listed on the prison formulary systems should be in place to ensure the speedy delivery of the medicine to the prison. Not having medicines available can compromise patient care. Over stocking can lead to an expensive waste of out of date medicines.

All medicines in a prison must be stored safely under lock and key. Measures to ensure safe storage may exceed those in the community as it is well recognised that prisoners may misappropriate medicines in prison. The prison pharmacy is a common target during prison riots and fatalities have been reported as a result of prisoners stealing medicines such as Methadone from the pharmacy during a riot having compromised the security systems in place. The safe storage and administration of controlled drugs and psychotropic medicines such as opioids and benzodiazepines is paramount in a prison as these are recognised as being most prone to misuse.

The pharmacist plays a fundamental part in ensuring that wastage of medicines is kept to a minimum due to date expiry and that the most cost efficient supply of medicines is maintained. The use of generic medicines where allowed may support cost efficiency. Some health care services have access to prescribing support tools which enable the most cost effective provision of medicines.

Estates and Equipment

The geographical layout of the prison pharmacy, the locked storage of medicines and prescriptions, the use of a safe, the recording of stock levels and dispensing of controlled drugs, the deployment of drug trolleys, satellite dispensing of medicines in different locations within the prison and the efficient use of computer systems are all essential considerations in establishing a successful prison pharmacy.

Clean and appropriate surfaces for the preparation, counting and measurement of medicines are paramount. A prison pharmacy needs to be spacious, clean, tidy, comfortable and operate in an environment of calmness and planning. It must be safe and secure and the staff should feel supported and unthreatened within the custodial setting. The equipment used should be of a sufficiently high standard and serviced and maintained regularly.

Refrigeration of certain medicines and vaccines and the continuity of the cold chain are important considerations. Refrigerators must have surety of temper-

ature control. Storing insulin and eye drops for patients which need to be refrigerated but administered on a daily basis presents potential logistical difficulty.

Specific logistical consideration must be given to the supervised consumption of certain controlled medicines such as Buprenorphine, Methadone and Diazepam. This may involve using automated delivery systems which the pharmacist will be required to stock. Additional manual supervision usually by clinically trained staff of automated dispensing equipment may still be required. Implementing these services is costly and supervised consumption of controlled medicines is time consuming. Typically the movement of significant numbers of patients within the prison or the transportation of large quantities of controlled medication is required however this requires considerable logistical planning, particularly from a security as well as clinical perspective.

Special consideration should also be given as to how medicines are dispensed to segregated prisoners whose movement within the prison is restricted. Some prisons have dedicated hospital wings which may require a higher input of pharmacy support and require different systems by which patient assessment, prescribing and administration of treatment is undertaken.

Establishing a prison pharmacy requires significant financial investment. The costs of building the facility, purchasing equipment, obtaining a stock of medicines and deploying a high quality pharmacy team should be carefully considered.

Accountability

Prisons should have effective Drugs and Therapeutic Committees attended by prescribers, pharmacists, health care managers and experts from outside the prison involved with commissioning the prison health care service. A prison governor may also attend these meetings. They are not intended to be a forum to discuss individual patient cases.

A prison prescribing formulary should be developed which is in accord with local community and national prescribing guidance. The committee should meet regularly to discuss key prescribing developments and concerns and to ensure that the prescribing, dispensing and administration of medicines in the prison is efficacious, safe and not open to misuse.

Regular audits of prescribing practices should be undertaken. Untoward events related to medicines should be reported in a culture of openness and honesty. The roles of different prescribers within the prison service including general practitioners, psychiatrists, drug treatment prescribers and non-medical prescribers should be clear and open for discussion.

The clinicians in the prison should meet on a regular basis with all relevant colleagues as a wider health care team to discuss the continuous effective running of the health service within the prison. Individual clinical cases could be confidentially discussed at this meeting which should include the prison pharmacist. These meetings should be held regularly and be minuted. Weekly meetings would reflect good practice, depending upon the size of the establishment. They may be less frequent in smaller prisons and establishments with a lower security category.

The restrictions which the prison infrastructure places upon health care systems due to security requirements may require formulary and traffic light recommendations to be overridden on occasions to ensure that patients receive the highest standards of care. These compromises are acceptable however they should be discussed and explored at team meetings at an individual level, in a planned and accountable way.

An effective prescribing computer software system as part of a continuous electronic health record facilitates safe and auditable prescribing. The prison pharmacist should play a key role in ensuring the effective running of these work streams and systems.

The pharmacist and staff who administer medicines should ensure that a robust system is in place to report non-concordance of treatment by patients as well as the misappropriation or diversion of medicines.

The issue of supervised as opposed to in-possession medication to patients in prison is one which taxes many commissioners, prescribers and prison governors. The pharmacist should play a role in exploring these challenging issues within the prison. National directives often dictate how medicines should be administered in prisons. Local guidelines may adapt these directives. Risk assessment of individual patients plays an important part in determining which patients can hold a supply of their medicines in possession.

Drug and Alcohol Treatment

The treatment of drug users with opioid substitution and or benzodiazepines according to the presentation by the patient is an important role of the prison health care team. The detoxification of alcohol dependent patients with benzodiazepines is of similar importance. These therapeutic areas carry special risks regarding patient safety which pertain to both under and over treatment and as such this branch of practice requires special consideration.

Prison teams require additional training and resources to effectively and safely treat drug and alcohol users. The prison pharmacy service plays a key role in facilitating effective and safe treatment which mitigates against the risks of suicide, seizures, neurological complications, unpleasant withdrawal symptoms and overdose. It is essential that prescribers, pharmacists, nurses, technicians and custodial staff work effectively to ensure that a high standard of care is delivered to these challenging and vulnerable patient groups.

Local and national guidelines should be available within a prison to support the safe and effective treatment of drug and alcohol users in prison.

Contracts and Commissioning

A wide range of models exist for the procurement of prison pharmacy services. A contract to provide pharmacy services to a prison is a commercial opportunity which encompasses similar issues re organisation and profitability as a community pharmacy contract. These matters should be carefully considered but should not be allowed to compromise patient care. Successful medicines management offers significant potential savings to health systems which must be balanced with patient factors leading to the most cost-effective prescribing, notwithstanding the need for a prison pharmacy service to be financially viable. The important though controversial role of the pharmaceutical industry should also be considered in the context of prescribing and pharmacy service provision.

Palliative Care

Improved longevity, growing prison populations, improved criminal detection using DNA technology and the burgeoning internet have resulted in an expanded older population of prisoners and a greater need for the delivery of palliative care in prisons. The importance of providing humane interventions

in this patient group to ensure the limitation of pain and suffering necessitates the expert prescribing and administration of medicines.

End of life care in prisons requires specific consideration to ensure that the appropriate holistic care can be provided in a challenging environment. The availability of appropriate medicines and drug delivery systems such as syringe drivers is paramount and is a key and evolving role for the prison pharmacy service working in partnership with a skilled prison end of life care team or a peripatetic palliative care team.

Injectable medication plays an important part in end of life care in many cases. Morphine, Diamorphine, Midazolam, Levomepromazine and Hyoscine are commonly prescribed in an anticipatory way so that they are immediately available as and when a dying patient requires them.

Oxygen is often used in end stage respiratory and cardiac disease. The prison pharmacy may play an important role in ensuring its safe supply and administration.

The Pharmacist's Wider Role

In some prison settings the pharmacist may take on a wider role. Many prisons are in remote locations and some may offer medical services to staff and visitors as well as detainees. The pharmacist may be responsible for ensuring the effective supply of medicines to these groups and being involved in an occupational health role.

An increasing number of pharmacists have trained as non-medical prescribers. This skill affords the prison the opportunity to extend the provision of prescribing to patients. This can be especially useful in the management of chronic diseases such as hypertension, diabetes, Chronic Obstructive Pulmonary Disease, asthma, epilepsy, thyroid disorders and hyperlipidaemia.

The pharmacist and prison pharmacy team may also play an important role in disease prevention within a prison. Nicotine replacement interventions to optimise smoking cessation run by the prison pharmacy service are an excellent example of primary and secondary prevention interventions which can be pharmacy lead. The organisation of hepatitis B immunisation and influenza vaccine supply should be the responsibility of the pharmacy.

Medicine use reviews lead by pharmacists, afford a planned approach to ensuring the optimal use of prescribed medicines by patients.

Optimal concordance by patients of treatment can be supported by the pharmacy service. The effective use of inhalers being an excellent example of a pharmacy supported service designed to optimise inhaler technique.

Patient monitoring of certain medicines is a fundamental aspect of care which can be supported by a pharmacy service. This ensures that relevant interval testing and review of test results takes place for medicines which includes Lithium, Warfarin, Methotrexate and Clozapine. The pharmacist is able to cross check administration with relevant blood testing and results.

Senior prison pharmacists have an important role regionally, nationally and internationally in developing guidelines and promoting the continuous development and improvement of prison health care systems.

Prisons are recognised as being one of the most challenging environments for personnel who provide health related services in which to work. There is a high incidence and prevalence of many diseases and conditions in prisons. These include mental health problems and addictions. Patient behaviours in a detained population can differ greatly on occasions from patient behaviours in a non-detained community setting. The recruitment and retention of a skilled workforce in prisons remains difficult. It is essential that a prison pharmacy service trains its staff to a high standard. The pharmacy team must be given continuing support and their professional development should be a priority. Exposures to intimidation, bullying or coercion by prisoners or staff must be handled sensitively and to a high and thorough standard and prevented. A culture of critical feedback should be encouraged, particularly in pharmacy services where the attributes of precision are some of the most evolved skills from across the clinical professions.

The Authors

Marcus Bicknell, Chair of the Royal College of General Practitioners Secure Environments Group, United Kingdom

Alejandra Casillas, Department of Community Medicine Primary Care and Emergency Medicine, Geneva University Hospitals and University of Geneva, Switzerland

Andrew Coyle PhD, Emeritus Professor of Prison Studies, University of London; and Visiting Professor. University of Essex, United Kingdom

Bernice S. Elger, Universities of Geneva and Basel, Switzerland

Ariel Eytan, Department of mental health and psychiatry, Geneva University Hospitals and University of Geneva, Switzerland

Laurent Gétaz, Department of Community Medicine Primary Care and Emergency Medicine, Geneva University Hospitals and University of Geneva, Switzerland

Bruno Gravier, Service de Médecine et de Psychiatrie Pénitentiaire, University Hospitals of Lausanne, Switzerland

Torsten Kolind, Centre for Alcohol and Drug Research, Aarhus University, Denmark

Michael Levy, Director Justice Health Service, ACT Health Directorate, and Australian National University, Canberra, Australia

Andrés Marco, HIV/AIDS & HCV Programme, Prison Medical Services Men's Barcelona. Department of Justice Autonomous Government of Catalonia, Spain

Valérie Piguet, Department of Anæsthesia, Pharmacology and Intensive Care, Geneva University Hospitals, Switzerland

Jean-Pierre Rieder, Department of Community Medicine Primary Care and Emergency Medicine, Geneva University Hospitals and University of Geneva, Switzerland

Catherine Ritter, former general practitioner in a pre-trial setting, Switzerland

Heino Stöver, Professor of Social Scientific Addiction Research at the Faculty of Health and Social Work, University of Applied Sciences, Frankfurt, Germany

Sven Todts, Former Medical Director Prison Health Care Service, Federal Public Service Justice, Belgium

Hans Wolff, Department of Community Medicine Primary Care and Emergency Medicine, Geneva University Hospitals and University of Geneva, Switzerland

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